Appendix A

Wetland Delineation Report

Wetland Delineation Report and Mapping for the Proposed Anton Larsen Bay Road Extension

for DOT&PT

Bosworth Botanical Consulting June 2016

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Introduction

The Department of Transportation and Public Facilities is proposing to extend Anton Larsen Bay Road by two miles to a small saltwater cove NW of the present road ending. The proposed road generally follows a private, armored, ORV trail that accesses a homestead on the beach approximately 2/3rds of the way to the proposed road's end.

Access to the site from the Kodiak Airport is via Anton Larsen Bay Road - when leaving the airport turn right or NE on Rezanof Drive and 500 ft. later turn left or NW on Anton Larsen Bay Road and proceed approximately 11 miles to the end of the road.

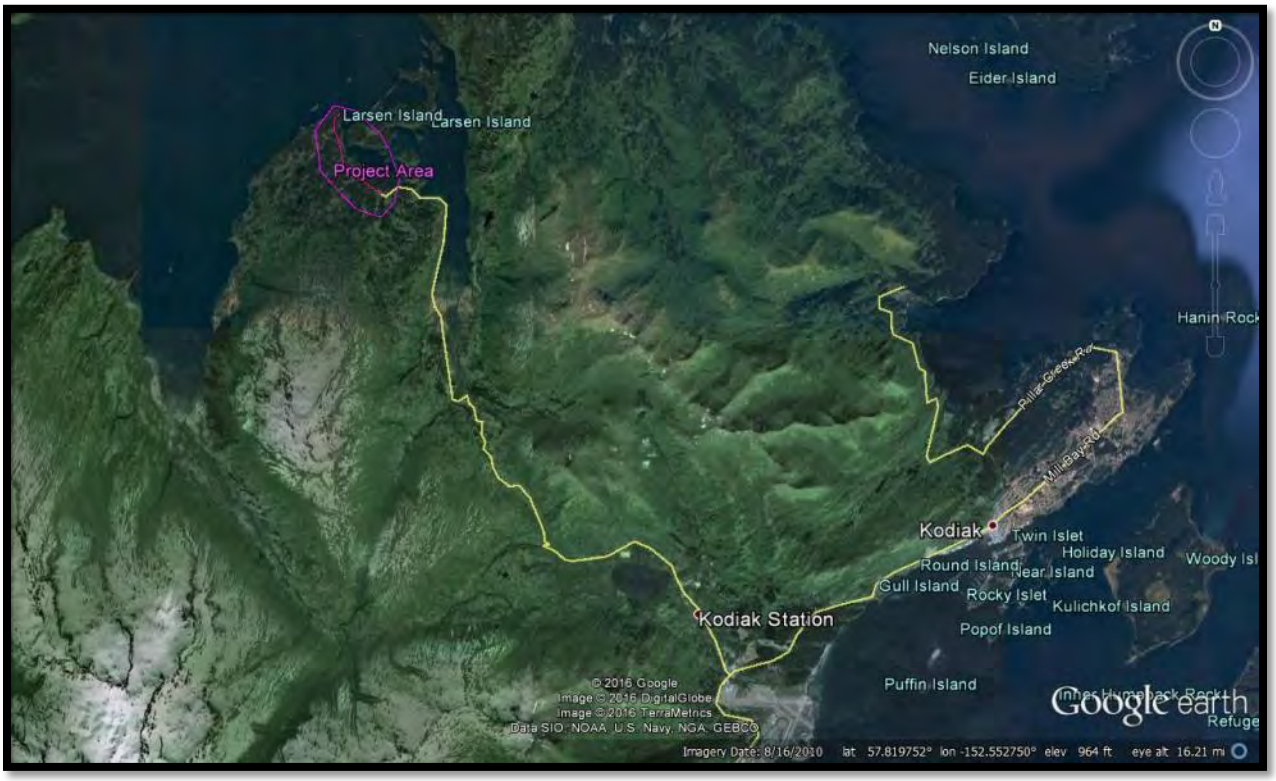
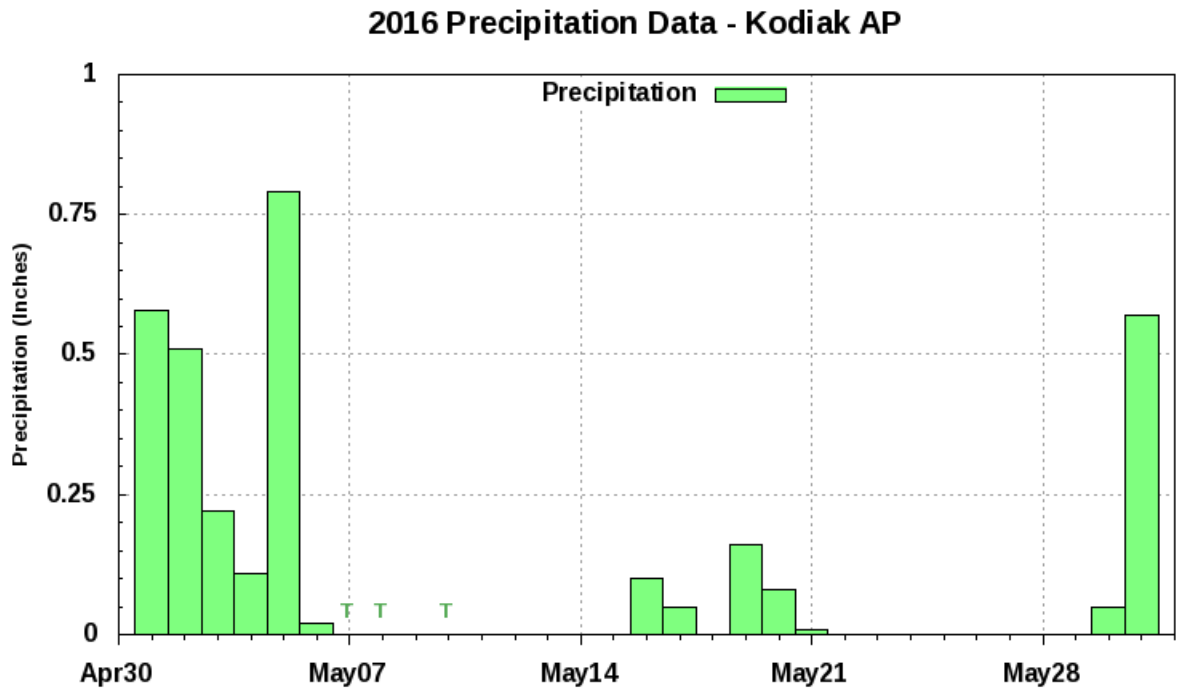
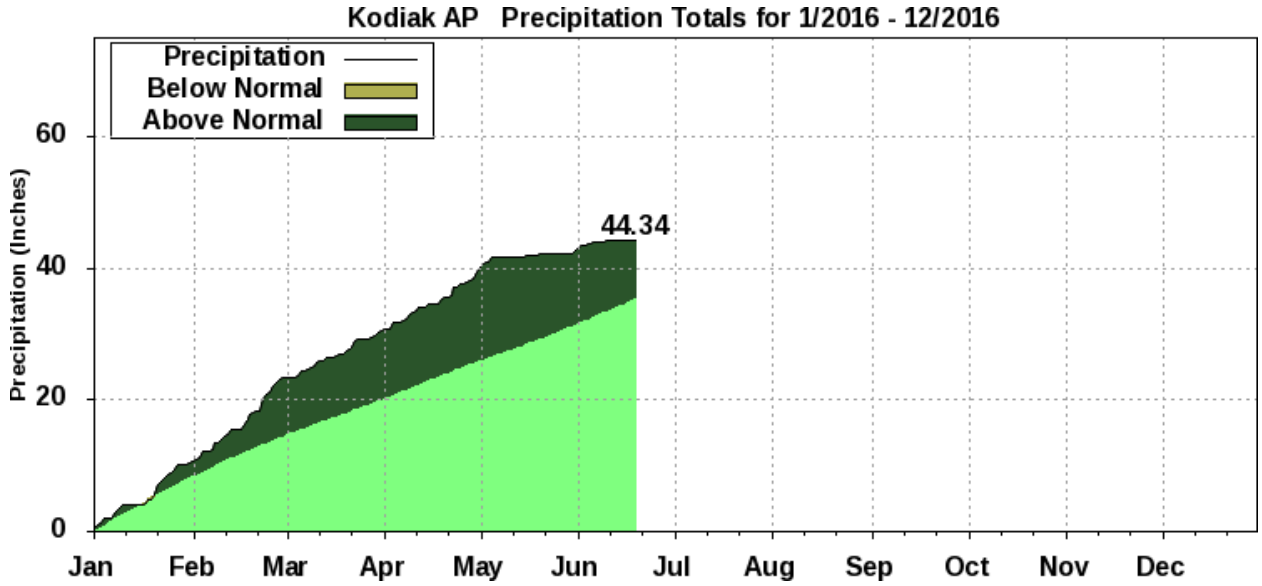


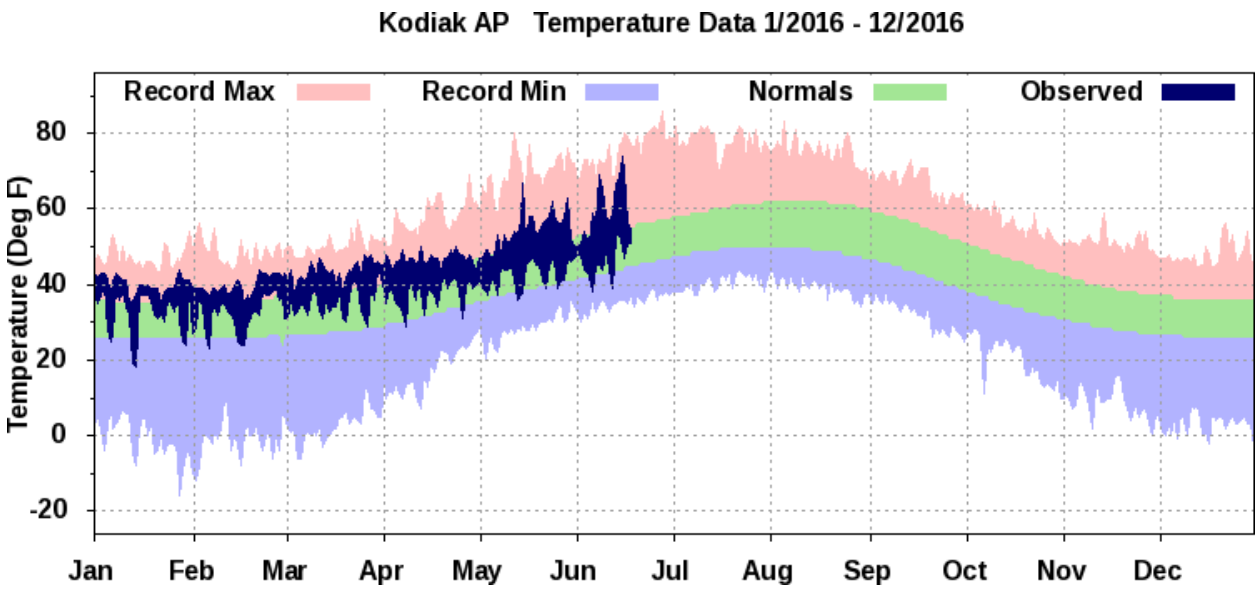
Figure 1 - Location map for Project

Methods

The area was visited for wetland delineation on June 1, 2016. There had been half an inch of rain and temperatures in the 50's °F the day before the field work but the week before that had been sunny and in the high 50's. The winter in general had been warmer and wetter than normal.







Wetlands areas were delineated using the "triple parameter" method described in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) as supplemented by the, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region – November 2007. Wetlands are required to have a prevalence of wetland hydrology, hydric soils, and hydrophytic vegetation. Jurisdictional wetlands are determined when positive indicators of all of these three criteria are present. The "routine determination delineation" methodology was used. The wetland boundaries and classifications described herein represent best professional opinion.

Shape files of the proposed road with cut and fill limits were provided by DOT&PF. The project impact width varied from 33 feet of roadway to 130 feet along the road areas that had pullouts or large cut and fill. Sample points were done along the road alignment anywhere there were significant changes in vegetation, soils or hydrology. At each sample point, the wetland status of that point was determined by observing indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. Once representative sample points were done further wetland boundaries along the proposed route were flagged and marked with a GPS waypoint.

Sample plot vegetation was divided into three strata; tree, shrub, and forb, and each layer was classified using the prevalence index (a weighted-average wetland indicator status of all plant species in the sample plot) and the dominance test (more than 50% of the dominant plant species across all strata are rated obligate, facultative wet, or facultative). The 2012 U.S. Army Corps of Engineers *National Wetland Plant List –Alaska Region* was used to classify plants.

Hydrology was determined using two methods: (1) visually, if the water table is at or above the surface, or (2) with a soil pit. The presence of standing water, depth to free water in the soil pit, and depth to saturated soils was recorded. Other primary and secondary hydrology indicators were

recorded, such as presence of watermarks, sediment deposits, drift deposits, iron deposits, hydrogen sulfide odor, geomorphic position, and drainage patterns in wetlands.

Soil pits were dug to a depth of 12-16 inches, or to bedrock or glaciomarine sediment refusal, to determine if indicators of hydric soils were present. Soil colors were determined from a moist sample with the Munsell Soil Color Chart. Sample site data sheets are included in Appendix A.

Final delineation maps were done in GIS. Impacted wetland polygon acreages and impacted linear feet of stream, within the limits of the road alignment and its associated cut and fill, are shown on the delineation maps. Polygon acreages, route lengths, and stream lengths were calculated in GIS.

Project and Project Area Description

Project Description

The project is a two mile extension of the present 11.7 mile Anton Larson Bay Road. Most of the proposed road route is now a private ORV trail to a homestead on the beach about 2/3rds of the way along the route.

Geology and Geomorphology

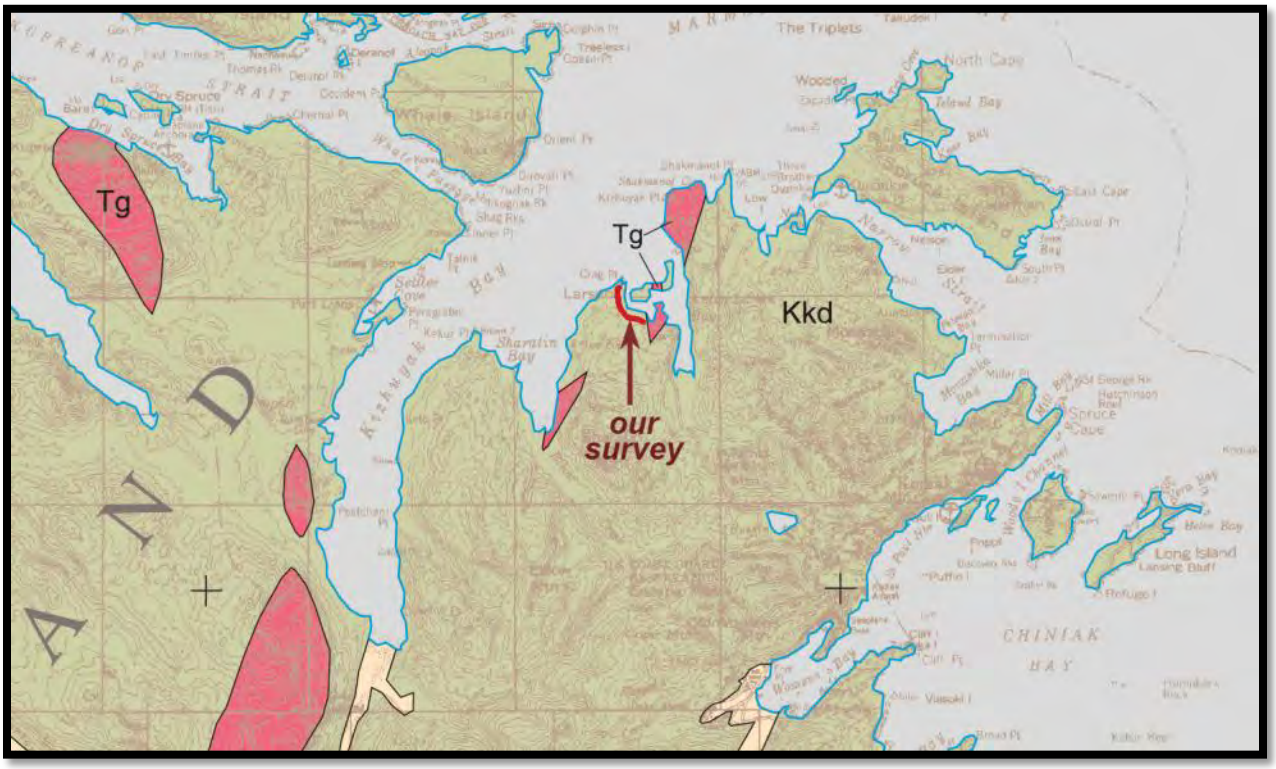
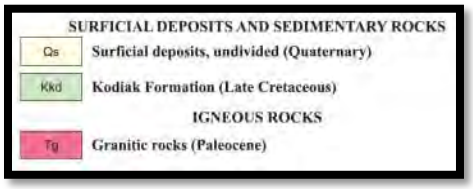


Figure 2 - Geology of Northern East Kodiak



The project area topography is relatively low rolling hills intensely scoured and eroded by three glaciations that brought ice down Cook Inlet and across Shelikof Strait and the Kodiak Archipelago.

Hydrology

Streams were categorized in the field into:

- ephemeral - surface flows only after rain or snow-melt and has no distinct channel though there is subsurface saturation/flow at all times.
- seasonal or intermittent - flows during certain times of the year when smaller upstream waters are flowing and when groundwater provides enough water for stream flow.
- perennial streams - a stream that has continuous flow in parts of its *stream* bed all year round during years of normal rainfall.

There are nine small, seasonal and intermittent watersheds among the rounded hills along the project area road extension, all of them flowing into the ocean at Larsen Island and Marmot Bay.

Figure 3 - Perennial stream in an alluvial, well-drained, beaver-influenced valley, mid-way along the route.

Figure 4 - One of three, small, seepy, perennial streams along the route with wetland surrounding them.

Figure 5 - Small palustrine pond surrounded by wetland about mid-way along the route.

Figure 6 - Large pond in the last third of the route - topographic maps indicate this was a salt-water embayment before uplift stranded it.

Soils

The project area soils and the island of Kodiak are distinctive because of the emplacement of three, consecutive, June 6th, 1912 - Novarupta volcanic ash layers into the regular soils of the area.

The hydric soils of the project area are primarily deep peats with 8 -15 inches of mixed organics and silica tephra layers and pure silica tephra layers of graduated coarseness at 4-8 inches below the top layer of peat. Most of the tephra in these wetland soils has mottles and oxidized root channels.

Figure 7 - Mottled, saturated tephra layer under and over peat in the hydric soil at wetland sample point C.

Figure 8 - Wetland soil at sample point E

Vegetation

Upland

The typical upland vegetation of the project area is a young Sitka spruce (*Picea sitchensis*) forest with a very sparse understory of one or more of the following species: early and Alaska blueberry (*Vaccinium ovalifolium),* salmonberry (*Rubus spectabilis*) spiny wood fern (*Dryopteris dilatata*) and/or dwarf dogwood (*Cornus canadensis*). This is the most common vegetation type along the proposed road route.

There is one valley along the route that has a larger perennial stream that has developed a well-drained alluvial substrate dominated by Sitka alder and willow.

Three of the NE-facing hillslopes along the route are open forb meadows and mixed deciduous/evergreen woodland dominated by fireweed, lady fern, spiny wood fern, salmonberry, cottonwood and Sitka spruce.

Figure 9 - Young well-drained Sitka spruce forest with scattered salmonberry shrubs

Figure 10 - Young, open well-drained Sitka spruce forest with oak fern understory.

Figure 11 - Young, alluvial valley dominated by Sitka alder and willow.

Figure 12 - Young, open, upland, mixed deciduous/Sitka spruce forest.

Figure 13 - Well-drained lady fern and forb meadow

Forested wetland (PFO4)

Figure 14 - Forested wetland dominated by stunted western hemlock, Sitka spruce and *Glyceria sp.*

Palustrine Wetlands (PEM1)

Figure 15 - Toe-of-slope roadside wetland near the end of the road. The wetland is partially dammed by the road. The water on the left drains into a roadside ditch which crosses under the road in a culvert to the ocean.

Figure 16 - Narrow, but very deep, perennial stream through a wetland at sample pt D.

Figure 17 - The largest wetland on the route just past sample pt. D. Dominated by cotton grass, horsetail, great burnet and felwort. A small shallow, palustrine pond is in the background.

Figure 18 - Old beaver pond dominated by Lyngbei sedge at sample pt. E.

Table 1 - Plant Species List (Lichvar, 2014)

Scientific name	common name	Indicator status[1]
Alnus sinuata	Sitka alder	FAC
Angelica genuflexa	kneeling angelica	FACW
Athyrium felix-femina	lady fern	FAC
Calamagrostis canadensis	Canada bluejoint	FAC
Carex canescens	hoary sedge	FACW
Chamaenerion angustifolium	fireweed	FACU
Cornus canadensis	dwarf dogwood	FACU
Deschampsia beringensis	Bering hairgrass	FAC
Dryopteris dilatata	spiny wood fern	FACU
Equisetum arvense	horsetail	FACU
Equisetum fluviatile	water horsetail	OBL
Eriophorum sp	cottengrass	FACW
Festuca rubra	red fescue	FAC
Fritillaria camschatcensis	chocolate lily	FAC
Gymnocarpium dryopteris	oak fern	FACU
Heracleum maximum	cow parsnip	FACU
Juncus alpinus	alpine rush	OBL
Leymus mollis	beach rye	FAC
Lysichiton americanum	skunk cabbage	OBL
Picea sitchensis	Sitka spruce	FACU
Rubus spectabilis	salmonberry	FACU
Salix sp.	willow	FAC
Sambucus racemosa	elderberry	FACU
Sangisorba canadensis	great burnet	FACW
Swertia perennis	felwort	FACW
Tiarella trifoliata	foamflower	FAC
Vaccinium ovalifolium	early blueberry	FAC

Table 2 - Indicator code table (Lichvar, 2012)

Indicator Code	Type	Comment
OBL	Obligate Wetland	Almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface.
FACW	Facultative	Usually occur in wetlands, but may occur in non-wetlands. These plants

[1] See Table 2 for abbreviation definitions

	Wetland	predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
FAC	Facultative	Occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
FACU	Facultative Upland	Usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
UPL	Obligate Upland	Almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.
NI	No indicator	Insufficient information was available to determine an indicator status.

Results

Table 3 - Results

waypoint	stream type	stream width and depth	wetland start/end	sample pt & notes	mapped wetland unit area (sq.ft.)	Linear feet of stream impacted (ft.)
Begin at the end of Anton Larsen Bay Rd.						
WP1	culvert w/seasonal	3.5'x4"				**101**
WP2			start wet - on uphill side of road			
WP3	seasonal	1.5"x4'		sample pt. A		**109**
WP4			end wet on uphill side of road		1,378	
WP5	perennial	25'x1'				**96**
WP6	seasonal	2'x2"				**77**
WP7				sample pt. B		
WP8	perennial	5'x2"				**92**
WP9	perennial	12"x16"				**85**
WP10			15' of wetland	sample pt. C	**1,344**	
WP11	perennial	6'x5"				**70**
WP12	perennial	10"x3'	20' of wetland	sample pt. D	**1,664**	**78**
WP13	pond edge					
WP14	seasonal	1'x5"				**267**
WP15			start wet			
WP16			end wet		**10,263**	
WP17			start wet			
WP18			end wet		**4,791**	
WP19			start wet			
WP20				sample pt. E		
WP21			end wet		**4,429**	
WP22			start wet			
WP23			end wet		**6,629**	
WP24			start wet to west side of alignment		**4,524**	
WP25			stop wet		**1,244**	

	stream # sub-totals				Wetland area sub-totals	Stream length sub-totals
	ephemeral 0				**PFO4 5,768**	**ephemeral 0**
	seasonal - 4				**PEM1 30,498**	**Seasonal 554**
	perennial - 6					**Perennial 496**
	stream # total - 10				**wetland area total 36,266**	**stream length total - 1050'**

Table 4 - Sample point table

Sample point	Dominant vegetation/ Hydrology / Geomorphology	Cowardin Classification	PJD[2]	Rationale for PJD
A	Sparsely vegetated, shallow bog on a flat terrace near the ocean.	PEM1C	Yes	Wetland on RPW that flows into ocean
B	Salmonberry, fireweed and fern dominated flora on a well-drained hillside.	Upland	No	Upland
C	Small valley-bottom stream-side wetland, sparsely vegetated w/cotton grass, kneeling angelica and burnet.	PEM1C	Yes	Wetland on RPW that flows into ocean
D	Small valley-bottom stream-side wetland, sparsely vegetated cotton grass, kneeling angelica, *Swertia* and burnet.	PEM1C	Yes	Wetland on RPW that flows into ocean
E	Lake-side, old beaver pond wetland dominated by Lyngbyei sedge.	PEM1C	Yes	Wetland on lake that is on an RPW that flows into the ocean.

[2] PJD - Preliminary Jurisdictional Determination

Conclusions

Using GIS tools and wetland information gathered in the field, the square footage of wetlands along the proposed road extension was determined. The road and its associated cut and fill totals 36,266 sq. ft. of potentially impacted wetland (9 wetland units) and 4 seasonal and 6 perennial streams totaling 1,050 linear feet of potentially impacted stream.

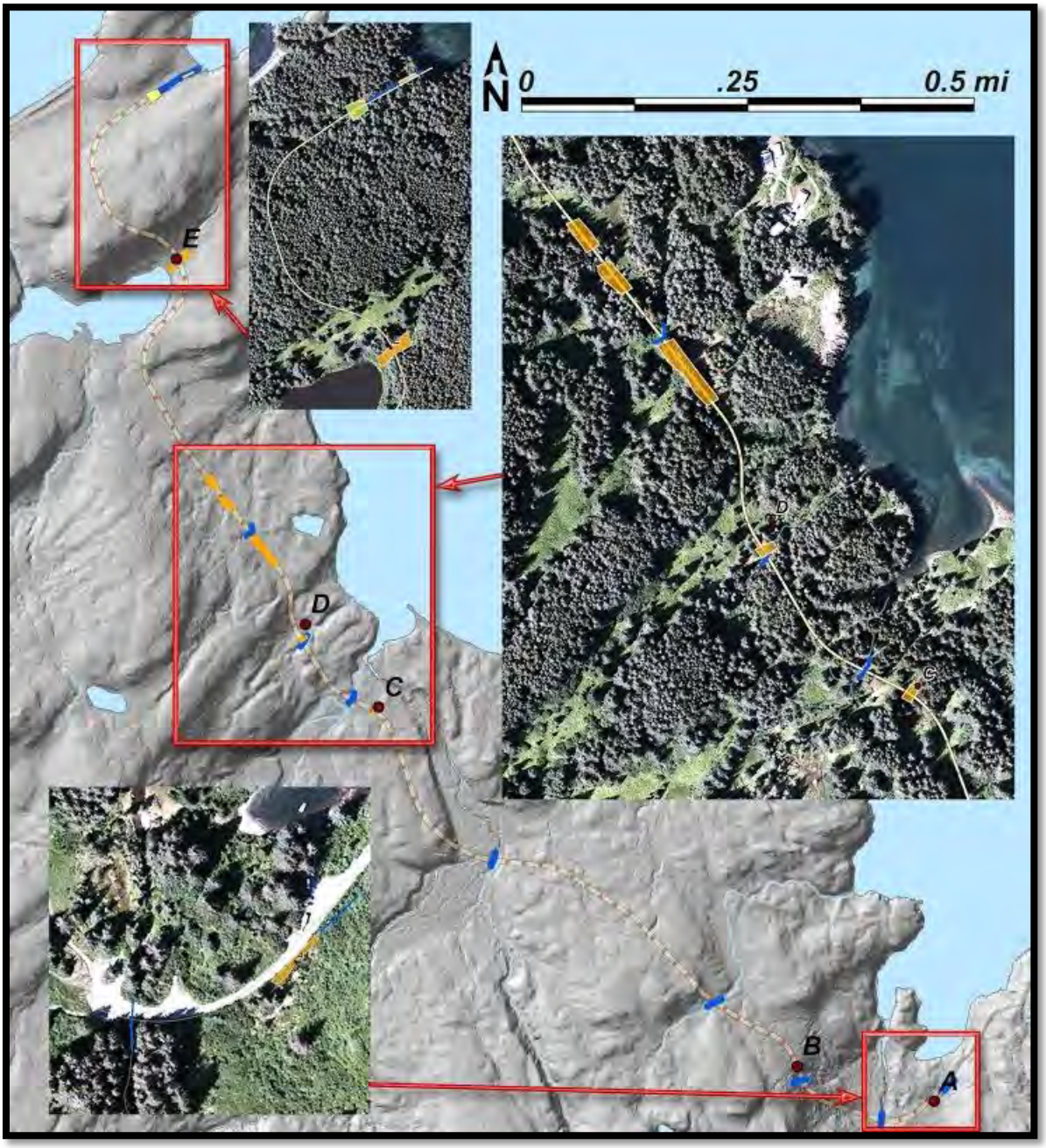


Figure 19 - Wetland Delineation Map

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Appendix A - Scanned Sample Site Data Sheets

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: **Anton Larson Bay Road Extension Wetland Delineation** Borough/City: **Kodiak** Sampling Date: 6/1/2016

Applicant/Owner: **Jill Taylor and Nina Horne - DOT&PF** Sampling Point: A

Investigator(s): **Koren Bosworth** Landform (hillside, terrace, hummocks, etc.): terrace / uplift beach

Local relief (concave, convex, none): none Slope (%): 0

Subregion: **Southcentral Alaska** Lat: _____ Long: _____ Datum: NAD83

Soil Map Unit Name: _____ NWI classification: PEMIC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation _____, Soil __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	(Yes)	No	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	(Yes)	No	
Wetland Hydrology Present?	(Yes)	No	

Remarks: Along the road where a ditch has been dug. Probably has dried out this wetland

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
Total Cover:			
50% of total cover:	20% of total cover:		

Herb Stratum			
1. Feru – Festca rubra	40	✓	F
2. Jual – Juncus alpina	10		OB
3. Calca – Calamagrostis can.	5		F
4. Carcan – Carex canescens	1		FW
5. Alsi – Alnus sinuata	1		F
6.			
7.			
8.			
9.			
10.			
Total Cover:	57		
50% of total cover: 28.5	20% of total cover: 11.4		

Plot size (radius, or length x width) 5' rad. % Bare Ground _____

% Cover of Wetland Bryophytes _____ Total Cover of Bryophytes _____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 3/3						peat/undecomposed moss	sat
3-5	2.5Y 6/4						OM w/ Sandy tephra	sat
5-7½	2.5Y 7/3						OM w/ sandy tephra	sat
7.5-13	25Y 6/2						sandy tephra	sat
13+	7.5YR 25/1						peat	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol or Histel (A1)
- ___ Histic Epipedon (A2)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change (TA4)[4]
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: **Anton Larson Bay Road Extension Wetland Delineation** Borough/City: **Kodiak** Sampling Date: 6/1 /2016

Applicant/Owner: **Jill Taylor and Nina Horne - DOT&PF** Sampling Point: B

Investigator(s): **Koren Bosworth** Landform (hillside, terrace, hummocks, etc.): hillside

Local relief (concave, convex, none): none Slope (%): 20%

Subregion: **Southcentral Alaska** Lat: _____ Long: _____ Datum: NAD83

Soil Map Unit Name: _____ NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation _____, Soil __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	(No)	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes	(No)	
Wetland Hydrology Present?	Yes	(No)	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Rusp - Rubus spectabilis	25	✓	FU
2. Chan - Chamaenerion angust.	15	✓	FU
3. Atfe - Athyrium felix-femina	10	✓	F
4. Drdi - Dryopteris dilatata	10	✓	FU
5. Frca - Fritillaria camschat	5		F
6. Alnus sinuata Alsi	5		F
Total Cover:	30		
50% of total cover: 15	20% of total cover: 6		

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	40		
50% of total cover: 20	20% of total cover: 8		

Plot size (radius, or length x width) 10x10 % Bare Ground _____

% Cover of Wetland Bryophytes _____ Total Cover of Bryophytes _____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	50	x 4 =	200
UPL species		x 5 =	
Column Totals:	70 (A)		260 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/1						peat	unsat
2-3	2.5Y 7/1					fine	sandy tephra	unsat
3-5½	10YR 7/3						sandy tephra	unsat.
5½+	7.5YR 5/6						coarser tephra	unsat

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol or Histel (A1)
- ___ Histic Epipedon (A2)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change (TA4)[4]
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): —

Water Table Present? Yes ____ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: **Anton Larson Bay Road Extension Wetland Delineation** Borough/City: **Kodiak** Sampling Date: 6/1 /2016

Applicant/Owner: **Jill Taylor and Nina Horne - DOT&PF** Sampling Point: C

Investigator(s): **Koren Bosworth** Landform (hillside, terrace, hummocks, etc.): sm. stream valley

Local relief (concave, convex, none): concave Slope (%): 4%

Subregion: **Southcentral Alaska** Lat: _____ Long: _____ Datum: **NAD83**

Soil Map Unit Name: _____ NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation _____, Soil __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	(Yes)	No	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	(Yes)	No	
Wetland Hydrology Present?	(Yes)	No	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
Total Cover:			
50% of total cover:	20% of total cover:		

Herb Stratum			
1. Angen - Angelica genuflexa	10	✓	FW
2. Carex sp	10	✓	OB
3. Eriophorum sp.	20	✓	OB
4. Sanguisorba canadensis	10	✓	FW
5.			
6.			
7.			
8.			
9.			
10.			
Total Cover:	50		
50% of total cover: 25	20% of total cover: 10		

Plot size (radius, or length x width) 15' radius % Bare Ground _____

% Cover of Wetland Bryophytes _____ Total Cover of Bryophytes _____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: Sphagnum base

SOIL

Sampling Point: C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4							peat	sat
4-6	2.5Y 7/1	80%	5YR 4/6			fine	tephra	sat
6+	2.5Y 7/1	80%	5YR 4/6			mod.	tephra	sat

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol or Histel (A1)
- ___ Histic Epipedon (A2)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change (TA4)[4]
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1-2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: **Anton Larson Bay Road Extension Wetland Delineation** Borough/City: **Kodiak** Sampling Date: 6/1 /2016

Applicant/Owner: **Jill Taylor and Nina Horne - DOT&PF** Sampling Point: D

Investigator(s): **Koren Bosworth** Landform (hillside, terrace, hummocks, etc.): small stream valley

Local relief (concave, convex, none): _____ Slope (%): 3

Subregion: **Southcentral Alaska** Lat: _____ Long: _____ Datum: **NAD83**

Soil Map Unit Name: _____ NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation _____, Soil __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes	No	
Wetland Hydrology Present?	Yes	No	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
Total Cover:			
50% of total cover:	20% of total cover:		

Herb Stratum			
1. Eriophorum sp	15	✓	FW
2. EQAR - Equisetum arvense	5	✓	F
3. SDCA - Sanguisorba canadn.	5	✓	FW
4. SWPE Swertia perennis	5	✓	FW
5. ANGEN - Angelica genuflex.	5	✓	FW
6.			
7.			
8.			
9.			
10.			
Total Cover:	35		
50% of total cover:	17.5	20% of total cover:	7

Plot size (radius, or length x width) 10' radius % Bare Ground _____

% Cover of Wetland Bryophytes _____ Total Cover of Bryophytes _____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1							moss	sat
1-3	7.5YR 2.5/3						peat	sat
3-12	2.5Y 7/3						tephra (gradoate fineness)	sat/WT
12+	10YR2/1						peat/muck	WT

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ✓ Histosol or Histel (A1)
- ___ Histic Epipedon (A2)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change (TA4)[4]
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 4

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: **Anton Larson Bay Road Extension Wetland Delineation** Borough/City: **Kodiak** Sampling Date: 6/1 /2016

Applicant/Owner: **Jill Taylor and Nina Horne - DOT&PF** Sampling Point: E

Investigator(s): **Koren Bosworth** Landform (hillside, terrace, hummocks, etc.): outlet to lake + old beaver pond

Local relief (concave, convex, none): concave Slope (%): 2

Subregion: **Southcentral Alaska** Lat: _____ Long: _____ Datum: NAD83

Soil Map Unit Name: _____ NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation _____, Soil __, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	(Yes)	No	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	(Yes)	No	
Wetland Hydrology Present?	(Yes)	No	

Remarks:

VEGETATION – Use scientific names of plants. List all species in the plot.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Pisi	5	✓	FU
2. Salix sp	5	✓	F
3.			
4.			
Total Cover: 10			
50% of total cover: 5	20% of total cover: 2		

Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
Total Cover:			
50% of total cover:	20% of total cover:		

Herb Stratum			
1. Caly - Carex lyngbyei	40	✓	OB
2. Cacan - Carex canescens	3		FW
3. Calcan - Calamagrostis canad.	25	✓	F
4. Alsin - Alnus sinuata	3		F
5. Eqfl - Equisetum fluviatile	2		OB
6.			
7.			
8.			
9.			
10.			
Total Cover: 73			
50% of total cover: 46.5	20% of total cover: 14.6		

Plot size (radius, or length x width) 10'x5' % Bare Ground _____

% Cover of Wetland Bryophytes _____ Total Cover of Bryophytes _____ (Where applicable)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/3						Peat	WT/Sat
3-7	2.5Y 6/4						OM+tephra	WT/Sat
7-10	2.5Y 7/3						tephra	WT/Sat
10+	10YR 2/1						peat	WT/Sat

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- X Histosol or Histel (A1)
- ___ Histic Epipedon (A2)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[3]:

- ___ Alaska Color Change (TA4)[4]
- ___ Alaska Alpine Swales (TA5)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present.

[4]Give details of color change in Remarks.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix B

Wetland Functional Assessment

Anton Larsen Bay Road Extension, Kodiak Island - Wetland Functional Assessment

for:

Alaska Dept. of Transportation and Public Facilities - Southcoast Region

6/30/2016

Bosworth Botanical Consulting
Koren Bosworth

A wetland delineation and functional assessment was carried out on the Anton Larsen Bay Rd. extension on June 1, 2016. The extension is approximately 2 miles and most of that length was found to be young, upland spruce forest and well-drained forb meadow. There were nine small potentially impacted wetland units totaling 36,266 sq. ft. of area. The nine units were located in four clusters along the route:

- SP-A - at the beginning of the route, at the end of the road (PEM1C - 1 unit) - 1,378 sq.ft.
- SP-C&D - 2/3rds of the way along the route (PEM1C - 5 units) - 24,691 sq.ft.
- SP-E - at the lake that is near the end of the route (PEM1C - 1 unit) - 4,429 sq. ft.
- SP-F - at the cove at the end of the route (PFO4 - 2 units) - 5,768 sq.ft.

Assessments were done at three of the four clusters: SP-A, SP-C&D and SP-F.

Figure 1 - SP-A

Figure 2 - SP-C&D

Figure 3 - SP-F

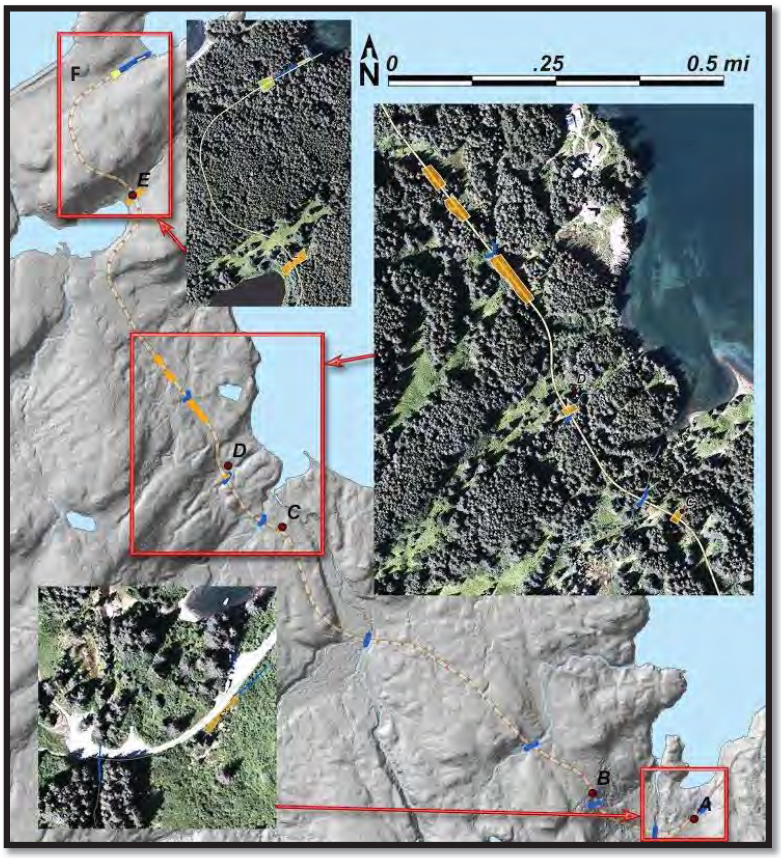

Figure 4 - Wetland delineation map

The wetland assessment method used was WESPAK-SE, developed by Dr. Paul Adamus. This method was adapted for use in SE Alaska but Dr. Adamus says that it, in general, will work for Kodiak Island. Some of the on-line resources made available for assessments in SE Alaska are not available for Kodiak Islands and a few of the questions that depend on those will not be answered.

The method works best if the assessment area encompasses the whole of the wetland unit it occurs in, but if required, a smaller unit can be assessed - though for less than an acre some of the functions will not be reflected completely. Because of the nature of this project the assessment areas are very small - less than a tenth of an acre for all but one of them.

Results

WESPAK-SE version 2 scores for this NON-tidal Wetland Assessment Area (AA): **Anton Larsen Bay Rd. SP - A**					FUNCTION				VALUE			
						Thresholds for Function Rating (normalized score)				*Thresholds for Value Rating (normalized score)*		
Specific Functions or Values:	Raw Function Score	Raw Value Score	**Function Score (normalized)**	**Value Score (normalized)**	Median of 119 SE Alaska wetlands	Low	High	**Function Rating**	Median of 119 SE Alaska wetlands	Low	High	**Value Rating**
Surface Water Storage (WS)	3.53	1.11	2.67	1.11	2.83	2.70	6.30	Low	3.06	1.85	5.56	Low
Stream Flow Support (SFS)	2.69	4.68	3.23	7.05	3.33	2.60	6.10	,"Moderate	2.31	3.24	5.42	High
Streamwater Cooling (WC)	2.25	2.65	2.25	3.49	4.00	3.36	5.87	Low	4.00	6.05	8.24	Low
Streamwater Warming (WW)	5.63	4.17	5.63	7.76	5.42	3.33	6.80	,"Moderate	3.20	0.00	5.15	High
Sediment & Toxicant Retention & Stabilization (SR)	3.73	2.76	2.01	5.93	2.71	3.10	5.83	Low	0.89	1.53	6.64	Moderate
Phosphorus Retention (PR)	4.26	4.38	1.41	6.34	3.58	3.06	6.32	Low	1.29	2.22	5.66	High
Nitrate Removal & Retention (NR)	4.30	5.42	1.24	6.08	2.07	2.01	4.40	Low	3.42	2.24	4.96	High
Carbon Sequestration (CS)	6.99		5.68		6.30	3.58	6.36	,"Moderate				
Organic Nutrient Export (OE)	5.65	20.00	8.17	10.00	7.16	6.75	8.01	High	7.12	5.46	7.68	High
Anadromous Fish Habitat (FA)	6.15	6.67	8.02	6.67	0.00	0.00	7.03	High	0.00	0.00	6.89	Moderate
Resident & Other Fish Habitat (FR)	6.08	4.91	8.41	4.91	0.00	0.00	7.75	High	0.00	0.00	5.13	Moderate

Aquatic Invertebrate Habitat (INV)	6.50	10.00	7.50	10.00		3.52	2.58	5.08	High	2.31	2.46	5.85	High
Amphibian Habitat (AM)	7.55	5.46	7.78	6.27		4.78	3.71	6.78	High	4.72	2.58	5.16	High
Waterbird Feeding Habitat (WBF)	4.91	0.00	6.77	0.00		4.54	0.00	6.09	High	0.00	0.00	5.69	Low
Waterbird Nesting Habitat (WBN)	0.00	0.00	0.00	0.00		3.75	0.00	5.91	Low	0.00	0.00	6.90	Low
Songbird, Raptor, & Mammal Habitat (SBM)	6.01	4.75	7.41	4.75		8.01	7.19	8.80	,"Moderate	4.44	2.65	5.78	Moderate
Pollinator Habitat (POL)	1.44	3.50	1.34	4.69		4.74	3.60	5.88	Low	4.16	2.81	5.83	Moderate
Native Plant Habitat (PH)	4.27	4.67	1.74	2.91		5.22	3.65	6.17	Low	3.41	2.12	4.66	Moderate
Public Use & Recognition (PU)		2.57		3.22						3.00	2.52	5.69	Moderate
Subsistence & Provisioning Services (Subsis)		5.56		5.56						5.00	5.17	7.22	Moderate
Wetland Sensitivity (Sens)		3.56		3.59						5.91	5.03	7.46	Low
Wetland Ecological Condition (EC)		1.72		1.81						4.15	2.79	5.08	Low
Stress Potential (STR) (higher score means more)		4.40		6.18						6.43	3.31	5.73	High
Summary Scores for Groups:													
HYDROLOGIC GROUP (max of WS, SFS, WC, WW)	5.63	4.68	3.51	4.20		4.65	4.01	7.52	Low	3.30	1.94	4.95	Moderate
WATER QUALITY GROUP (max of SR, PR, NR)	4.30	5.42	0.71	5.97		3.05	3.26	7.12	Low	3.51	2.04	5.17	High
CARBON GROUP (max of CS, OE)	6.99		5.11			5.82	4.10	6.63	,"Moderate	7.12	5.46	7.68	
FISH GROUP (max of FA, FR)	6.15	6.67	8.02	6.67		0.00	0.00	7.15	High	0.00	0.00	7.25	Moderate
AQUATIC SUPPORT (max of INV, AM, WBF, WBN)	7.55	10.00	7.65	10.00		4.63	3.36	6.71	High	4.90	2.63	6.10	High
TERRESTRIAL SUPPORT (max of SBM, POL, PH)	6.01	4.75	5.23	3.00		6.32	4.81	7.78	,"Moderate	3.74	3.89	6.47	Low
SOCIAL GROUP (max of PU, Subsis)		5.56		4.68						4.01	2.68	6.01	Moderate
WETLAND CONDITION (same as EC)		1.72		0.00						4.15	2.79	5.08	Low
WETLAND RISK (average of Sens & STR)		3.98		5.59						5.64	3.73	6.33	Moderate

WESPAK-SE version 2 scores for this NON-tidal Wetland Assessment Area (AA):

Anton Larsen Bay Rd SP - C&D

Specific Functions or Values:	Raw Function Score	Raw Value Score	Function Score (normalized)	Value Score (normalized)	FUNCTION: Median of 119 SE Alaska wetlands	FUNCTION: Thresholds for Function Rating (normalized score) Low	FUNCTION: Thresholds for Function Rating (normalized score) High	FUNCTION: Function Rating	VALUE: Median of 119 SE Alaska wetlands	VALUE: Thresholds for Value Rating (normalized score) Low	VALUE: Thresholds for Value Rating (normalized score) High	VALUE: Value Rating
Surface Water Storage (WS)	0.16	0.00	0.00	0.00	2.83	2.70	6.30	Low	3.06	1.85	5.56	Low
Stream Flow Support (SFS)	0.00	0.00	0.00	0.00	3.33	2.60	6.10	Low	2.31	3.24	5.42	Low
Streamwater Cooling (WC)	0.00	0.00	0.00	0.00	4.00	3.36	5.87	Low	4.00	6.05	8.24	Low
Streamwater Warming (WW)	0.00	0.00	0.00	0.00	5.42	3.33	6.80	Low	3.20	0.00	5.15	Low
Sediment & Toxicant Retention & Stabilization (SR)	1.03	0.19	0.00	0.04	2.71	3.10	5.83	Low	0.89	1.53	6.64	Low
Phosphorus Retention (PR)	0.98	0.00	0.00	0.00	3.58	3.06	6.32	Low	1.29	2.22	5.66	Low
Nitrate Removal & Retention (NR)	0.59	0.00	0.00	0.00	2.07	2.01	4.40	Low	3.42	2.24	4.96	Low
Carbon Sequestration (CS)	1.68		0.00		6.30	3.58	6.36	Low				
Organic Nutrient Export (OE)	2.04	20.00	2.94	10.00	7.16	6.75	8.01	Low	7.12	5.46	7.68	High
Anadromous Fish Habitat (FA)	0.00	0.00	0.00	0.00	0.00	0.00	7.03	Low	0.00	0.00	6.89	Moderate
Resident & Other Fish Habitat (FR)	0.00	0.00	0.00	0.00	0.00	0.00	7.75	Low	0.00	0.00	5.13	Low
Aquatic Invertebrate Habitat (INV)	1.33	10.00	0.00	10.00	3.52	2.58	5.08	Low	2.31	2.46	5.85	High
Amphibian Habitat (AM)	3.55	5.42	0.53	6.20	4.78	3.71	6.78	Low	4.72	2.58	5.16	High
Waterbird Feeding Habitat (WBF)	1.26	0.00	1.73	0.00	4.54	0.00	6.09	,"Moderate	0.00	0.00	5.69	Low
Waterbird Nesting Habitat (WBN)	0.00	0.00	0.00	0.00	3.75	0.00	5.91	Low	0.00	0.00	6.90	Low
Songbird, Raptor, & Mammal Habitat (SBM)	0.92	0.00	1.14	0.00	8.01	7.19	8.80	Low	4.44	2.65	5.78	Low
Pollinator Habitat (POL)	1.67	4.50	1.70	6.03	4.74	3.60	5.88	Low	4.16	2.81	5.83	High
Native Plant Habitat (PH)	1.30	6.00	0.00	4.70	5.22	3.65	6.17	Low	3.41	2.12	4.66	High

Public Use & Recognition (PU)		0.75		0.00						3.00	2.52	5.69	Low
Subsistence & Provisioning Services (Subsis)		5.56		5.56						5.00	5.17	7.22	Moderate
Wetland Sensitivity (Sens)		1.92		0.00						5.91	5.03	7.46	Low
Wetland Ecological Condition (EC)		1.17		1.23						4.15	2.79	5.08	Low
Stress Potential (STR) (higher score means more)		0.00		0.00						6.43	3.31	5.73	Low
Summary Scores for Groups:													
HYDROLOGIC GROUP (max of WS, SFS, WC, WW)	0.16	0.00	0.00	0.00		4.65	4.01	7.52	Low	3.30	1.94	4.95	Low
WATER QUALITY GROUP (max of SR, PR, NR)	1.03	0.19	0.00	0.00		3.05	3.26	7.12	Low	3.51	2.04	5.17	Low
CARBON GROUP (max of CS, OE)	2.04		0.00			5.82	4.10	6.63	Low	7.12	5.46	7.68	
FISH GROUP (max of FA, FR)	0.00	0.00	0.00	0.00		0.00	0.00	7.15	Low	0.00	0.00	7.25	Low
AQUATIC SUPPORT (max of INV, AM, WBF, WBN)	3.55	10.00	0.00	10.00		4.63	3.36	6.71	Low	4.90	2.63	6.10	High
TERRESTRIAL SUPPORT (max of SBM, POL, PH)	1.67	6.00	0.00	4.67		6.32	4.81	7.78	Low	3.74	3.89	6.47	Moderate
SOCIAL GROUP (max of PU, Subsis)		5.56		4.68						4.01	2.68	6.01	Moderate
WETLAND CONDITION (same as EC)		1.17		0.00						4.15	2.79	5.08	Low
WETLAND RISK (average of Sens & STR)		0.96		0.00						5.64	3.73	6.33	Low

WESPAK-SE version 2 scores for this NON-tidal Wetland Assessment Area (AA):
Anton Larsen Bay Rd. SP- F

Specific Functions or Values:	Raw Function Score	Raw Value Score	Function Score (normalized)	Value Score (normalized)	FUNCTION: Median of 119 SE Alaska wetlands	FUNCTION: Thresholds for Function Rating (normalized score) Low	FUNCTION: Thresholds for Function Rating (normalized score) High	Function Rating	VALUE: Median of 119 SE Alaska wetlands	VALUE: Thresholds for Value Rating (normalized score) Low	VALUE: Thresholds for Value Rating (normalized score) High	Value Rating
Surface Water Storage (WS)	2.60	1.11	1.60	1.11	2.83	2.70	6.30	Low	3.06	1.85	5.56	Low
Stream Flow Support (SFS)	4.81	2.05	5.77	3.09	3.33	2.60	6.10	,"Moderate	2.31	3.24	5.42	Low
Streamwater Cooling (WC)	4.08	3.13	4.08	4.12	4.00	3.36	5.87	,"Moderate	4.00	6.05	8.24	Low
Streamwater Warming (WW)	4.17	5.45	4.17	10.00	5.42	3.33	6.80	,"Moderate	3.20	0.00	5.15	High
Sediment & Toxicant Retention & Stabilization (SR)	2.96	2.13	1.05	4.50	2.71	3.10	5.83	Low	0.89	1.53	6.64	Moderate
Phosphorus Retention (PR)	4.96	2.94	2.46	4.03	3.58	3.06	6.32	Low	1.29	2.22	5.66	Moderate
Nitrate Removal & Retention (NR)	3.87	2.92	0.58	3.04	2.07	2.01	4.40	Low	3.42	2.24	4.96	Moderate
Carbon Sequestration (CS)	7.33		6.34		6.30	3.58	6.36	,"Moderate				
Organic Nutrient Export (OE)	5.12	6.67	7.39	6.71	7.16	6.75	8.01	,"Moderate	7.12	5.46	7.68	Moderate
Anadromous Fish Habitat (FA)	0.00	0.00	0.00	0.00	0.00	0.00	7.03	Low	0.00	0.00	6.89	Moderate
Resident & Other Fish Habitat (FR)	4.58	0.00	6.34	0.00	0.00	0.00	7.75	,"Moderate	0.00	0.00	5.13	Low
Aquatic Invertebrate Habitat (INV)	3.62	3.10	1.66	1.72	3.52	2.58	5.08	Low	2.31	2.46	5.85	Low
Amphibian Habitat (AM)	5.66	3.12	4.36	2.01	4.78	3.71	6.78	,"Moderate	4.72	2.58	5.16	Low
Waterbird Feeding Habitat (WBF)	0.00	0.00	0.00	0.00	4.54	0.00	6.09	Low	0.00	0.00	5.69	Low
Waterbird Nesting Habitat (WBN)	2.12	0.00	3.07	0.00	3.75	0.00	5.91	,"Moderate	0.00	0.00	6.90	Low
Songbird, Raptor, & Mammal Habitat (SBM)	6.24	2.50	7.71	2.50	8.01	7.19	8.80	,"Moderate	4.44	2.65	5.78	Low
Pollinator Habitat (POL)	2.87	0.00	3.64	0.00	4.74	3.60	5.88	,"Moderate	4.16	2.81	5.83	Low
Native Plant Habitat (PH)	4.33	5.26	1.92	3.70	5.22	3.65	6.17	Low	3.41	2.12	4.66	Moderate

Public Use & Recognition (PU)		1.88		1.97						3.00	2.52	5.69	Low
Subsistence & Provisioning Services (Subsis)		6.67		6.67						5.00	5.17	7.22	Moderate
Wetland Sensitivity (Sens)		3.02		1.74						5.91	5.03	7.46	Low
Wetland Ecological Condition (EC)		5.33		5.61						4.15	2.79	5.08	High
Stress Potential (STR) (higher score means more)		2.31		1.47						6.43	3.31	5.73	Low
Summary Scores for Groups:													
HYDROLOGIC GROUP (max of WS, SFS, WC, WW)	4.81	5.45	2.28	5.04		4.65	4.01	7.52	Low	3.30	1.94	4.95	High
WATER QUALITY GROUP (max of SR, PR, NR)	4.96	2.94	1.79	2.89		3.05	3.26	7.12	Low	3.51	2.04	5.17	Moderate
CARBON GROUP (max of CS, OE)	7.33		5.86			5.82	4.10	6.63	,"Moderate	7.12	5.46	7.68	
FISH GROUP (max of FA, FR)	4.58	0.00	5.97	0.00		0.00	0.00	7.15	,"Moderate	0.00	0.00	7.25	Low
AQUATIC SUPPORT (max of INV, AM, WBF, WBN)	5.66	3.12	4.04	1.34		4.63	3.36	6.71	,"Moderate	4.90	2.63	6.10	Low
TERRESTRIAL SUPPORT (max of SBM, POL, PH)	6.24	5.26	5.76	3.68		6.32	4.81	7.78	,"Moderate	3.74	3.89	6.47	Low
SOCIAL GROUP (max of PU, Subsis)		6.67		6.01						4.01	2.68	6.01	Moderate
WETLAND CONDITION (same as EC)		5.33		9.72						4.15	2.79	5.08	High
WETLAND RISK (average of Sens & STR)		2.66		0.37						5.64	3.73	6.33	Low

Appendix: Limitations of WESPAK-SE (from *Manual for WESPAK-SE* , March 2015):

WESPAK-SE is not intended to answer all questions about wetlands. Users should understand the following important limitations:

1. WESPAK-SE does not change any current procedures for determining wetland jurisdictional status, delineating wetland boundaries, or requirements for monitoring wetland projects.

2. The intended users are wetland specialists for government agencies, natural resource organizations, and consulting companies, who are skilled in conducting jurisdictional delineations of wetlands. Users should be able to (a) recognize most common wetland plants, (b) determine soil texture, (c) understand wetland hydrology, (d) delineate wetland contributing area (catchment) boundaries from a topographic map, (e) access and acquire information from the internet, and (f) enter data in Microsoft Excel® (1997 or later version). For field application of WESPAK-SE, a multidisciplinary team is encouraged but not required. Training in the use of WESPAK-SE also is encouraged but not required.

Some of the requested information may not be accurately determinable during a single visit to a wetland, particularly if that visit occurs outside the growing season. Some wetland conditions vary dramatically from year to year and within a growing season. Thus, the accuracy of results will be greater if users are familiar with the changes in wetland conditions that typically occur locally, or consult landowners or others who know that.

3. For the portion of WESPAK-SE which incorporates existing digital data, it is understood that those data were originally created at scales much coarser than represented by the region's typically small wetlands. Consequently, when those data are interpolated to the scale of an individual wetland, some of the data are likely to be inaccurate. Also, some of the conditions described by the spatial data, such as for land cover, may have changed since the layer was created years ago. Nonetheless, it was decided that the advantages of judiciously using the existing spatial data, as just one component of each wetland's WESPAK-SE scores, outweighed the disadvantages.

4. The numeric estimates WESPAK-SE provides of wetland functions, values, and other attributes are not actual measures of those attributes, nor are the data combined using mechanistic models of ecosystem processes. Rather, WESPAK-SE scores are estimates of those attributes arrived at by using standardized criteria (models). The models systematically combine well-accepted indicators in a logically sophisticated manner that attempts to recognize context-specific, functionally contingent relationships among indicators. As is true of all other rapid assessment methods, WESPAK-SE's scoring models have not been validated in the sense of comparing their outputs with those from long-term direct measurement of wetland processes. That is the case because the time and cost of making the measurements necessary to fully determine model accuracy would be exorbitant. Nonetheless, the lack of validation is not, by itself, sufficient reason to avoid use of any standardized rapid method, because the only practical alternative—relying entirely on non-systematic judgments (best professional judgment)—is not demonstrably better in many cases. When properly applied, WESPAK-SE's scoring models and their indicators are believed to adequately describe the relative effectiveness of a wetland for performing particular functions.

5. WESPAK-SE may be used to augment the interpretations of a subject professional (e.g., a fisheries biologist, plant ecologist, ornithologist, hydrologist, biogeochemist) when such expertise is available. WESPAK-SE outputs, like those of other rapid methods, are not necessarily more accurate than judgments of a subject expert, partly because WESPAK-SE's spreadsheet models lack the intuitiveness and integrative skills of an actual person

knowledgeable of a particular function. Also, a model cannot anticipate every situation that may occur in nature. WESPAK-SE outputs should always be screened by the user to see if they "make sense." Nonetheless, WESPAK-SE's scoring models provide a degree of standardization, balance, and comprehensiveness that seldom is obtainable from a single expert.

6. WESPAK-SE's logic-based process for combining indicators has attempted to reflect currently-understood paradigms of wetland hydrology, biogeochemistry, and ecology. Still, the scientific understanding of wetlands is far less than optimal to support, as confidently as some might desire, the models WESPAK-SE and other rapid methods use to score wetland attributes. To provide transparency about this uncertainty, in the Rationales column of the WESPAK-SE worksheets for individual functions, some of the more significant alternative or confounding interpretations are noted for indicators used in that function's scoring model.

7. WESPAK-SE does not assess all functions, values, and services that a wetland might support. In particular, WESPAK-SE does not assess the suitability of a wetland as habitat for any individual wildlife or plant species. The 18 functions and 21 other attributes that WESPAK-SE assesses are those most commonly ascribed to wetlands.

8. If two wetlands have similar effectiveness scores for a function and its value, the larger wetland is usually more likely to provide a greater total level of the associated ecosystem service. However, the relationship between wetland size and the total level of a service delivered is not necessarily linear. For example, if its characteristics make a particular wetland ineffective for storing or purifying water, or for supporting particular plants and animals, then simply increasing its size by adding more wetland having the same characteristics will usually not increase the total amount of water stored or purified, or plants and animals supported. The threshold below which a wetland's characteristics make it completely ineffective is unknown in many cases. Where scientific evidence has suggested that wetland size may benefit a function in a greater-than-linear manner, WESPAK-SE has included wetland size as an indicator for that function. Those functions are Waterbird Feeding, Waterbird Nesting, Songbirds- Mammals, and Pollinators.

9. In some wetlands, the scores that WESPAK-SE's models generate may not be sufficiently sensitive to detect, in the short term, mild changes in some functions. For example, WESPAK-SE is not intended to measure small year-to-year changes in a slowly-recovering restored wetland, or minor changes in specific functions, as potentially associated with limited "enhancement" activities such as weed control. Nonetheless, in such situations, WESPAK-SE can use information about a project to predict the likely direction of the change for a wide array of functions. Quantifying the actual change will often require more intensive (not rapid) measurement protocols that are complementary.

10. WESPAK-SE outputs are not intended to address the important question, "Is a proposed or previous wetland creation or enhancement project in a geomorphically appropriate location?" That is, is the wetland in a location where key processes can be expected to adaptively sustain the wetland and the particular functions which those of its type usually support, e.g., its "site potential?" Although WESPAK-SE uses many landscape-scale indicators to estimate functions and values of a wetland, WESPAK-SE is less practical for identifying the relative influence of multiple processes that operate at a landscape scale to support a single wetland.

11. Science is constantly evolving as new studies refine, refute, or support what currently is known. It is incumbent that planning tools keep pace with new findings and their models be revised at regular intervals, perhaps every 5-10 years, to reflect that. This may pose challenges to wetland regulatory programs if necessary revisions to a method such as WESPAK-SE create a "moving target".

Appendix C

Fish Stream Survey Report

MEMORANDUM

State of Alaska

Department of Fish and Game
Division of Habitat

TO: Michael Daigneault
Central Region
Regional Supervisor

DATE: October 22, 2015

PHONE NO: 267-2813

FROM: Will Frost WF
Habitat Biologist

SUBJECT: Anton Larsen Bay Road Stream Surveys 2015

On August 13, 2015 I joined Katrina Del Carmen Alaska Department of Fish and Game (ADF&G), on September 9, 2015 I joined Lisa Fox ADF&G, and on October 12, 2015 I joined Janel Day, Kodiak Island Borough on Kodiak Island for the purpose of sampling waters located on the proposed Alaska Department of Transportation and Public Facilities' (ADOT&PF) Anton Larsen Bay Road (ALBR) extension. The ADOT&PF is proposing to extend ALBR from the end of the existing road near Small Creek (Stream No. 252-38-10070) and construct a new road about two miles long to Crag Point (Figure 1). The purpose of the road is to provide an additional boat launch in the ice free waters near Crag Point.

The information gathered during the sampling efforts will be used to assist the ADOT&PF in determining what stream crossings will require a Fish Habitat Permit from the ADF&G. New streams that support anadromous fish will be submitted for official nominations for inclusion in the Anadromous Waters Catalog and its companion Atlas. The weather on August 13 was clear and warm, the weather on September 9 was cloudy and cool. The water levels in the streams during the first two surveys were low because of unseasonably dry weather. The weather on October 12 was clear and cool. Recent rain had brought the stream levels up.

On the morning of August 13, Ms. Del Carmen and I drove to the end of the ALBR and hiked about 0.25 miles to a stream locally known as "Chalet Creek." We used an electrofisher to sample the stream in the area of the existing ATV trail bridge (Figures 2 through 4). We captured about 20 juvenile coho salmon (Figure 5). We also captured Dolly Varden and Sculpin (Figures 6 and 7). We walked downstream to tidewater and used a Garmin GPS to map the correct location of the stream. The existing topographic maps with the stream location are incorrect. Chalet Creek will be nominated to the Anadromous Waters Catalog. A fish habitat permit will be required for the stream crossing.

We left the electrofisher at the stream and walked the about 0.5 miles to the home of Duane and Petrina Peterson. The Petersons showed us a small 4-foot wide stream that flows across their property into Anton Larsen Bay. The stream is at Section 34, Township 26 South, Range 21 West, Seward Meridian (57.872 N, -152.671 W). The stream may cross the proposed road right-of-way (ROW) upstream of the Peterson's property.

We walked about 0.2 miles to a large beaver pond at Section 34, Township 26 South, Range 21 West, Seward Meridian (57.874 N, -152.675 W) (Figure 8). We walked the outlet stream about 0.1 miles to Anton Larsen Bay. The majority of the stream reach was dry (Figure 9). No defined stream channel was present at the bay. The proposed road may cross the dry stream. No fish habitat permit will be required for the stream crossing.

On the morning of September 9, Ms. Fox and I walked to the home of Duane and Petrina Peterson. We sampled a small stream that flows near the proposed ROW through the Peterson property and into Anton Larsen Bay (Figure 10). We sampled from tidewater 550 feet upstream and ended our survey in a meadow. No fish were captured or observed. No fish habitat permit will be required for the stream crossing.

We walked to an unnamed tributary to Chalet Creek (Figure 11). We sampled about 450 feet upstream from the confluence with Chalet Creek and captured 4 juvenile coho salmon (Figure 12). About 75 adult pink salmon were observed spawning in the lower reach of Chalet Creek and 10 pink salmon were observed spawning in the lower reach of the unnamed tributary (Figure 13). The unnamed tributary to Chalet Creek will be nominated to the Anadromous Waters Catalog. A fish habitat permit will be required for the stream crossing.

We observed about 900 adult pink salmon spawning above two perched culverts located in Small Creek (Figure 14). The culverts are likely a barrier to juvenile fish. Small Creek is located in the proposed project area. The ADF&G recommends the culverts be removed and replaced with a structure designed for fish passage. A fish habitat permit will be required for the stream crossing.

On the morning of October 12, Ms. Day and I walked to Chalet Creek. We located an unnamed tributary stream that flows into Chalet Creek directly above the ATV bridge that crosses Chalet Creek (Figure 15). We set 1 baited minnow trap in the creek about 250 feet above the confluence with Chalet Creek. The trap soaked about two hours. The trap captured 10 juvenile coho salmon. We observed an additional 2 juvenile coho salmon about 700 feet above the confluence with Chalet Creek. The unnamed tributary to Chalet Creek will be nominated to the Anadromous Waters Catalog.

We walked about 850 feet upstream of the ATV bridge and set two baited minnow traps in Chalet Creek. The traps soaked about one hour. The traps captured 2 juvenile coho salmon. We walked an additional 550 feet upstream and located an 8-foot high barrier (Figure 16). Two adult coho salmon were observed below the barrier. The adult coho salmon will be nominated for update to the Anadromous Waters Catalog.

We walked to an unnamed stream located at Section 3, Township 27 South, Range 21 West, Seward Meridian (57.864 N, -152.659 W) (Figure 17). We walked downstream about 800 feet to tidewater. We set one minnow trap in the stream. The trap soaked about 1 hour. About 15 Dolly Varden were observed outside the minnow trap. A fish habitat permit will be required for the stream crossing.

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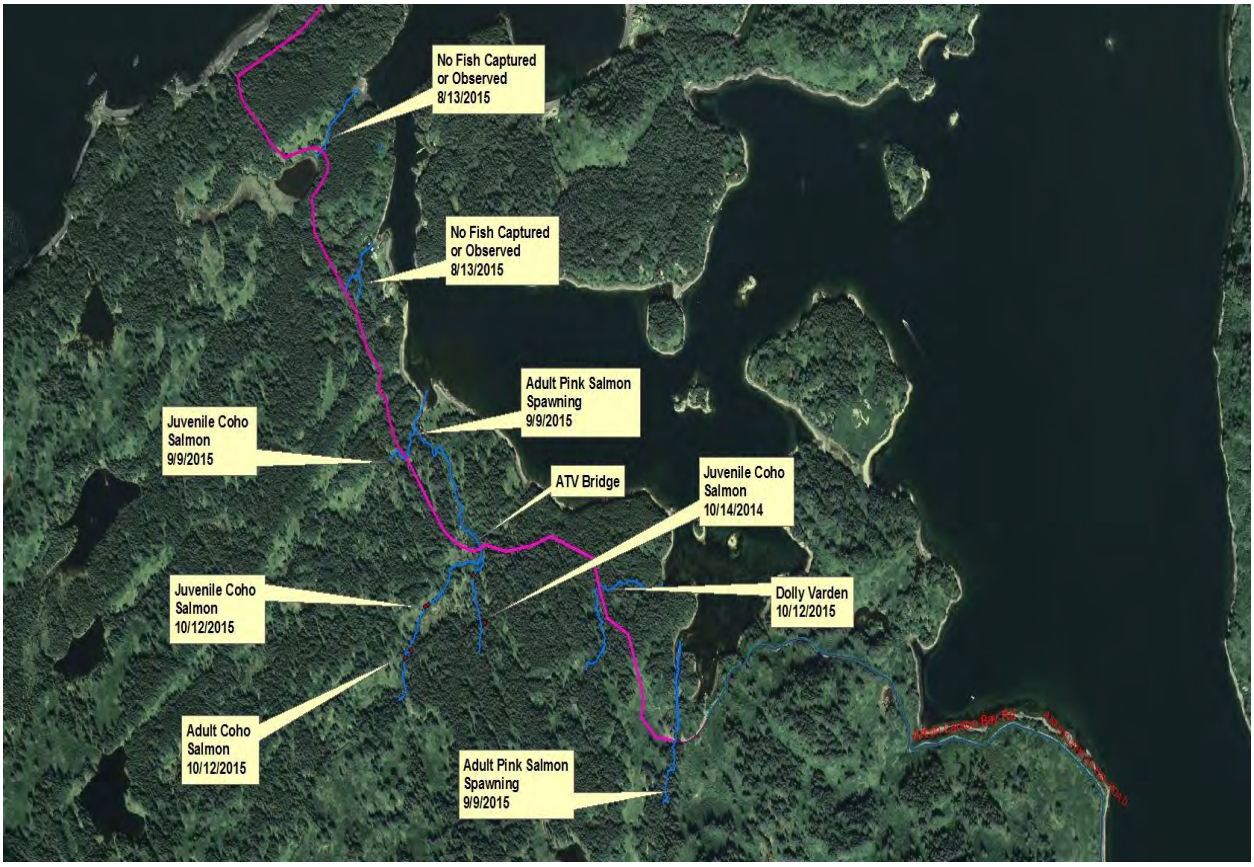

Figure 1. Location of surveyed streams.

Figure 2. Chalet Creek at the existing ATV bridge. View looking upstream.

Figure 3. Chalet Creek at the existing ATV bridge. View looking downstream.

Figure 4. Ms. Del Carmen sampling Chalet Creek.

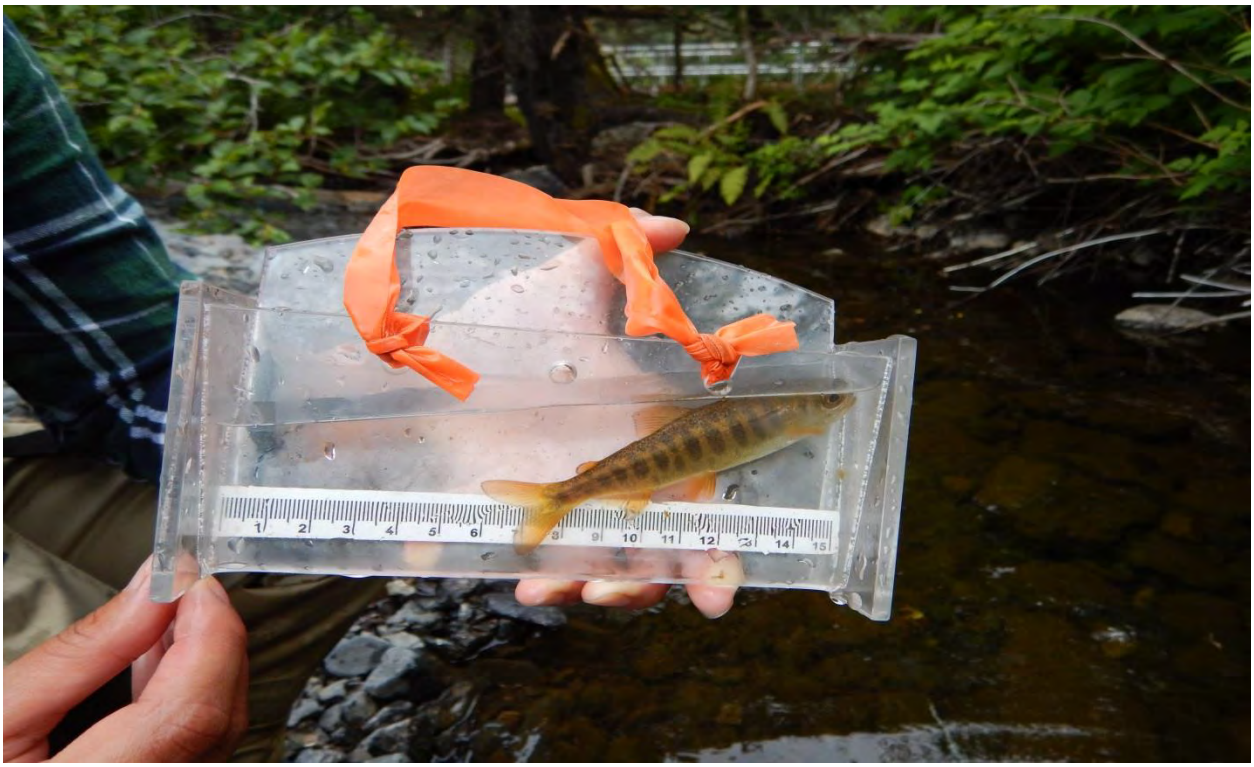

Figure 5. Juvenile coho salmon captured in Chalet Creek.

Figure 6. Dolly Varden captured in Chalet Creek.

Figure 7. Sculpin captured in Chalet Creek.

Figure 8. Unnamed beaver pond near the end of the project.

Figure 9. Outlet stream of beaver pond near the end of the project.

Figure 10. Ms. Fox standing adjacent to the unnamed stream located on the Peterson property.

Figure 11. Unnamed tributary of Chalet Creek. View looking upstream.

Figure 12. Juvenile coho salmon captured in Chalet Creek tributary.

Figure 13. Adult pink salmon spawning in the lower reach of Chalet Creek.

Figure 14. Adult pink salmon spawning above the culverts located in Small Creek.

Figure 15. Unnamed tributary to Chalet Creek. View looking upstream.

Figure 16. Ms. Day walking around the 8-foot high barrier in Chalet Creek.

Figure 17. Unnamed stream flowing to ALB. Dolly Varden were present in the stream. View looking upstream.

Appendix D

Biological Assessment

BIOLOGICAL ASSESSMENT

Anton Larsen Bay Road Extension and Boat Ramp

July 2019

Biological Assessment

Anton Larsen Bay Road Extension and Boat Ramp

Kodiak Island, Alaska

Prepared for:

Federal Highway Administration
Western Federal Lands Highway Division
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July 2019

Biological Assessment

Anton Larsen Bay Road Extension and Boat Ramp

Kodiak Island, Alaska

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July 2019

Executive Summary

The Western Federal Lands Highway Division of the Federal Highway Administration, in partnership with the Native Village of Ouzinkie plans an extension of Anton Larsen Bay Road on Kodiak Island, Alaska.

Anton Larsen Bay Road extends from the City of Kodiak to the northwest for approximately 11 miles before ending approximately 1.8 miles from the Kodiak Island coast near mid-bay portions of Anton Larsen Bay. The road extension project proposes to extend the road over a 1.8 mile reach terminating at a protected cove near Crag Point on the outermost portion of the bay. The proposed road will cross several streams, two of which are salmon-bearing; new culverts or bridges will span all streams. A boat launch, pile supported float, and parking facility are also proposed at the road terminus. The road is expected to serve the outlying communities associated with Port Lions, Ouzinkie, and Larson Island, particularly during the winter, when the existing boat launch within Anton Larsen Bay is iced over.

Potential effects to ESA-listed marine mammals, a seabird, and their designated critical habitat include pile driving effects from underwater noise, nearshore habitat alteration from boat launch and float construction, and disturbances during periods of nearshore construction and post-construction operations of the new boat launch. Potential effects to Essential Fish Habitat at the stream crossings may also occur.

A summary of the status and effects determinations for listed species that may occur in the project area is provided in **Table S-1**.

Table S-1. Listed Species Potentially Occurring in the Action Area

Common Name	Scientific Name	Federal Status	Effects Determination[1]
Northern Sea Otter	*Enhydra lutris kenyoni*	Threatened	NLAA
Critical Habitat		Designated	NLAA
Steller Sea Lion	*Eumetopias jubatus*	Endangered	NLAA
Critical Habitat		Designated	NE
Short-tailed Albatross	*Phoebastria albatrus*	Endangered	NE
Critical Habitat		Not Designated	--
Humpback Whale	*Megaptera novaeangliae*	Threatened (Mexico DPS)	NLAA
Critical habitat		Not Designated	--
Fin Whale	*Balaenoptera physalus*	Endngered	NLAA
Critical habitat		Not Designated	--
North Pacific Right Whale	*Eubalaena japonica*	Endangered	NLAA
Critical habitat		Designated	NE
Essential Fish Habitat			No Adverse Effect

[1] NLAA = Not Likely to Adversely Affect; NE = No Effect,

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ADF&G	Alaska Department of Fish and Game
ADOT&PF	Alaska Department of Transportation and Public Facilities
ARBO II	Aquatic Restoration Biological Opinion II
ATV	All-terrain vehicle
BA	Biological Assessment
BMP	Best Management Practice
dB	decibel
dBA	A-weighted decibel
DCH	Designated Critical Habitat
DEA	David Evans and Associates, Inc.
DFO	Department of Fisheries and Oceans, Canada
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
FHWA	Federal Highway Administration
FMP	Fishery Management Plan
GOA	Gulf of Alaska
IPaC	Information Planning and Conservation System
JYL	Jensen Yorba Lott
MHHW	Mean Higher High Water
MHW	Mean High Water
MLLW	Mean Lower Low Water
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
NTU	Nephelometric Turbidity Units
OHWM	ordinary high water mark
PCE	primary constituent element
PTS	Permanent Threshold Shifts
rms	Root Mean Square
SEL	Sound Exposure Level
SPCC	Spill Prevention, Control, and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
TTS	Temporary Threshold Loss
USFWS	U.S. Fish and Wildlife Service
WFLHD	Western Federal Lands Highway Division

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1.0 INTRODUCTION

The Western Federal Lands Highway Division (WFLHD) of the Federal Highway Administration (FHWA), in partnership with the Native Village of Ouzinkie plans an extension of Anton Larsen Bay Road on Kodiak Island, Alaska.

Anton Larsen Bay Road extends from the City of Kodiak to the northwest for approximately 11 miles before ending near mid portions of Anton Larsen Bay. The road extension project proposes to extend the road over an additional 1.8 miles, terminating at a protected cove near Crag Point on the outermost portion of the bay (**Figure 1**). A boat launch, float, and parking facility are also proposed at the road terminus (**Figure 2**). The road extension is expected to serve the outlying communities of Port Lions, Ouzinkie, and Larson Island, particularly during the winter when the existing boat launch in middle reaches of Anton Larsen Bay is iced over (ADOT&PF 2015).

The legal location for the project is Sections 33 and 34 of Township 26S, Range 21W, and Sections 3 and 4 of Township 27S, Range 21W (ADOT&PF 2015).

This Biological Assessment (BA) examines potential project impacts on federally threatened and endangered species listed under Section 7 of the Endangered Species Act (ESA). This BA evaluates potential impacts based on existing information about current habitat conditions and suitability for providing the life history requirements of these species.

Section 7 of the ESA of 1973 (as amended) requires federal agencies, in this case the WFLHD, to consult with the National Marine Fisheries Service (NMFS) and/or the U.S. Fish and Wildlife Service (USFWS) if they determine that any actions they authorize, fund, and/or conduct may affect any federally proposed or listed species, or result in destruction or adverse modification of their critical habitat. An analysis of project effects to Essential Fish Habitat (EFH), as regulated under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), is also included in this BA.

This BA identifies the potential project impacts to federally listed species and their critical habitats, lists the conservation measures to mitigate those impacts, and makes a determination of effect for each species

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Figure 1. Vicinity Map

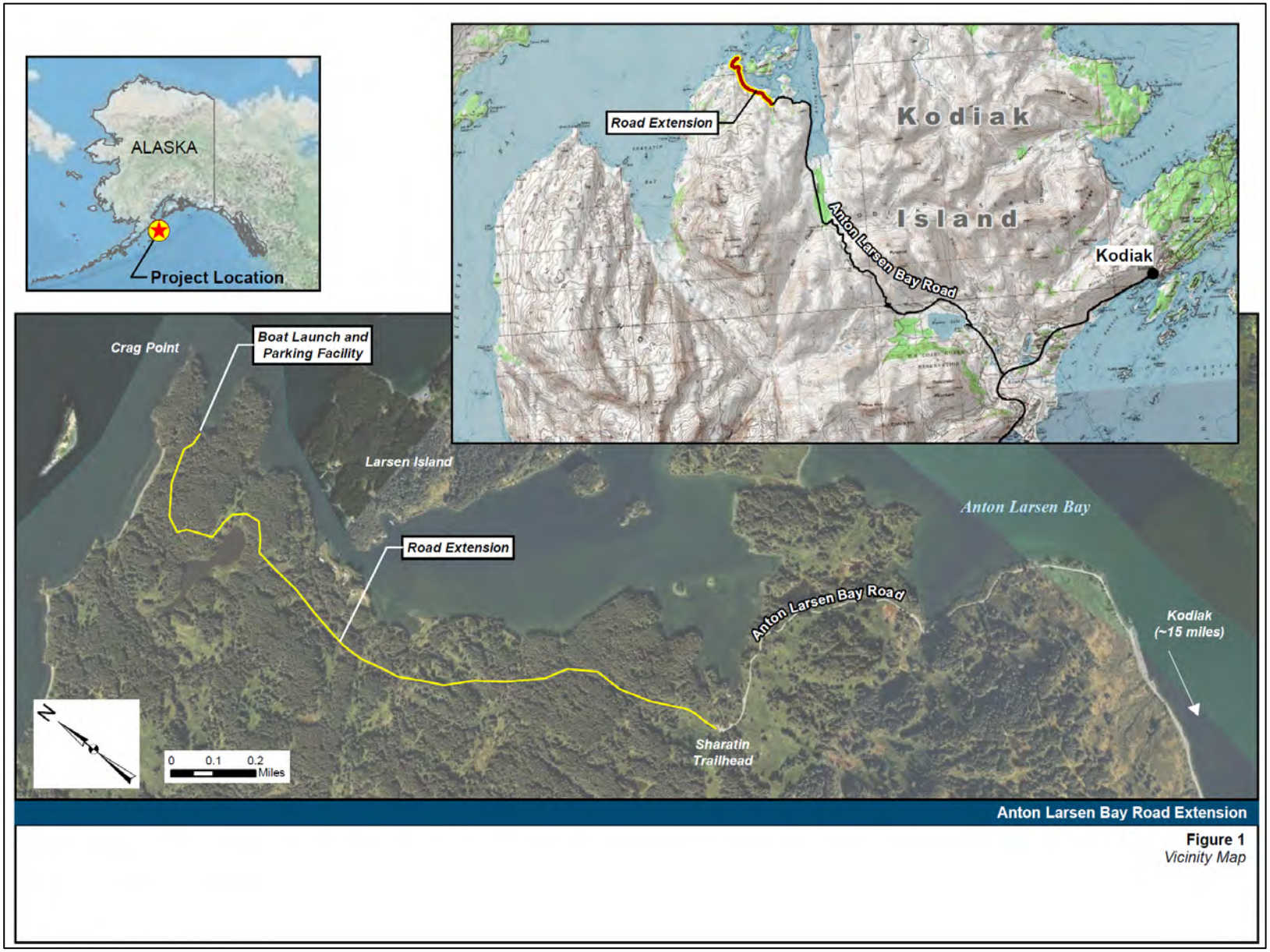
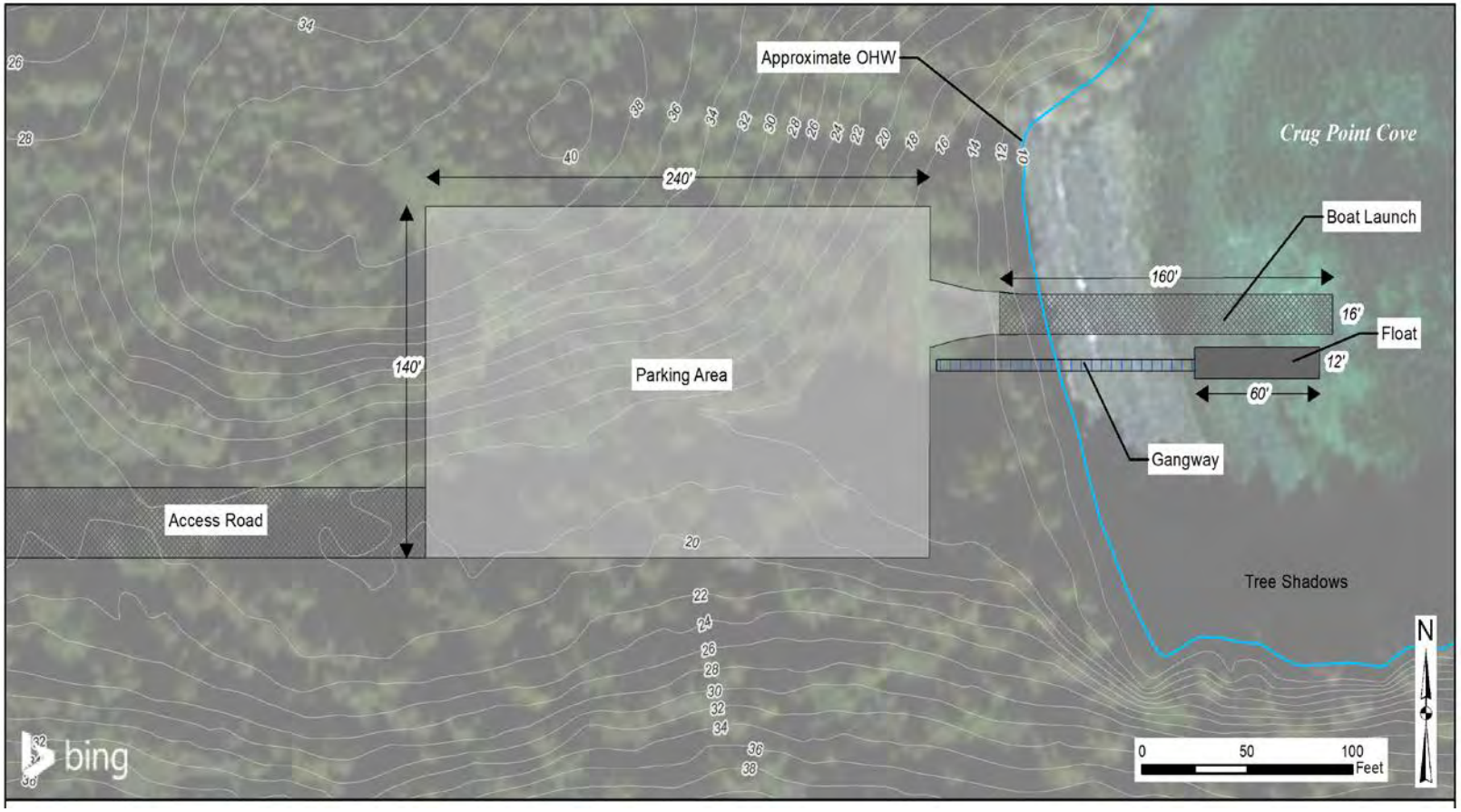


Figure 2. Vicinity Map – Boat launch, float, and parking area at road terminus near Crag Point



2.0 PROJECT DESCRIPTION

The proposed elements of the Anton Larsen Bay road extension and boat launch project are described below. The road extension crosses several streams, some of which are salmon-bearing, and the boat launch and float may impact ESA-listed Steller sea lion, northern sea otter, several species of baleen whales, and short-tailed albatross. Preliminary project plans are included in **Appendix A** (**Sheets 1-5**).

2.1 Road Design

The proposed road would extend Anton Larsen Bay Road approximately 1.8 miles, starting from the end of the existing road and ending at the beach near Crag Point. The Proposed Action will also include a parking area and boat launch at the terminus of the new roadway near Crag Point.

At the southern terminus of the project area, the proposed action would follow the existing alignment of Anton Larsen Bay Road for approximately 600 feet (0.1 mile) until its end at the Three Pillar Point trailhead and parking area. The proposed alignment would then follow the general alignment of the Three Pillar Point Trail in a northwest direction for approximately 2,900 feet (0.6 mile) until the trail's crossing over Chalet Creek. The alignment would continue to the northwest for another 6,000 feet (1.1 miles) until it reaches the Anton Larsen Bay shoreline just south of Crag Point. The total length of the Proposed Action is 1.8 miles.

The road design would reference the AASHTO Guidelines for Geometric Design of Very Low Volume Roads and the Alaska DOT&PF Pre-construction Manual (AASHTO 2001; ADOT&PF 2018).

The proposed Anton Larsen Bay Road surface would be aggregate. The proposed alignment traverses hillslopes and contours to the greatest extent practicable in an effort to minimize the area of new ground disturbance. The roadway cross-section consists of two 9-foot travel lanes, and a total roadway top width of 18 feet (**Sheet 1**). Roadway excavation is estimated at 120,000 cubic yards, but quantities are subject to change during final design.

Construction of the project will include clearing and grubbing of approximately 8 acres. Clearing and grubbing consists of felling trees and undergrowth and removing stumps and other organic material from the roadway prism by excavation. Merchantable trees within the construction limits will be harvested for commercial sale by the Contractor. Trees that are not commercially viable may be made available to Tribal or other local residents for firewood harvest.

All disturbed ground (roadway cuts & fills) will be stabilized with erosion and sediment control measures during construction including temporary turf establishment or similar. Upon completion of finished slopes, the area will be re-vegetated.

It is estimated that approximately 7,000 tons of crushed rock or other rock material will be needed for the project. Additionally, approximately 12,000 cubic yards of Select Borrow material will be needed to create a non-frost susceptible layer within the roadway structure. Commercial rock sources will be utilized to supply the project needs as no suitable aggregate materials are available within the project limits.

The roadway would be located in a 100-foot wide public access right-of-way (ROW) owned and maintained by the Native Village of Ouzinkie. Side slopes would be vary based upon geotechnical conditions.

2.2 Culvert/Bridge Crossings

Existing culverts and bridges overlapping the proposed roadway alignment would be upgraded and extended as needed. The existing crossing structures at Small Creek and Chalet Creek (two crossings) would be replaced with short span bridges or culverts large enough to comply with fish passage, hydraulic, and the hydrologic requirements presented in USFWS (2018). Culverts would also be installed, upgraded, or extended at other small stream crossings along the proposed alignment.

New cross drain culverts will be installed to strategically pass ditch runoff, drain seeps and springs and disconnect ditch lines from streams safely under the road prism. Proposed drainage structures have been assessed in the field by FHWA and ADOT&PF staff. These assessments identified a minimum of 3 culverts to be installed meeting aquatic organism passage criteria. In addition to installing aquatic organism passage culverts, approximately 25 additional new cross-drain culverts are proposed to be installed to provide adequate road drainage system(s). At a minimum, all culverts on live streams will be designed to pass the 100 year flow. The proposed culverts and structure improvements are described as follows:

- Structures on fish bearing streams - There are a total of 3 structures proposed for replacement that are located on fish bearing streams; coho and pink salmon, and/or Dolly Varden char are present in each of these streams (ADF&G 2015). The new structures will be designed to pass fish and may require the installation of a bridge at some of these locations.
- New structures will be installed at these 3 fish bearing stream locations and will be designed to facilitate fish passage. The structures to be installed at several of these crossings have not yet been determined. All fish passage structures on streams with salmonids will be designed to meet the project design criteria for fish passage in the Aquatic Restoration Biological Opinion II (ARBO II; NMFS 2013). A typical plan and section is shown in **Sheet 2**.

To the extent practicable, stream culverts will meet hydrologic design guidelines outlined by the USFWS (2018). These include:

- Crossing structures (culverts or bridges) will be designed using an approach that mimics the natural stream characteristics to the greatest extent possible.
- Crossing structures in reaches that are actively degrading will be avoided. If avoidance is not feasible, channels must be stabilized to prevent headcut or excessive lateral movement prior to construction of a new crossing structure.
- Culverts will be designed, constructed, and maintained so as to provide for hydrologic functioning of the water body they are crossing, including connectivity of wetlands and riparian areas adjacent to stream channels to the greatest extent possible.
- Crossing structures will be designed to accommodate at least the 100-year flood flow.
- The width of the primary crossing structure will not be less than 1.0 times the bankfull width of the channel.
- Crossing structures will be placed within/over the pre-development natural channel alignment when possible. Road alignment for new roads should be as close to perpendicular to the channel as possible.

2.3 Parking Area

An approximately 240-foot by 140-foot gravel parking area would accommodate parking for 30 to 40 vehicles with trailers **(Figure 2)**. The lot would require approximately 2,500 cubic yards of excavation, 1,300 tons of aggregate surfacing, and 1,900 cubic yards of select borrow. The parking area would be graded to direct stormwater runoff to the vegetated edges and away from the water as much as practical. The parking area will require approximately 0.8 acres of clearing and grubbing and disturbed areas outside of the parking lot surface will be revegetated upon completion of construction.

2.4 Boat Launch Facility

The proposed boat launch and associated float and parking area would primarily serve remote outlying communities of Port Lion, Ouzinke, and Larsen Island, particularly during the winter (**Sheet 3**). These communities can only reach the City of Kodiak by vessel (or plane). An existing boat launch/float facility is located within protected reaches of middle Anton Larsen Bay, but is subject to ice over events that can occur for over four months of the year. The proposed boat launch and float would be located on the outer most portions of Anton Larsen Bay within a protected cove just inside of Crag Point (**Figure 1 and Figure 2**). The area is protected from coastal swells and weather events from Marmot Bay and the Gulf of Alaska, but is largely ice-free during the winter, providing greater access to the resources available in Kodiak (ADOT&PF 2015).

2.4.1 Boat Launch

It is anticipated that a boat launch design typical of that recommended by the Alaska Department of Natural Resources will be designed and constructed at the road terminus. **Sheet 4** shows a plan view and sections of a typical design. The boat launch would likely be composed of 16 foot by 2 foot pre-cast concrete planks placed at elevations from approximately +11 feet to -6.0 feet MLLW. It is anticipated that at least 25 concrete planks will be needed to reach depths to accommodate vessel launch and retrieval, depending upon the existing grade of the nearshore. The bottom beneath the concrete planks will be graded/excavated at a slope of between 4 and 14 percent. After grading and excavation, a geotextile grid, gravel bedding, and treated timber sill will be layered in place, in that order, before placement of the concrete planks (**Sheet 4**).

Approximately 400 cubic yards of intertidal and shallow subtidal sediment will be excavated to construct the boat launch, depending upon the grade of the intertidal zone. The location of the boat launch will avoid existing saltmarsh habitat within the intertidal zone. Preliminary surveys estimate that less than 100 square feet of marsh vegetation, composed almost exclusively of *Honckenya peploides* will be removed from upper intertidal zone during construction of the launch.

2.4.2 Float

A float structure would accompany the boat launch to ease vessel launch and retrieval, particularly during inclement weather. A float has yet to be designed for the project, but to evaluate potential impacts, a preliminary design initially recommended for the Anton Larsen Dock Replacement project is presented for this BA. This dock, constructed in 2015, is located approximately 3 miles southeast of the proposed boat launch/float within middle portions of Anton Larsen Bay.

The proposed preliminary design would use a 60 foot by 12 foot float supported by four, 24-inch diameter steel piles (**Sheet 5**). Preliminary design criteria would include the following (JYL 2014):

- Wave height: 3 feet
- Maximum ice thickness: 8 inches
- Mean High High Water (MHHW): 9.3 ft
- Mean High Water (MHW): 8.5 ft
- Mean Low Low Water (MLLW): 0 ft
- Wind speed: 120 mph
- Snow load 60 lb/sf
- Float dimensions: 60 ft x 12 ft, with internal piles and 20 inch freeboard
- Maximum vessel length: 35 ft
- Maximum number of vessels: 12

Float construction would consist of steel tubular floats with a timber deck. The steel floats are resistant to ice damage during winter months. Additional polystyrene billets would also be incorporated into the middle of the floats for fine tuning of buoyancy. The four 24-inch piles would hold the float in position. A moment frame would also be constructed by connecting each pair of piles with a steel beam at the top. The frame would allow for 10 to 12 feet of clearance above the float deck at high tide. This type of brace is required to resist forces exerted on the float from moored vessels during periods of high wind. A 6-foot wide aluminum gangway for pedestrian access from the shore to the float would also be constructed. A plan, section and concept level estimate for this float is provided on **Sheet 5** (JYL 2014).

For the completed Anton Larsen Dock Replacement project, the final design and constructed float was expanded from 60 to 120 feet, and supported by 6 piles instead of 4 after a public comment period. The proposed float is anticipated to use the smaller original design given the lower expected utilization and lower degree of ice over events observed near Crag Point (**Sheet 5**). A cost analysis evaluated three alternative float designs of the same size and found less than an 8 percent difference in total costs between a light duty, medium duty (option described in this BA), and a heavy duty option. This is because much of the costs remain constant, such as mobilization, surveys, type of gangway, and pile driving, regardless of the float design (JYL 2014).

2.5 Excavation and Fill Quantities

Table 1 shows the approximate quantities of excavation and fill activities for the road extension, bridge and culvert replacements, parking area, and boat launch.

Table 1. Estimated Quantities of Excavation and Fill

Location	Total (yd^3)		Below OHWM (yd^3)	
	Fill	Excavation	Fill	Excavation
Road Design	12,000	120,000	0	0
Culvert/Bridge Crossing	0	0	0	0
Parking Area	1,900	2,500	0	0
Boat Launch	400	0	0	300

The contractor would be responsible for the disposal of material outside the project site.

2.6 Construction Equipment and Duration

Table 2 shows a list and typical usage of the construction equipment likely to be used on the project.

Most construction would be accomplished by one crane, one pile driver (vibratory and impact hammers), a track-mounted excavators (2 to 3), multiple dump trucks, and a loader.

Estimated duration of construction in days, including both total construction and duration of in water work, is displayed in **Table 3** below.

Table 2. List of Construction Equipment Likely to be Used at the Boat Launch and Parking Area

Equipment Type	Typical Uses
Air Compressor	Providing air power for pneumatic tools such as rock drills, jackhammers, rotary hammers, etc.
Backhoe	Minor excavating, digging, and backfilling trenches.
Chain Saw	Tree removal.
Concrete Pump Truck	Pumping concrete into concrete forms for structures, via 4- to 6-inch pipe.
Crane	Lifting, moving various heavy objects within a relatively small radius; drilling large holes such as drilled shafts (with drilling apparatus attached).
Front-End Loader	Loading trucks, filling trenches, excavating in limited areas, and miscellaneous earthworking operations.
Generator	Running electric powered tools.
Pile driver (impact and vibratory)	Installing steel piles.
Pneumatic tools including rock drill, jackhammer	Drilling rock and breaking up pavement.
Sheep's Foot Roller	Compacting subgrade – clayey soils and gravels.
Track-Hoe / Excavator	Excavating, digging trenches.
Trucks and Trailers	Hauling equipment and materials; transporting excavated or embankment (fill) material.
Welder / Torch	Joining of metals such as pile moment frame.
Water Truck	Compacting for dust control.
Wheel Loader	Materials handling
Crawler mounted dozer	Clearing, grubbing, general grading
Motor Grader	Fine grading and shaping of subgrade and each pavement section material.
Steel wheeled roller	Pavement section materials compaction
Hydro-seeder	Placement of hydroseed and hydromulch

Table 3. Estimated Construction Durations

Location	In Water Work (days)	Total Construction (days)
Road Design	0	140
Culvert/Bridge Crossing	20	65
Parking Area	0	30
Pile Driving	2	5
Boat Launch	10	30
Float	14	30

2.7 Work Below OHWM

Work below the OHWM that has the potential to adversely affect stream EFH or the marine nearshore will occur at the bridge/culvert crossings along the proposed road route, or in the cove near Crag Point during construction of the boat launch facility. Estimated duration of in water work is included in **Table 3**.

Work activities below OHWM at all locations would include the following:

- In water work at stream crossings
- Installing 4 steel piles in the nearshore marine environment
- Installing a new float system associated with the piles;
- Installing a boat launch composed of pre-cast concrete planks from above the OHWM extending through the intertidal zone.

Work below the OHWM is anticipated to occur during an ADF&G-approved in water work window of May 15 through July 15 to avoid disturbance of salmon redds. Actual in water work windows would be determined by consultation with the permitting agencies.

2.8 Vegetation Clearing

The proposed project would remove vegetation that has the potential to adversely affect the marine nearshore in the vicinity of the boat launch and parking area. Clearing is expected to occur over approximately 0.8 acres within the upland immediately adjacent to the boat launch and cove at the proposed road terminus, most of this space involves the proposed parking area.

Vegetation clearing will also occur along the 1.8 mile road construction footprint (approximately 8 acres); these areas will not affect ESA-listed species that reside in marine areas, but may impact EFH at the stream crossings.

2.9 Stormwater Management

All runoff would disperse and infiltrate into soils on the road shoulders. Temporary erosion and sediment control (TESC) measures would be installed prior to and during construction to minimize pollutants from entering area streams. The project would result in a net increase in impervious surface in the action area due entirely to the gravel road and parking area footprint. The increase in impervious surface would amount to approximately 204,730 square feet (4.7 acres).

2.10 Pile Driving and/or Blasting

No blasting is anticipated along the road alignment, parking area, or boat launch. Pile driving is anticipated with the construction of the boat launch float, principally with a vibratory pile driver. After vibratory pile driving, each pile will likely need to be proofed with an impact pile driver. Four 24-inch piles will be required to anchor the moorage float. Piles would be installed by vibratory hammer to the point of refusal, then 'proofed' for load bearing with an impact hammer. Assuming that the four piles would be driven 50 feet deep, and that 30 strikes per foot are required for proofing, a total of approximately 6,000 strikes of an impact pile driver would be required, in a worst case situation (3,000 strikes per day assuming 2 piles are driven per day).

2.11 Best Management Practices

Project-related Best Management Practices (BMPs), shown in **Table 4**, are typical on this type of project. A TESC and a Stormwater Pollution Prevention Plan (SWPPP) would include key measures to protect water quality.

Table 4. Project-Related Best Management Practices Applicable to All Project Action(s)

1	A TESC Plan and a Source Control Plan will be developed and implemented for all projects requiring clearing, vegetation removal, grading, ditching, filling, embankment compaction, or excavation. The BMPs in the plans will be used to control sediments from all vegetation removal or ground-disturbing activities.
2	Only vegetation that is a necessity for the project to be constructed will be removed. Delineate clearing limits with orange barrier fencing wherever clearing is proposed in or adjacent to a stream/wetland or its buffer.
3	Erosion control blankets may be installed on steep slopes that are susceptible to erosion and where ground-disturbing activities have occurred. This will prevent erosion and assist with establishment of native vegetation.
4	The contractor will designate at least one employee as the Erosion and Sediment Control (ESC) lead. The ESC lead will be responsible for the installation and monitoring of erosion control measures and maintaining spill containment and control equipment. The ESC lead will also be responsible for ensuring compliance with all local, state, and federal erosion and sediment control requirements.
5	Inspect all temporary and permanent erosion and sedimentation control measures on a regular basis. Maintain and repair to assure continued performance of their intended function. Inspect silt fences immediately after each rainfall, and at least daily during prolonged rainfall. Remove sediment as it collects behind the silt fences and prior to their final removal.
6	Where practicable for soil stability, native vegetation and/or a native seed mixture will be planted in areas disturbed by construction activities.
7	The contractor shall prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan prior to beginning construction. The SPCC Plan shall identify the appropriate spill containment materials, which will be available at the project site at all times.
8	All equipment to be used for construction activities shall be cleaned and inspected prior to arriving at the project site, to ensure no potentially hazardous materials are exposed, no leaks are present, and the equipment is functioning properly.
9	Construction equipment will be inspected daily to ensure there are no leaks of hydraulic fluids, fuel, lubricants, or other petroleum products. Should a leak be detected on heavy equipment used for the project, the equipment shall be immediately removed from the area and not used again until adequately repaired.
10	Material that may be temporarily stored for use in project activities shall be covered with plastic or other impervious material to prevent sediments from being washed from the storage area to surface waters.
11	If necessary, a biologist shall re-evaluate the project for changes in design and potential impacts associated with those changes, as well as the status and location of listed species, every 6 months until project construction is completed.
12	Exposed soils will be hydroseeded with a native grass mix or other appropriate surface mix (e.g., rock) after construction is complete.

3.0 ACTION AREA

The action area includes all areas that could be affected directly or indirectly by the proposed action and is not limited to the actual work area (project area). The project area and secondary project features are considered when defining the action area. The action area would include potential effects from audible disturbance, terrestrial habitat impacts, and impacts to aquatic environments. The aquatic action area encompasses much of the cove associated with Crag Point to account for potential underwater sound effects. Also within this action area, waterborne injury and behavioral disturbance zones have been calculated to determine the potential effects of impact and vibratory pile driving on ESA-listed marine mammals.

3.1 Aquatic Zones of Impact

3.1.1 Source Levels and Thresholds

Potential aquatic effects would include in-air and underwater noise generated by pile driving and construction of the boat launch at the road terminus. Of these aquatic noise sources, pile driving by far generates the highest amount of underwater and in-air noise. The Washington (WSDOT) and California (Caltrans) Departments of Transportation have compiled waterborne acoustic monitoring data for various pile driving projects within their respective states (WSDOT 2018; ICF Jones & Stokes and Illingworth and Rodkin 2009, updated in 2012). These data, in conjunction with the practical spreading loss model developed by the NMFS and USFWS, as well as the most recent technical guidance were used to determine the distance from the driven pile at which the noise thresholds are exceeded (**Figure 3** and **Appendix B**).

Assuming a pile supported float structure composed of four, 24-inch piles (similar to the boat launch/float located on Anton Larson Bay Road within middle portions of Anton Larson Bay), installation of these piles would produce the following source level noise signatures:

- Vibratory Pile driving (underwater) – 185 db Peak, 175 dB Root Mean Square (rms), 175 dB Sound Exposure Level (SEL)
- Impact Pile Driving (underwater) – 210 dB Peak, 193 dB (rms), 183 dB SEL
- Impact Pile Driver (in-air) – 110 dBA

NMFS, under the Marine Mammal Protection Act, recently developed underwater noise guidelines for determining sound thresholds for the injury and disturbance of marine mammals (NMFS 2018a). Guidelines determine effects on marine mammals by using new values for when animals experience Permanent Threshold Shifts or PTS (i.e., hearing sensitivity loss) or Temporary Threshold Shift (TTS; i.e., temporary hearing loss). For pile driving and use of the recommended isopleth model, PTS is used as the zone of impact for injury to marine mammals. Present guidelines are as follows:

- 183 dB sound exposure level (SEL) as the level at which low-frequency cetaceans (baleen whales) experience PTS.
- 185 dB SEL as the level at which mid-frequency cetaceans (dolphins, toothed whales, bottlenose whales) and phocid pinnipeds (true seals) experience PTS.
- 155 dB SEL as the level at which high-frequency cetaceans (true porpoises, *Kogia*, river dolphins, cephalorhynchid, *Lagenorhynchus cruciger*, and *L. australis*) experience PTS.
- 203 dB SEL as the level at which otariid pinnipeds (sea lions and fur seals) experience PTS.

In addition, NMFS has reported an in-air injury threshold for sea lions of 100 dBA.

Underwater noise thresholds for the disturbance of marine mammals (all hearing groups) have been set at 160 dB for impact pile driving and a conservative 120 dB for vibratory driving for all marine mammal hearing groups.

3.1.2 Calculated Zones of Impact - Injury

Using the NMFS Technical Guidance for assessing effects of anthropogenic sound on marine mammal hearing (NMFS 2018b), the underwater impact injury zone and hence the action areas for vibratory pile driving is 6 meters (20 feet) for Steller sea lions. For impact pile driving, assuming an attenuating bubble curtain is used (attenuation of 6 dB rms), the underwater impact injury zones and hence action areas is 124 meters (407 feet) for Steller sea lions.

For in-air pile driving (impact), the injury zone for Steller sea lions is 32 meters (105 feet).

The USFWS has recently adopted the NMFS guidelines for otariid pinnipeds as protective of northern sea otters; hence all impact zones for Steller sea lions apply to otters (FR Vol 83, No. 80).

For the baleen whales (fin, humpback, and north Pacific right whales), the underwater injury zone for vibratory pile driving is 148 meters (485 feet). For impact pile driving however, the impact zone is considerably larger, nearly crossing the outer bay at 3,169 meters (1.97 miles) from the driven pile.

The USFWS has also reported a waterborne injury threshold of 202 dB SEL for marbled murrelet (impact pile driving only; SAIC 2011). Using the USFWS practical spreading loss model, an impact zone of 21 meters from the driven pile is calculated. Populations of marbled murrelet are not ESA-listed in Alaska, but this impact zone may be considered a surrogate for other ESA-listed seabirds.

Injury impact zones are presented in **Figure 3** and **Figure 4**; model calculations are presented in **Appendix B**.

3.1.3 Calculated Zones of Impact - Disturbance

Using the NMFS practical spreading loss model, the zone of disturbance impacts for all marine mammals is 224 meters for impact pile driving (**Figure 3)**, and over 45 kilometers for vibratory driving. The threshold for continuous vibratory driving (120 dB) has been set at levels that approach ambient underwater noise in many undeveloped areas. In the case of this project, the disturbance zone is stopped by the northern shore of Anton Larsen Bay (**Figure 4)**.

Figure 3. Marine mammal and seabird zones of injury and disturbance

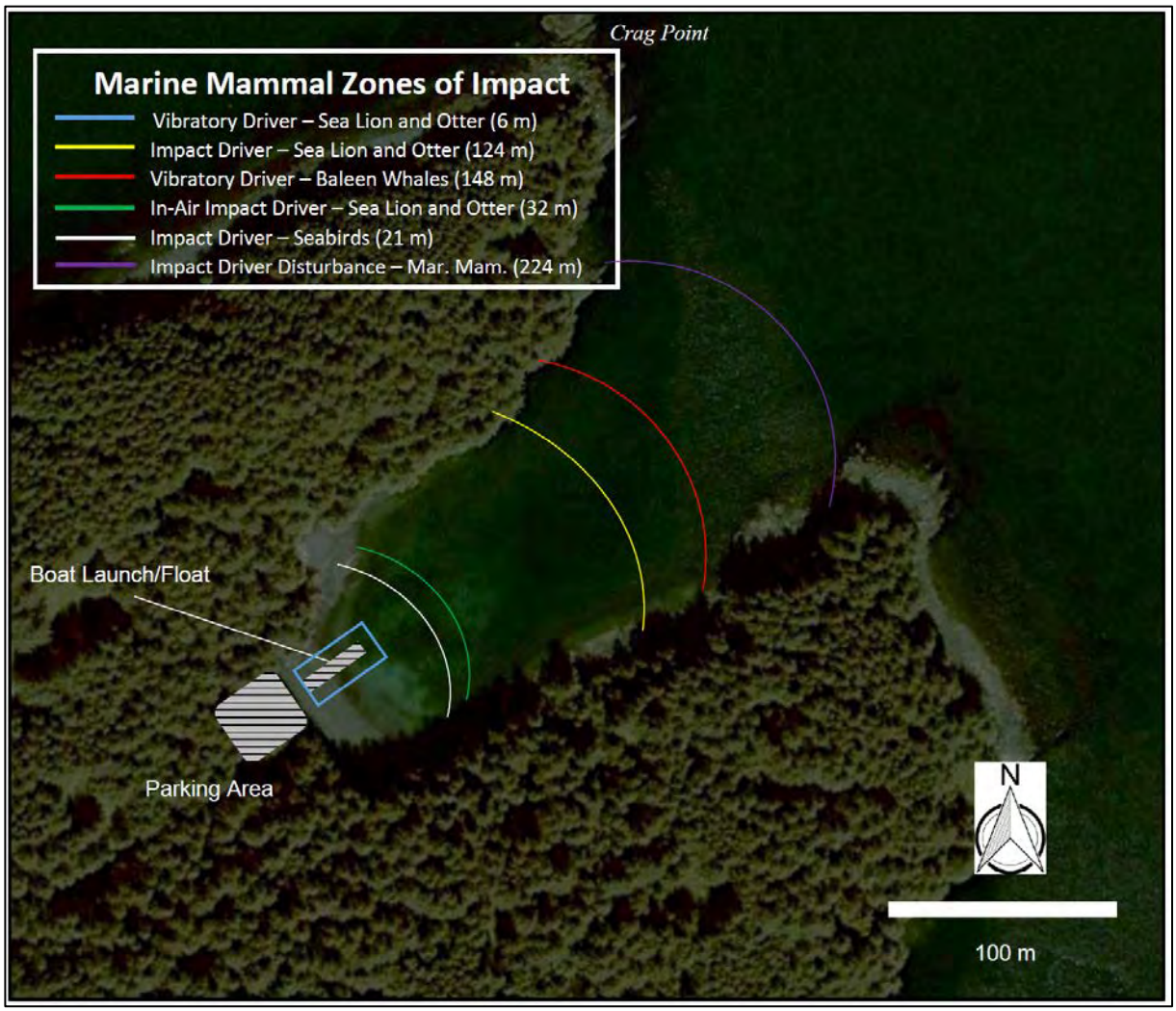
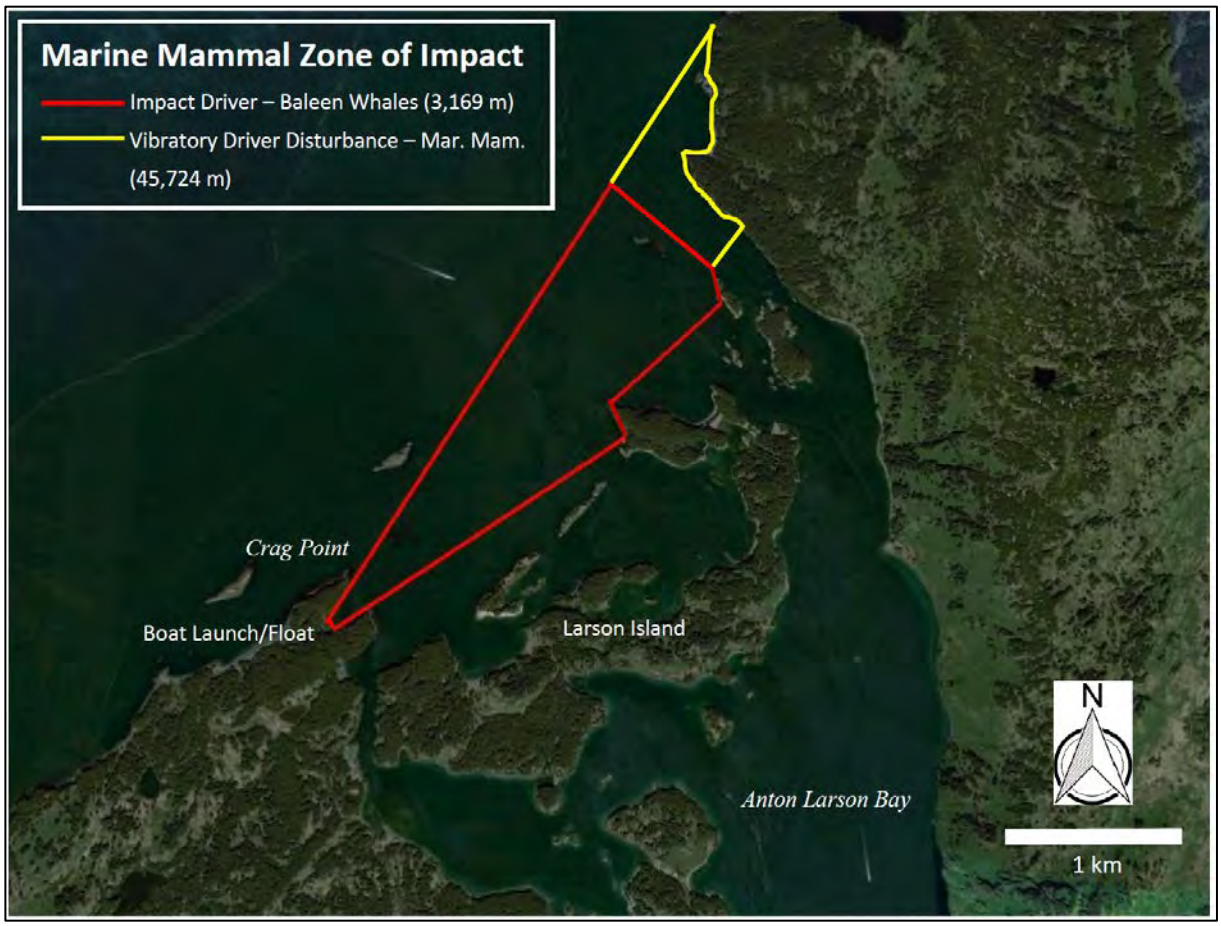


Figure 4. Zones of injury and disturbance for baleen whales



For the ESA-listed species, there would be minimal to no effect of the road extension outside of the launch and float at the road terminus. However, the road extension would cross several salmon-bearing streams or tributaries that are considered Essential Fish Habitat (EFH) for federally managed salmon species. EFH in the action area and the potential for project-related impacts on EFH are discussed in Sections 4.5 and 5.2.3, respectively.

3.2 Terrestrial Action Area

Terrestrial noise associated with the construction of the parking facility at the road terminus is expected to be the project impact that may affect ESA-listed marine bird and marine mammal species that occupy nearshore areas of the cove near Crag Point. Based on the types of construction equipment proposed for the project, upland noise levels associated with the majority of construction (typical) are not expected to exceed 110 A-weighted decibels (dBA), which is the average maximum noise level from an impact pile driver (WSDOT 2018) Typically, the project will have a maximum noise level of approximately 92 dBA, which is the additive noise levels produced by the louder tools such as pneumatic tools, jack hammers, and chainsaws that may be required. Since not above the in-air threshold of 100 dB for affecting sea lions, proposed terrestrial work will not impact these species.

4.0 ENVIRONMENTAL BASELINE

4.1 Study Methods

David Evans and Associates, Inc. (DEA) requested an official USFWS species list for the proposed project from the Information for Planning, and Consultation System (IPaC; USFWS 2018) and reviewed the NMFS ESA Species and Critical Habitat Mapper Web Application to determine the potential presence of ESA-listed species and critical habitat within the project vicinity. Species lists are included in **Appendix C**.

A DEA biologist conducted a site visit to the project area on October 23, 2018 to document critical areas, including streams, wildlife habitat and wetlands, note species presence, and potential fish and wildlife habitat in the action area. The entire proposed 1.8 mile road extension was walked to examine existing conditions and the type of stream crossings required. After examining the road extension route, the site visit team boarded a 19 foot vessel to examine marine conditions in Crag Point Cove and outer Anton Larsen Bay. A sea otter survey was also conducted between the cove and existing boat launch within middle portions of the bay. Site visit photographs and a photo point map are presented in **Appendix E**.

4.2 Environmental Setting

The project is located along the northeast portion of Kodiak Island, Alaska. The Anton Larson Bay Road is the only thoroughfare that traverses this portion of the island, and the proposed extension is the only road leading to and from the outer coast. Most of the action area is characterized by undeveloped forested Native Corporation or native allotment land. Representative photographs of the project area are included in **Appendix E**.

4.2.1 Terrestrial Environment

The proposed road extension action area consists primarily of a mix of forest land, with a few scattered rural residences. Elevation in terrestrial portions of action area is relatively flat ranging from sea level at the shore of the proposed boat launch to less than 20 feet above sea level in the proposed parking area. The approximate two mile road extension traverses some hilly areas, particularly near the coast, but generally ascends no more than approximately 150 feet above sea level.

Most of the action area and road extension route is occupied by native upland and wetland forest vegetation. Four main natural vegetation types dominate the study area: Closed needle leaf (conifer) forest, closed tall scrub, mesic forb herbaceous, and open mixed forest, as described below (HDL and DEA 2019a).

Closed Needle leaf (Conifer) Forest. The typical upland community found throughout the study area is Sitka spruce (*Picea sitchensis*) forest with a very sparse understory of one or more of the following species: oval-leaved blueberry (*Vaccinium ovalifolium*) and Alaska blueberry (*Vaccinium alaskaense*), salmonberry (*Rubus spectabilis*), spiny wood fern (*Dryopteris dilatata*) and/or dwarf dogwood (*Cornus canadensis*). Canopy density ranges from 60 to 100 percent. This is the most common vegetation type along the proposed road alignment.

Closed Tall Scrub. There is one valley along the road extension route that has a larger perennial stream that has developed a well-drained alluvial substrate dominated by Sitka alder (*Alnus sinuata*) and willow (*Salix* sp.). The broadleaf shrub canopy is typically dense, often with 100 percent coverage.

Mesic Forb Herbaceous. Three northeast-facing hillslopes along the route are open forb meadows, dominated by lady fern (*Athyrium filix-femina*), red fescue (*Festuca rubra*), and cotton grass (*Eriophorum* sp.).

Open Mixed Forest. Mixed deciduous/evergreen woodlands dominated by fireweed (*Chamaenerion angustifolium*), lady fern, spiny wood fern, salmonberry, cottonwood (*Populus trichocarpa*), and Sitka spruce are also present on some northeast-facing hillslopes. This vegetation type has tree canopy cover between 25 and 60 percent, with a dense shrub mid-story.

Freshwater Wetlands. Wetland habitats mapped in the study area include nine discrete wetland units totaling 1.28 acres; 0.14 acre has been classified as palustrine-forested. Another 0.15 acre has been classified as pond, and 0.99 acre has been classified palustrine-emergent. All of the mapped wetlands within the study area exhibit a direct surface water or wetland connection to tributaries discharging into Anton Larsen Bay, or are in close proximity to waters directly connected to Anton Larsen Bay and are considered adjacent (DEA and HDL 2019b). At the proposed road terminus on Crag Point Cove, a very small stream drains a wetland, before broadening to another wetland within the parking area footprint, as shown in **Figure 5**.

Figure 5. Wetland areas at the road terminus

4.2.2 Aquatic Environment

Marine Environment. The aquatic environment with the potential to support ESA-listed species is associated with the road terminus at the cove near Crag Point where the boat launch and parking area are proposed for construction. The cove's intertidal and littoral zone are relatively low gradient, composed of angular gravel with outcrops of bedrock along the east and western shores. Spruce forest extends to just above the approximate ordinary high water mark (OHWM) along most of the cove shoreline. Saltmarsh vegetation, composed primarily of *Honckenya peploides* is present between mean higher high water (MHHW) and OHWM. Photographs of the cove near Crag Point taken during an October 2018 site visit are presented in **Appendix E**.

Most of the offshore action area north of Crag Point and west of Larson Island are composed of rocky shelf and reef habitats associated with the mainland, and small islands, at depths generally less than -30 feet MLLW. Deeper areas generally between -60 and -96 feet MLLW are also present within the action area between Crag Point and Kizhuyak Point.

According to the ShoreZone Alaska Coastal habitat database, patchy to continuous green algae and rockweed is present throughout the cove with abundant colonies of several kelp species. No eelgrass has been documented.

Numerous marine fish, shrimp, and crab species have been documented within embayments of the Kodiak Archipelago, as shown in **Table 5** (Mueter and Norcross 2000). Nearly 90 percent of the species found were composed of shrimp, gadids (pollock and cod), and flatfish.

Table 5. Species and species groups found in the nearshore of the Kodiak Archipelago

Common Name	Scientific Name	Proportion of Catch (%)
Shrimp	Pandalidae and Crangonidae	39.1
Walleye pollock	*Theragra chalcogramma*	24.3
Flathead sole	*Hippoglossoides elassodon*	14.6
Arrowtooth flounder	*Atherethes stomias*	6.3
Pacific cod	*Gadus microcephalus*	3.8
Yellowfin sole	*Pleuronectes asper*	1.6
Sculpins	Cottidae	1.5
Capelin	*Mallotus villosus*	1.3
Pacific halibut	*Hippoglossus stenolepis*	0.8
Tanner crab	*Chionocetes bairdi*	0.8
Red king crab	*Paralithodes camtschatica*	0.7
Pacific tom cod	*Microgadus proximus*	0.6
Pacific sandfish	*Trichodon trichodon*	0.6
Sablefish	*Anoplopoma fimbria*	0.6
Rock sole	*Pleuronectes pacificus*	0.6
Eelpounts	Zoarcidae	0.5
Pacific herring	*Clupea pallasi*	0.5
Other Species and Species Groups (15)		1.8

Stream Environment. Fish species documented in area streams that cross the proposed road extension include juvenile and adult coho salmon, adult pink salmon, and Dolly Varden char, as shown in **Figure 6** (ADF&G 2015). Though the potential impact of the road extension project on these streams would not affect ESA-listed marine mammal and seabird species, they are considered EFH habitats protected by NMFS. Photographs at proposed stream crossings taken during an October 2018 site visit are presented in **Appendix E**.

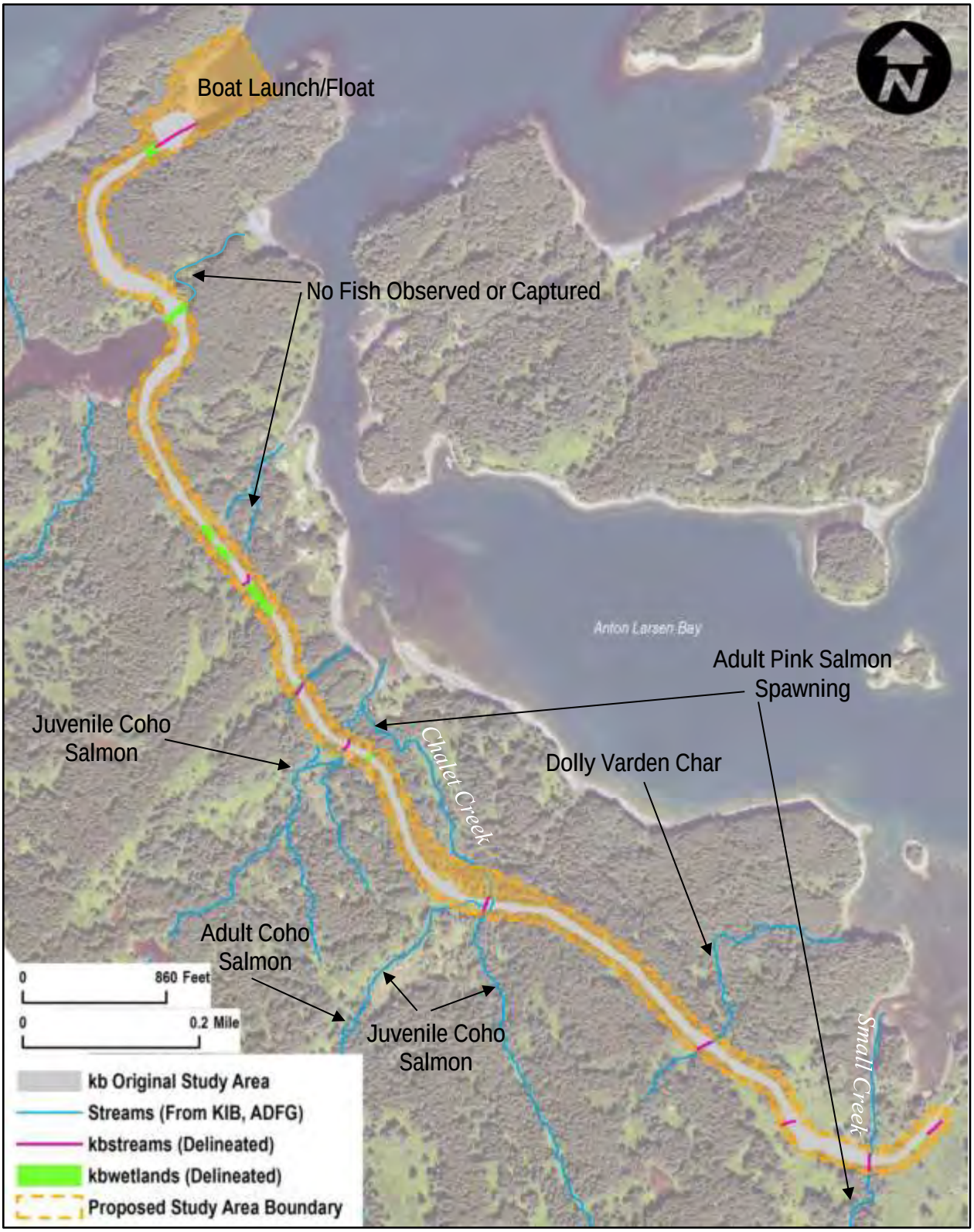
The largest stream basin crossed by the proposed road extension is Chalet Creek; the proposed road would cross both the mainstem and tributary with culverts or small bridges. The mainstem of Chalet Creek at the existing ATV crossing is approximately 9 to 12 feet wide with moderate flows, cobble/gravel substrates, and dense riparian vegetation dominated by spruce and willow trees with a predominant salmonberry understory. The existing bridge is approximately 8 feet wide designed for foot and ATV traffic only. ADF&G has documented both adult and juvenile coho salmon in Chalet Creek upstream of the proposed crossing and spawning adult pink salmon downstream of the crossing (ADF&G 2015; **Figure 6**).

ADF&G also documented adult pink salmon spawning in Small Creek, upstream of the proposed crossing. At the stream crossing, this stream is similar in size and description as Chalet Creek, though the stream passes through a pair of culverts at the existing road crossing. ADF&G considers the culverts perched, which may restrict access to upstream areas during certain flow regimes. ADF&G estimated that approximately 900 pink salmon were spawning in the stream (ADF&G 2015).

The remaining streams crossing the proposed road extension are quite small; Dolly Varden char were observed in one of these unnamed streams, while none were observed in two others (ADF&G 2015; **Figure 6**).

Although no fish surveys were conducted or identified, the proximity of the marine Action Area to streams suggest that juvenile salmon could rear in the nearshore vicinity of the boat launch and float.

Figure 6. Location of documented EFH salmonids within the proposed road extension



4.3 Description of Listed Species and Critical Habitat

A total of six listed species, two of which have designated critical habitat (DCH) in or near the action area have been identified by the USFWS and NMFS (**Table 6**).

Table 6. NMFS and USFWS Listed Species Potentially Present in the Action Area

Common Name	Scientific Name	Federal Status	Likely Presence in Action Area
Northern Sea Otter	*Enhydra lutris kenyoni*	Threatened	Yes
Critical habitat		Designated	Yes
Steller Sea Lion	*Eumetopias jubatus*	Threatened	Yes
Critical habitat		Designated	Yes
Humpback Whale	*Megaptera novaeangliae*	Threatened (Mexico DPS)	Yes
Critical habitat		Not Designated	--
Fin Whale	*Balaenoptera physalus*	Endngered	Yes
Critical habitat		Not Designated	--
North Pacific Right Whale	*Eubalaena japonica*	Endangered	Yes
Critical habitat		Designated	No
Short-tailed Albatross	*Phoebastria albatrus*	Endangered	No
Critical habitat		Not Designated	--

USFWS 2016, NMFS 2016

4.4 Species Utilization

This section addresses the legal status and distribution of listed species that have potential to occur in the action area. ESA species lists from the USFWS and NMFS are presented in **Appendix C** and life history details are described in **Appendix D**.

4.4.1 Northern Sea Otter

Status: The Southwest Alaska Distinct Population Segment (DPS) of northern sea otter was listed as threatened by the USFWS on August 9, 2005. Final critical habitat was designated in 2009 and encompasses about 15,000 square kilometers. This critical habitat is broken into 5 units: Western Aleutian, Eastern Aleutian, South Alaska Peninsula, Bristol Bay, and Kodiak Island/Kamishak Bay/Alaska Peninsula. (USFWS 2013). A summary of the primary constituent elements (PCEs) of northern sea otter DCH is provided in **Table 7.**

Table 7. Northern Sea Otter Critical Habitat PCEs within the Action Area

Primary Constituent Element	Baseline Status in Aquatic Action Area
PCE 1. Shallow, rocky areas where marine predators are less likely to forage, which are waters less than 2 m (6.6 ft) in depth .	PCE Present. Nearshore areas of the cove near Crag Point have areas of shallow water, rocky habitats
PCE 2. Nearshore waters that may provide protection or escape from marine predators, which are those within 100 m (328.1 ft) from the mean high tide line	PCE Present. The entire northern sea otter action area is composed of shallow water habitat so meets the definition of PCE 2. However, no reefs or haulout areas are present within 100 m of shore. Such protected refuge habitat is found outside of the project/action area within 0.5 miles within the embayment formed by the south shore of Larsen Island, where intertidal reefs, offshore rocks, and islets are present
PCE 3. Kelp forests that provide protection from marine predators, which occur in waters less than 20 m (65.6 ft) in depth .	PCE Present. Substantial kelp beds are present within the project area cove near Crag Point
PCE 4. Prey resources within the areas identified by PCEs 1, 2, and 3 that are present in sufficient quantity and quality to support the energetic requirements of the species..	PCE Present. Prey resources are present within the cove and surrounding rocky habitats within the Kodiak archipelago.

Presence in the Action Area: The US Fish and Wildlife Service estimated the population of northern sea otters within the Kodiak archipelago at 11,005 individual animals (USFWS 2013). Approximately 20 percent of the entire population resides in the southwest Alaska area (Aleutians Islands, Alaska Peninsula, outer Cook Inlet; USFWS [2014]). During a recent site visit (October 23, 2018), no otters were observed within the project area cove at Crag Point; however, 15 to 20 otters present as individuals, in small groups, or female/pup tandems were observed southwest of the cove along the southern shore of Larsen Island approximately 0.5 to 1 mile away. This area can be characterized as a protected shallow embayment with numerous offshore intertidal reefs, large offshore rocks, and islets. Entrance to the embayment is through a narrow and shallow channel formed by the mainland and the west end of Larsen Island **(Figure 7).** Although no otters were observed in the project area, given the close proximity to otters, shallow nature of the project area, and seasonal abundance of kelp, the project area cove may provide habitat for the species. However, no offshore intertidal reefs or other offshore areas above MHHW that may offer haulout refuge for otters are present.

Figure 7. Northern otter sightings during a site visit on October 23, 2018

4.4.2 Steller Sea Lion

Status: The Steller sea lion was listed as threatened on November 26, 1990, and the western DPS of the species was reclassified as endangered in 1997. Final critical habitat was designated on August 27, 1993, defined as an aquatic zone 23 miles seaward of rookeries and major haulouts. In addition, three special aquatic foraging areas have been identified and designated as critical habitat, one of which includes the Shelikof Strait along the northern portion of Kodiak Island.

The nearest Steller sea lion rookery is located on Marmot Island, approximately 36 miles northeast of the project area. Although the project site is more than 23 miles from this rookery, there is one identified major haulout within the 23-mile aquatic zone, located on Long Island. This major haulout is approximately 21 miles (by water) east of the project area and approximately 5 miles east of the City of Kodiak.

The project area is also located approximately 32 miles east of the special aquatic foraging area in the Shelikof Strait, so is not within this designated critical habitat feature.

Presence in Action Area: No Steller sea lion surveys were identified in the vicinity of the project area and none were observed during the October site visit. However, Fritz et al. (2013) conducted surveys at 23 rookeries and haulouts within the Kodiak archipelago each year from 2008 and 2011 including the rookery on Marmot Island and the major haulout at Long Island. The maximum number of individual Steller sea lions observed in any one year was 1,795 animals throughout the archipelago. Although no animals were observed at Long Island, over 500 occupied Marmot Island. These data suggest that Steller sea lions are relatively abundant within the archipelago and so may be found in the project area on occasion.

4.4.3 Humpback Whale

Status: Status: Humpback whales were listed as endangered in 1970 under the Endangered Species Conservation Act of 1969, the precursor to the ESA. When the ESA was enacted in 1973, humpback whales were again listed and are also considered as "depleted" under the Marine Mammal Protection Act (MMPA). There are 14 DPS's of humpback whale, five of which are listed under ESA and one, the Mexico DPS, has been documented to occur in the Gulf of Alaska and Aleutian Islands in the vicinity of the action area. The Mexico DPS is listed as threatened under the ESA.

Critical habitat has not been designated for this species.

Presence in the Action Area: Zerbini et al. (2006) found that humpback whales occurred from the Kenai Peninsula to Umnak Island and were more abundant near Kodiak Island, the Shumagin Islands and north of Unimak Pass. Baraff et al. (2002) sighted 164 individual humpback whales between June and September within Marmot and Chiniak bays, two large embayments along northeast Kodiak Island. Humpbacks are the most common baleen whale in the Alaska region and these data suggest that the whales may occur within offshore shelf habitats north of Larsen Island. Some of these areas fall within the zone of impact for impact pile driving, which extends out of the cove near Crag Point for nearly three miles (**Figure 4**).

4.4.4 Fin Whale

Status: The fin whale has been listed as endangered under ESA since its passage in 1973. Critical habitat has not been designated for this species.

Presence in the Action Area: Though typically an offshore species, fin whales have been documented throughout the Alaska region with summer feeding grounds in the Gulf of Alaska, Prince William Sound, along the Aleutian Islands, and west of Kodiak Island (https://www.adfg.alaska.gov/static/education/wns/fin_whale.pdf). Zerbini et al. (2006) found that the whales occurred primarily from the Kenai Peninsula to the Shumagin Islands, with a local abundance near the Semidi Islands and Kodiak Island. Baraff et al. (2002) sighted 239 individual fin whales between June and September within Marmot and Chiniak Bay, two large embayments along northeast Kodiak Island. These data suggest that occasional presence within the action area is possible.

4.4.5 North Pacific Right Whale

Status: The north Pacific right whale has been listed as endangered under ESA since its passage in 1973. Critical habitat has been designated for this species on April 8, 2008, but outside of the action area. Two areas were designated—a polygon within the southeast Bering Sea due west of Bristol Bay, and another smaller polygon south of Kodiak Island. The north Pacific right whale is the rarest of the large baleen whales with estimated populations of well under 1,000 individuals (NMFS 2017).

Presence in the Action Area: In July, 2017, one right whale was observed and photographed at Kilokak Rocks in the Gulf of Alaska between Kodiak Island and the Alaska Peninsula (NMFS 2017). Wade et al. (2011) observed local numbers of north Pacific right whales in shelf waters adjacent to Kodiak Island between 1998 and 2010. Whales were also observed in three consecutive years (2004–2006) in late summer, apparently feeding in the Barnabus Trough area on Albatross Bank, south of Kodiak Island. In all three years, the whales were associated with a high-density demersal layer of zooplankton at approximately 175 meters in depth (Wade et al. 2011).

Though a rare species, these observations and data suggest that occasional presence of the species may occur in the action area north of Larsen Island.

4.4.6 Short-tail Albatross

Status: The short-tailed albatross was listed as endangered throughout its range on July 31, 2000. Prior to its exploitation, the short-tailed albatross was possibly the most abundant of the three North Pacific albatross species, ranging throughout most of the North Pacific Ocean and Bering Sea. Millions of these birds were harvested by feather hunters prior to, and following the turn of the 20th century, resulting in the near-extinction of the species by the mid-20th century. In 2008, about 2,400 short-tailed albatross were known to exist, with about 450-500 breeding pairs. The species is known to breed on only two remote islands in the western Pacific. Torishima Island, where nearly 80 percent of the species breeds, is an active volcano (USFWS 2008).

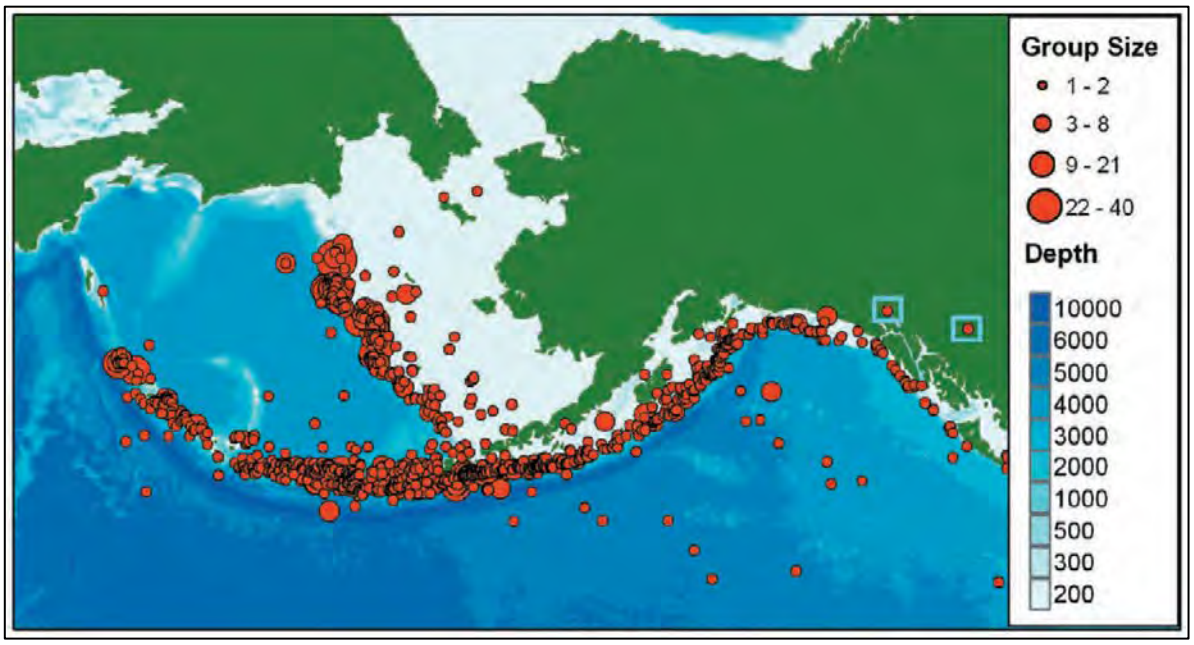
The major threat of over-exploitation that led to the species' original endangered status no longer occurs. The most notable existing threat to the species' recovery is the possibility of an eruption of Torishima, their main breeding site. A minor eruption occurred there in August of 2002, after the end of the breeding season.

Current growth rates for the bird are considered good, estimated at between 5 and 8 percent per year (USFWS 2008).

No critical habitat for the species has been designated.

Presence in the Action Area: Opportunistically collected data in Alaskan waters suggests that short-tailed albatross are closely associated with the offshore continental shelf edge of the Gulf of Alaska and Bering Sea, and along the Aleutian Islands. The largest congregations of short-tailed albatross were reported near the heads of canyons along the Bering Sea shelf (USFWS 2008; **Figure 8**).

Figure 8. Sightings of short-tailed albatross in Alaskan waters from 1940-2004 (n=1,432)



Rare sightings have occurred in Shelikof Strait, 32 miles west of the project area, as well as several sightings in offshore areas east of Kodiak Island (**Figure 8** ; Piat et al. 2006). One documented sighting occurred in 2012, three miles off of Sequel Point south of Cape Grenville southeast of the City of Kodiak (https://lists.alaska.edu/pipermail/alaskabirds-l/2012-September/001670.html). No sightings have occurred in the action area.

Data indicate that this rare bird predominantly occupies offshore open coastal areas of the continental shelf and would not likely occur in the nearshore sheltered areas of the project and action areas.

4.5 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) includes provisions concerning the identification and conservation of Essential Fish Habitat (EFH). The Magnuson-Stevens Act defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The National Marine Fisheries Service (NMFS) and regional fishery management councils must describe and identify EFH in fishery management plans (FMPs), minimize to the extent practicable the adverse effects of projects on EFH, and identify other actions to encourage the conservation and enhancement of EFH. Federal agencies that authorize, fund, or undertake actions that may adversely affect EFH must consult with NMFS, and NMFS must provide conservation recommendations to federal and state agencies regarding actions that would adversely affect EFH. Fishery management councils also have the authority to comment on federal or state agency actions that would adversely affect the habitat, including EFH, of managed species (Simpson et al. 2017).

The North Pacific Fishery Management Council’s FMPs that are relevant to the Anton Larsen Bay Road Extension and Boat Launch project include the Gulf of Alaska Groundfish FMP, the Alaska Salmon FMP, and the Alaska Scallops FMP, the species of which are presented in **Table 8**.

A review of the life history, distribution, and habitat requirements of these species are available from NPFMC 2018a,b, and NPFMC 2014.

Table 8. Species of Fish with Essential Fish Habitat in the Project Area

Species/Species Complex (GOA Groundfish)	Species (Alaska Salmon)
Rockfish Pacific ocean perch (*Sebastes alutus)* Northern rockfish (*S. Polyspinus*) Shortraker/Rougheye rockfish (*S. borealis/ S. aleutianus)* Dusky rockfish (*S. variablis*) Yelloweye rockfish (*S. ruberrimus)* Thornyhead rockfish (*Sebastolobus* spp.)	Pacific Salmon Chinook salmon (*Oncorhynchus tshawytscha*) Chum salmon (*O. keta_* Coho salmon (*O. kistuch*) Pink salmon (*O. gorbuscha*) Sockeye salmon (*O. nerka*)
Pacific cod (Gadus macrocephalus)	Species (Alaska Scallops)
Flatfish Yellowfin sole (*Limanda aspera*) Rock sole (*Pleuronectes bilineata*) Alaska plaice (*Pleuronectes quadrituberculatus*) Dover sole (*Microstomus pacificus*) Greenland turbot (*Reinhardtius hippoglossoides*) Rex sole (*Errex zachirus*) Arrowtooth flounder (*Atheresthes stomias*) Flathead sole (*Hippoglossoides elassodon*)	Weathervane scallop (Patinopecten caurinus*)* Rock scallop (*Crassadoma gigantean*) Pink scallop (*Chlamys rubida*) Spiny scallops (*C. hastata, C. behringiana, and C. albida*)
Walleye pollock (*Gadus chalcogrammus*)	
Sablefish (*Anaplopoma fimbria*)	
Atka mackerel (*Pleurogrammus monopterygius*)	
Skates (Rajidae)	
Other Species Squid (*Loligo opalescens*) Octopus (*Enteroctopus dofleini*) Sharks (Elasmobranchii) Sculpins (Cottidae)	
Forage fish complex	

No site specific fish surveys were identified within the Action Area; however, Mueter and Norcross (2000) evaluated nearshore trawl survey data collected by the Alaska Department of Fish and Game (ADF&G) and NMFS between 1976 and 1995 in seven bays within the Kodiak Archipelago. EFH species including walleye pollock, Pacific cod, and several species of flatfish, rockfish, skates, forage fish, and sculpins were observed in nearshore trawl catches. Walleye pollock, Pacific cod, yellowfin sole, arrowtooth flounder, flathead sole, rock sole, and several species within the sculpin and forage fish complex were the most commonly observed EFH species found in the Kodiak Archipelago **(Table 5)**.

ADF&G also conducted surveys within area streams and found juvenile and adult coho salmon and adult pink salmon in several streams that the proposed road extension would cross, indicating that these water bodies provide EFH for the managed Alaska salmon species (**Figure 6**; ADF&G 2015).

Given the proximity of Crag Point Cove to streams along the road extension route, it is also likely that juvenile salmon rear within the Action Area during the spring juvenile outmigration period.

Commercially dense weathervane scallop beds are located along the east and west coasts of Kodiak Island and commercial fisheries for the species actually began off the island during the mid-1960s. Weathervane scallops are the only scallop species currently commercially managed by the North Pacific Fishery Management Council (NPFMC 2014).

5.0 ANALYSIS OF EFFECTS

This section addresses the effects of the project to listed species. Direct effects are those caused directly by construction or operation of the proposed action. Indirect effects occur separated from the project by time or distance. These could include effects on future food resources and foraging areas. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification (Federal Register 1986). Interdependent actions are those that have no independent utility apart from the action under consideration (Federal Register 1986).

5.1 Habitat Effects

Approximately 3,200 square feet of intertidal and nearshore subtidal benthic habitat would be altered by the construction of the boat launch and float. Approximately 2,400 square feet (150 feet by 16 feet, depending upon grade) of benthic habitat would largely be eliminated by excavation and grading followed by the placement of boat launch concrete slabs (or other solid structures) on the bottom between the OHWM to approximately -6.0 feet MLLW. Some hard substrate algae and epibenthic organisms may colonize the new substrates, but this would likely be reduced as the result of operational use. Another 720 square feet (60 feet by 12 feet) of benthic habitat under the proposed float would be highly altered by shading. By reducing light penetration, primary production in the form of algae community reduction and community structure alterations will likely result. Small areas of high saltmarsh habitat (<100 square feet) composed primarily of *Honckenya peploides* may be eliminated, but these areas are not continuous in the upper intertidal zone so can be avoided to the extent practicable.

Habitat impacts would be minimized to the extent practicable. Project equipment staging will occur entirely in upland areas above the OHWM. Any grading within the intertidal and shallow subtidal zones, during the construction of the boat launch would occur with the use of an excavator from shore. Excavation, grading, and pre-cast concrete planks will be placed at lower tidal elevations, such that placement will occur in the dry or easily reached and placed within shallow subtidal areas from shore. Pile driving will either occur with a shore-mounted pile driver at lower tidal elevations or from a barge-mounted pile driver at higher tidal elevations to minimize disturbance of existing bottom habitats.

5.2 Effects to Listed Species

5.2.1 Direct Effects

5.2.1.1 Northern Sea Otter and Steller Sea Lion

Long-Term Permanent Effects. The proposed boat launch and float installation may have small but permanent direct effects to sea otter habitat by altering 3,120 square feet of shallow water habitat. Approximately 2,400 square feet of benthic habitat would largely be eliminated by the placement of boat launch concrete slabs on the bottom within the intertidal zone and shallow subtidal. Another 720 square feet of benthic habitat under the proposed float would be highly altered by shading. By reducing light penetration, primary and secondary productivity declines which will likely result in decreased macroinvertebrate populations beneath the float that otter feed upon (bivalves, echinoderms, crabs), though species such as crabs may be attracted to the added structure.

Operational direct effects to otters include behavioral avoidance of the boat launch area during launching activities. These would likely be temporary, only occurring during actual vessel launch and retrieval, but could act to drive otters into deeper waters where there is less potential refuge from predators.

These potential permanent adverse effects to northern sea otter are considered discountable given the small disturbance footprint in the project area (3,120 square feet), relative to the entire outer Anton Larsen Bay that otters occupy. During a recent site visit, no otters were observed within the action area cove, but at least 15 occupied the protected embayment bordered by the southern-most shore of Larsen Island and the outer Anton Larsen Bay shore (**Figure 7**). Riedman and Estes (1990) found that sea otters live seaward of the high tide line almost exclusively. They haul out on offshore rocks and islands, but much less often on mainland beaches. The area where otters were located is a shallow, protected area with numerous offshore islets, offshore intertidal reefs, and offshore exposed rocks that provide both shallow foraging habitat and haulout refuge. Within the action area cove, shallow habitats are only associated with the mainland beach; no offshore intertidal exposed areas are present, providing no real haulouts for use by otters.

Any potential adverse permanent effects to Steller sea lions would be considered discountable. The proposed boat launch and float will be located within the intertidal and shallow subtidal habitats of the mainland where sea lions are not expected to occupy. The area has no offshore haulout sites that could be used by sea lions. The small losses of benthic habitat and productivity from the boat launch and alteration of shallow water habitat from the float would have negligible effects to adult fish production that sea lions feed upon.

Short-Term Construction Effects. Short-term direct disturbances to northern sea otter and Steller sea lion may result from pile driving work associated with pile installation and other inwater construction activities. In-water noise associated with pile driving will temporarily elevate noise levels and generate concussive pressure waves that can cause significant injury and behavioral disturbances to ESA-listed marine mammals and seabirds when diving.

The USFWS and NMFS have determined underwater zones of impact that may cause injury to northern sea otter and Steller sea lion within 124 meters of an impact driven pile and within 6 meter of a vibratory driven pile. In-air injury may occur within 32 meter of an impact driven pile. in addition, behavioral disturbances may occur within 224 meters of an impact driven pile (**Figure 3** and

Appendix B). To minimize the underwater noise during pile driving, a vibratory pile driver, which has a much smaller marine mammal zone of injury, would be used for the majority of pile installations. However, an impact pile driver may also be used to proof load each pile.

Pile installation and the potential for injuries would occur over a short period, expected over a two-day period. To further minimize potential adverse effects to otters and sea lions, a marine mammal observer will monitor the zones of impact shown in **Figure 3** over all pile driving periods. Prior to the onset of pile driving, the marine mammal observer will monitor the appropriate injury zones to determine that no sea lions and otters are present, after which pile driving may commence. If a sea lion or otter is seen approaching a zone of injury, the marine mammal observer will notify the pile driving manager to cease all pile driving activities until the animal has moved out of the zone. Since the marine mammal zones of injury for northern sea otter and Steller sea lion are between 6 and 124 meters from the driven pile (**Figure 3**), all monitoring can be easily conducted by a single observer from shore. A marine mammal monitoring plan detailing monitoring procedures and activities will be submitted and approved by the Services (NMFS and USFWS) prior to the commencement of pile driving.

The Services have set a zone of disturbance for the continuous noise generated by a vibratory pile driver at 120 dB. This is more of an ambient background sound level rather than underwater noise associated with the disturbance of marine mammals, so is considered very conservative. Simple underwater sound attenuation models estimate that underwater sounds generated by a vibratory pile driver will attenuate to 120 dB at approximately 45 km from the driven pile, or in this specific case, from shore to shore in outer Anton Larsen Bay (**Figure 4**). ESA-listed marine mammals will be exposed to this noise for approximately 4 hours per day for two days (**Appendix B**). Since this is a conservative disturbance threshold and not an injury threshold based on sound frequencies in which each species group can hear, it is likely that this short exposure period will have negligible effects to ESA-listed marine mammals. This level of exposure will cease after the 2-day pile driving period.

The use of: (1) a vibratory pile driver for the majority of pile driving time, (2) the short two-day pile driving construction period, and (3) the implementation of an agency-approved marine mammal monitoring plan will sufficiently protect northern sea otters and Steller sea lions from underwater and in-air noise that can cause injury from pile driving. The use of these three conservation measures will result in discountable adverse effects to sea otter and sea lions during the boat launch and float construction period.

Critical Habitat – Northern Sea Otter. Table 7 in Section 4.4.1 describes how the action area contains all four PCEs for northern sea otter. **Table 9** describes the potential short-term construction effects and long-term operational effects of the project on each of the PCEs for otters.

Table 9. Project-related effects to Northern Sea Otter Critical Habitat PCEs

Primary Constituent Element	Short-Term Effects	Long-Term Effects
PCE 1 – Shallow, rocky areas where marine predators are less likely to forage—waters <2m deep	Pile driving and launch/float construction may drive otters out of shallow rocky critical habitat associated with the construction footprint over a two day pile driving period or 30-day construction period.	Long-term effects from habitat loss or alteration would be occur over a small project footprint (loss or reduction of benthic productivity over approximately 3,200 square feet), relative to critical habitat within the entire outer Anton Larsen Bay. Critical habitat would still function at a high level. Operational effects would be intermittent—behavioral disturbance, pushing otters out of critical habitat during boat launch usage.
PCE 2 – Nearshore waters that provide protection or escape within 100 m of shore	Pile driving and launch/float construction may drive otters out of shallow rocky critical habitat associated with the construction footprint over a two day pile driving period or 30-day construction period.	Shallow waters are present within 100 m of shore, but no escape/refuge habitats—i.e., offshore intertidal rocks, reefs, or islets—are present in the project/action area. This PCE would not be affected except for intermittent periods of launch use within shallow water associated with the mainland.
PCE 3 – Kelp forest habitats <20 m deep	Short-term construction would have minimal to no effects to this PCE, since most work would occur in waters shallower than most kelp forests inhabit.	Long-term effects would have minimal to no effects to this PCE. Bottom habitat alterations will occur in quite shallow water, outside of kelp forest habitat.
PCE 4 – Sufficient prey resources to satisfy energetic requirements	Short-term construction would have minimal effects to this PCE since the construction period is temporary, lasting a maximum of 30 days.	Long-term effects from habitat loss or alteration would occur over a relatively small project footprint (loss or reduction of benthic productivity). It is unlikely that a measureable loss of productivity in otter prey will occur due to the minor alteration in bottom habitat.

Table 9 indicates that 3 of the 4 PCEs for northern sea otters may be affected by project-related activities. Short-term construction related effects would be minimal because of the relatively small footprint (3,120 square feet) within designated critical habitat, a monitoring program that would allow pile driving activities only when no otters are present within zones of injury, and the relatively short inwater construction period. Long-term, permanent effects from operations would also be minor, because no otter escape, haulout, or refuge habitats (offshore shallow areas) are present within the cove. Nearshore habitats that provide protection or escape (islets, reefs and large offshore rocks) are widely available a short distance outside of the action area (**Figure 7**). This may contribute to the reason why all otter sightings were made off of south Larsen Island outside of the action area.

The analyses provided above lead to the conclusion that the proposed project will result in no net degradation of these PCEs; therefore, existing critical habitat for northern sea otter will remain fully functional to serve the conservation needs of the species.

Critical Habitat – Steller Sea Lion. Short and long-term project-related effects will be localized to the immediate area of the cove near Crag Point. The nearest designated critical habitat for Steller sea lion is on Long Island (haulout), located approximately 21 miles east of the action area. The project will have no effect on the designated critical habitat for this species; therefore, habitats will remain fully functional to serve the conservation needs of the species.

5.2.1.2 ESA-Listed Baleen Whales

Long Term Permanent Effects. Long-term permanent impacts to habitats will be limited to primary and secondary productivity within intertidal and shallow subtidal habitats associated with a small loss or alteration of benthic habitats within the footprint of the boat launch and float. These will have no effect on the offshore habitats and nature of all three species of baleen whales.

Vessel collisions with whales have been identified as a key threat to the recovery of all three ESA listed baleen whales. Vessel strikes that cause mortality or substantial injury are from large cargo ships, tankers, and passenger vessels, such as cruise ships or ferries. Studies have found that vessel strikes that occur when traveling at speeds of 12 knots are likely to cause mortality, and vessel strikes that occur when traveling at 18 knots or greater have always caused mortality (DFO 2017). An increase in vessel usage at the proposed boat launch is expected, but these vessels will be smaller, exclusively trailerable vessels (less than 40 feet) that are not associated with offshore transit, large commercial, or whale watching passenger ships. In addition, the great majority of usage of the proposed boat launch will occur during the winter months when the existing mid-bay launch is iced in. Whale presence in Alaska is much lower during this period, as most migrate to warmer tropical and subtropical areas during the winter months to breed and feed (**Appendix D**). Therefore, the increase in vessel traffic associated with the proposed new boat launch will have discountable effects to the ESA-listed baleen whales.

Short Term Construction Related Effects. The baleen whales belong to the low-frequency hearing group of marine mammals, which are quite sensitive to the underwater noise generated by impact pile driving (NMFS 2018; **Appendix B**). The injury threshold calculated for these whales is approximately 2 miles from the impact driven pile, extending beyond the north end of Larsen Island to offshore shelf habitats (**Figure 4**). For this reason, potential underwater injury associated with impact pile driving will be minimized by conducting most pile driving with a vibratory pile driver, which generates a threshold of effect at only 148 meters from the driven pile. It is estimated that a maximum of 1,500 pile strikes with an impact pile driver will be necessary to proof each pile; therefore, driving a proposed two piles per day will amount to 3,000 total strikes per day. Strike duration is estimated at 0.75 seconds per strike for a total time allotment of 2,250 seconds (75 minutes) of impact pile driving per day (**Appendix B**). Therefore, baleen whales that occupy the zone of impact will only be exposed to underwater noise above thresholds of injury for 75 minutes per day for two days. Since the action area for impact pile driving is not known as an area highly used by of the ESA-listed baleen whales, the potential for exposure over this 75 minute period would be negligible.

In the unlikely event that the ESA-listed baleen whales approach the 148 meter zone of injury during vibratory pile driving, they will easily be seen by marine mammal observers that monitor the area during all pile driving activities. If any ESA-listed baleen whales are observed approaching the 148 meter zone of injury (**Figure 3**), pile driving will cease until the animal(s) has vacated the zone, thus preventing exposure.

The zone of disturbance for baleen whales extends from shore to shore in outer Anton Larsen Bay (**Figure 4**). It is estimated that baleen whales may hear continuous noise from a vibratory pile driver within this zone. Injury has not been associated with the 120 dB disturbance threshold, and it is not known if baleen whales will be impacted by the disturbance. Vibratory pile driving will occur over a 4 hour period for 2 days, making the level of exposure short and likely negligible

Given the implementation of these conservation measures and the very short pile driving construction period, short-term construction related effects will be discountable.

Critical Habitat – North Pacific Right Whale. For the ESA-listed baleen whales, critical habitat has only been designated for the north Pacific right whale and is well beyond the action area of the project. Critical habitat is limited to two polygons located within the southeastern Bering Sea and areas south of Kodiak Island (**Appendix C**). The project will have no effect on the designated critical habitat for north Pacific right whale; therefore, habitats will remain fully functional to serve the conservation needs of the species.

5.2.1.3 Short-tailed Albatross

Long-Term Permanent Effects. It is highly unlikely that permanent effects generated by the construction and operation of the boat launch and float (loss and alteration of benthic habitat in the footprint) will adversely affect short-tailed albatross because of the offshore nature of the species. This seabird most often occupies offshore areas of the continental shelf of the Gulf of Alaska and Bering Sea (**Figure 8**; Piatt et al. 2006). The most recent sighting near Kodiak Island was 3 miles off the eastern shore of the island, approximately 25 miles east of the project area. Historical sightings in the Shelikof Strait are also over 30 miles from the project area. Short-term direct effects will therefore be negligible.

Short-Term Construction-Related Effects. Underwater noise generated by pile driving will be minimized by conducting most of the pile installation using a vibratory pile driver. There is no evidence that a vibratory pile driver adversely affects sea birds. The concussive pressure waves generated by an impact pile driver will be minimized by using this method only for load proofing of piles after vibratory installation (75 minutes per day for two days). Further, a bubble curtain will also be used to attenuate underwater noise.

Underwater noise thresholds have not been determined for short-tailed albatross, but have been for marbled murrelet, which is ESA-listed on the west coast of Washington, Oregon, and California. Using model inputs for 24-inch diameter piles and the NMFS practical spreading loss model, auditory injury is predicted to occur at 21 meters from the driven pile (**Appendix B**). It is highly unlikely that short-tailed albatross would venture this close to shore. Therefore, short-term direct effects to short-tailed albatross will be negligible.

Critical Habitat – Short-tailed Albatross. Critical habitat has not been designated for this species.

5.2.2 Indirect Effects

5.2.2.1 Northern Sea Otter, Steller Sea Lion, and Baleen Whales

Construction activities, in the form of increased inwater noise and turbidity, have the potential to adversely affect forage fish and juvenile salmonids in the project area, both of which occupy the marine nearshore. The forage species Pacific herring is part of the prey base for northern sea otter,

humpback whale, and fin whale, while both herring and adult salmon are prey of Steller sea lions. Injury and disturbances of forage fish and juvenile salmonids may result from pile driving activity during construction of the boat launch and float. North Pacific right whales generally feed on zooplankton, so would not be subject to the indirect effects of prey supply.

Using the NMFS practical spreading loss model for impact pile driving, physical injury to fish from a single attenuated (6 dB using a bubble curtain) pile strike was calculated at 5 meters from the driven pile. The injury zone for the estimated 3,000 accumulated pile strikes per day that would occur was calculated at 208 meters for fish smaller than 2 grams and 293 meters for fish larger than 2 grams (**Appendix B**). This is consistent with observations during actual pile driving operations. Impact driving of 24-inch diameter steel piles in 2002 at a ferry terminal in Puget Sound, Washington resulted in the observed fish kills of sea perch (Embiotocidae). Similar or larger piles driven by an impact hammer at the Port of Seattle, Washington resulted in observed fish kills of Pacific herring.

However, Ruggerone et al. (2008) found no mortality with juvenile coho salmon in live cages exposed to over 1,600 pile strikes with an impact hammer of 20-inch diameter steel piles. Live cages were placed from 1.8 to 6.7 meters from the pile being driven. No visible sublethal effects were observed in fish held up to 19 days after exposure. Necropsies found no gross external or internal injuries with pile driving.

Turbidity would likely exceed background levels as a result of any intertidal excavation/grading during boat launch construction. This increase is expected to be highly localized, taking place over a short period during and immediately after work activities. Juvenile salmon have been shown to avoid areas of unacceptably high turbidities (Servizi 1988), although they may seek out areas of moderate turbidity (10 to 80 nephelometric turbidity units [NTU]), presumably as cover against predation (Cyrus and Blaber 1987a and 1987b). Feeding efficiency of juveniles is also impaired by turbidities in excess of 70 NTU, well below sub-lethal 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 per liter [mg/L] suspended sediments). However, Chinook salmon exposed to 650 mg/L of suspended volcanic ash were still able to migrate to their natal water (Whitman et al. 1982). Salmonids in close proximity to excavation/grading are likely to experience behavioral effects from turbidity-related construction.

Based on these observations and studies, forage fish and salmonids may be subject to some level of injury to those fish within an impact zone of approximately 200 to 300 meters; particularly forage fish that are fed upon by otters, sea lions, and whales. There is also evidence to suggest that similar adverse effects are less likely to occur to salmon during their juvenile stages, and so may have less effect on adult productivity and any reduction in potential prey to sea lions. Given the short pile driving construction period of two days, total impact pile driving time of 75 minutes per day, and the zone of impact of under 300 meters from the driven piles, it is likely that the potential indirect effects to prey species to northern sea otter, Steller sea lion, humpback whale, and fin whale will be unmeasurable or discountable.

Similarly, turbidity effects would be temporary, occurring over the 7-day period of excavation/grading of the intertidal zone and laying of pre-cast concrete planks. These effects would be limited to the approximate area of the boat launch footprint, anticipated to be less than 1,000 square feet. Given the small and temporary area of impact, potential effects from the avoidance of

juvenile salmonids or forage fish species on adult forage fish and salmonid production will to be discountable and unmeasurable.

5.2.2.2 Short-tailed Albatross

No indirect effects are anticipated to occur from short-term construction or long-term nearshore habitat effects or operations for this offshore seabird species.

5.2.3 Essential Fish Habitat

This analysis documents consultation under the Magnuson-Stevens Act of 1996. Public Law 104-267, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) to (1) establish new requirements for Essential Fish Habitat (EFH) descriptions in Federal Fishery Management Plans, and (2) to require federal agencies to consult with National Marine Fisheries Service (NMFS) on activities that may adversely affect EFH. The MSFCMA requires consultation with the NMFS on activities that may affect EFH, defined as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH includes marine waters, intertidal habitats, and freshwater streams accessible to anadromous fish. Pacific salmon EFH for the Pacific Coast Salmon Plan includes all streams, lakes, ponds, wetlands, and other water bodies currently and historically utilized by Pacific salmon within Washington, Oregon, Idaho, and California.

The MSFCMA promotes the protection of these habitats through review, assessment, and mitigation of activities that may adversely affect these habitats. This analysis satisfies the consultation requirements by providing a description and assessment of EFH in the action area, a description of the project and its potential impacts to these habitats, and a description of the mitigation measures that would be implemented to protect these habitats, if necessary.

5.2.3.1 Marine EFH

Effects to EFH within the marine environment will be minor, in the form of alteration of benthic habitats (2,400 square feet) from the placement of pre-cast concrete planks for the boat launch, and alteration of aquatic habitat (720 square feet) through shading from float placement. Habitat alteration will occur in the intertidal zone and shallow littoral zone from the OHWM to approximately -6.0 feet MLLW.

These alterations will likely lower benthic, primary, and secondary productivity by a small and unmeasurable amount. The temporary displacement of the juvenile life stages of nearshore EFH fish species such as juvenile salmonids, yellowfin sole, and rock sole may occur during the short construction period (30 days). No net loss of marine habitats of the state will occur with boat launch/float construction or operations.

5.2.3.2 Stream EFH

ADF&G conducted sampling within streams that the proposed Anton Larsen Bay Road extension would cross during the summer and fall of 2015 to determine if an ADF&G Fish Habitat Permit would be required for the project (ADF&G 2015). Alaska EFH coho and pink salmon were observed in the Chalet Creek basin and Small Creek, both of which the proposed road extension would cross. Both adult coho and pink salmon were observed to be spawning in the mainstem Chalet Creek. Juvenile coho salmon were also observed in the mainstem and one tributary of the stream (**Figure 6**)

Numerous spawning pink salmon were also observed in Small Creek (estimated at 900 fish), which also crosses the proposed road extension. These fish were spawning above two perched culverts that are likely a barrier to juvenile fish (ADF&G 2015; **Figure 6**).

Both of these stream basins would be considered EFH for Alaska salmon species. Bridge and culvert replacement would cause temporary periods of increased turbidity during the construction period. Timing BMPs would minimize potential effects to spawning pink and coho salmon, but juvenile coho generally rear in streams for over a year, so may be directly exposed to temporary periods of turbidity and disturbance during culvert and bridge replacements. Juvenile pink salmon outmigrate to estuarine areas soon after emergence from redds, so timing BMPs minimize exposure to these juvenile fish. Spawning and rearing habitats in Small Creek may benefit from perched culvert removal and replacement, providing upstream access for pink salmon during a wider flow regime in this stream.

Culvert and bridge design will follow FHA guidelines presented in USFWS (2018) which will likely improve habitats and access for fish in both basins. Using the proper design guidelines and BMPs during construction, effects to EFH will be minimal during the temporary construction period and improved after replacement.

5.2.4 Interdependent and Interrelated Actions or Activities

Interrelated actions are those that are part of the larger action and dependent on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. No interdependent or interrelated actions or activities associated with the project are known at this preliminary design phase.

5.2.5 Cumulative Effects

Under the ESA, the cumulative effects of future state, Alaskan Native Corporation, local, and/or private actions that are reasonably certain to occur within the project area must be considered as part of the analysis of effects. No such specific activities have been identified in the action area.

6.0 DETERMINATION OF EFFECT

This BA provides an analysis of the project effects on listed species. Information from site visits and species information obtained from available literature, and state and federal agencies, was used to establish the following finding of effects.

Northern Sea Otter: The proposed project **may affect** northern sea otter for the following reasons:

- Northern sea otters may be present within the action area during pile driving activities and may be temporarily driven out of existing shallow water habitat of the Crag Point Cove;
- Northern sea otters may be present during boat launch operations and may be disturbed temporarily and intermittently during vessel launches and retrievals; and
- Protected shallow water habitats are present within the action area, although no offshore haulouts and refuge are present; but is **not likely to adversely affect** northern sea otters for the following reasons**:**
- Pile driving activities will take place over only a two day period until completed;

- Construction activities other than pile driving (boat launch/float construction) will not exceed the in-air criteria for northern sea otter
- A marine mammal monitoring program will be implemented during the entire pile driving period. Marine mammal observers will shut down pile driving activities if otters approach calculated zones of impact to minimize or prevent underwater or in-air noise exposure
- During recent surveys, otters were not observed in the action area, but were moderately abundant outside of the action area where habitat attributes are more favorable to otters (offshore islets and intertidal reefs for haulout and refuge); and
- Operational use of the boat launch is expected to be temporary and intermittent, active only during actual vessel launch and retrieval. During normal use, in-air or underwater noise will not exceed criteria for injury or disturbance.

Northern Sea Otter Designated Critical Habitat: The proposed project **may affect**, northern sea otter DCH for the following reasons:

- Northern sea otter DCH is present within the action area; and
- Boat launch and float construction will alter existing DCH by eliminating benthic habitat with the placement of concrete planks on the bottom and shading of aquatic habitats by float construction, potentially affecting primary and secondary production over a small area within the intertidal and shallow littoral zone;

but is **not likely to adversely affect** northern sea otter DCH for the following reasons:

- Benthic and aquatic habitat altered by boat launch and float construction will be limited to a relatively small area of 3,120 square feet within DCH. Adverse effects to DCH will likely be unmeasurable and discountable.
- Altered benthic and aquatic habitat will be limited to mostly intertidal areas close to shore between OHWM to approximately -6.0 feet MLLW. Though considered shallow water DCH, otters do not often frequent the intertidal shoreline unless associated with offshore reefs, rocks, and islets, which are considered important DCH for haulout and refuge against predators;
- Offshore haul-out and refuge habitats used by otters are not present within the action area.

Steller Sea Lion: The proposed project **may affect**, Steller sea lions for the following reasons:

- Although not observed in the Action Area, surveys have found a relatively abundant population of Steller sea lions in the Kodiak archipelago; given their mobility, they may have occasion to enter the Action Area;
- Sea lions may be present during pile driving activities and may be temporarily driven out of existing shallow water habitat of the Crag Point Cove; and
- Sea lions may be present during boat launch operations and may be disturbed temporarily and intermittently during vessel launches and retrievals; but is **not likely to adversely affect** Steller sea lion for the following reasons:
- Pile driving activities will take place over only a two day period until completed;
- Construction activities other than pile driving (boat launch/float construction) will not exceed the in-air criteria for Steller sea lions

- A marine mammal monitoring program will be implemented during the entire pile driving period. Marine mammal observers will shut down pile driving activities if sea lions approach calculated zones of impact to minimize or prevent underwater or in-air noise exposure
- Operational use of the boat launch is expected to be temporary and intermittent, active only during actual vessel launch and retrieval. During normal use, in-air or underwater noise will not exceed criteria for injury or disturbance.

Steller Sea Lion Designated Critical Habitat: The proposed project will have **no effect** on Steller sea lion DCH for the following reasons:

- Only one DCH haulout (Long Island), is present inside of the 23 mile radii of DCH haulouts, located approximately 21 miles from the action area by water, off the east coast of Kodiak Island.
- The DCH haulout is geographically removed from the Action Area. In order to reach Long Island from the Action Area, sea lions would have to travel north around the northern tip of Kodiak Island then southeast through the channel separating Kodiak and Spruce islands, then offshore of the east Kodiak coast to reach the island.
- In sea lion surveys conducted over a 4 year period, no Steller sea lions were observed on Long Island.

Humpback Whale, Fin Whale, and North Pacific Right Whale: The proposed project **may affect**, ESA-listed baleen whales for the following reasons:

- The action area for baleen whales extends out onto the Kodiak archipelago shelf nearly three miles from the proposed project footprint; while they have not been documented in this area, humpback and fin whales have been found in other areas of the archipelago such as Marmot and Chiniak bays. Right whales have been found near Kilokok Rocks
- Within this action area, baleen whales may be exposed to injury inducing impact pile driving but is **not likely to adversely affect** ESA-listed baleen whales for the following reasons:
- These offshore species are highly unlikely to be affected by the permanent habitat effects of the project, all of which occur within the intertidal zone and shallow subtidal (small alteration of benthic habitats).
- Operationally, the new boat launch will increase vessel traffic in the area, but use will be limited to vessels less than 40 feet in length. Vessel strikes that cause substantial injury and mortality to ESA-listed whales are larger commercial cargo, passenger, and tanker vessels, which cannot use the proposed launch.
- With proposed conservation measures in place, exposure to impact pile driving noise would be brief, only occurring for approximately 75 minutes per day for two days. The zone of impact of outer Larsen Bay is not known for baleen whale presence. The likelihood of ESA-listed whales occupying the zone of impact over this brief period would be remote.
- Exposure to vibratory pile driving injury noise is highly unlikely since the zone of impact is well within the cove and 150 meters of the shoreline. In the unlikely event that whales do approach this zone of impact, they would be observed by marine mammal observers who would stop pile driving activities until the animal(s) vacate the area.

North Pacific Right Whale Designated Critical Habitat: the proposed project will have **no effect** on north Pacific right whale DCH because the two areas of DCH are far removed from the project action area. DCH is located in the southeastern Bering Sea and in open ocean areas south of Kodiak Island.

Short-tailed Albatross: The proposed project will have **no effect** on short-tailed albatross for the following reasons:

- The species resides in open offshore areas of the continental shelf of the Bering Sea and Gulf of Alaska;
- Sightings near Kodiak Island have been limited to offshore of the east Kodiak coast within outer Cook Inlet and offshore of the west coast within Shelikof Strait. Both areas are 20 to 30 miles from the Action Area;

Short-tailed Albatross Designated Critical Habitat: Critical habitat has not been designated for short-tailed albatross.

Essential Fish Habitat: In-water work on this project will create short term and long term effects to marine EFH within the intertidal and shallow littoral zones over a small area (3,120 square feet of benthic habitat alteration), such that effects to EFH productivity will be unmeasurable. In addition, short-term effects to freshwater stream EFH in the form of localized turbidity plumes will occur to EFH in the Chalet and Small Creek basins during the replacement of culverts and bridges at road extension stream crossings. These effects will be minimized by the implementation of timing and discharge BMPs. Long-term effects to stream EFH will likely be beneficial, increasing access to areas upstream of road crossings. Because EFH alterations will occur to only minor amounts of marine EFH, limited to shoreline areas, the proposed project will have **no adverse effect** on EFH.

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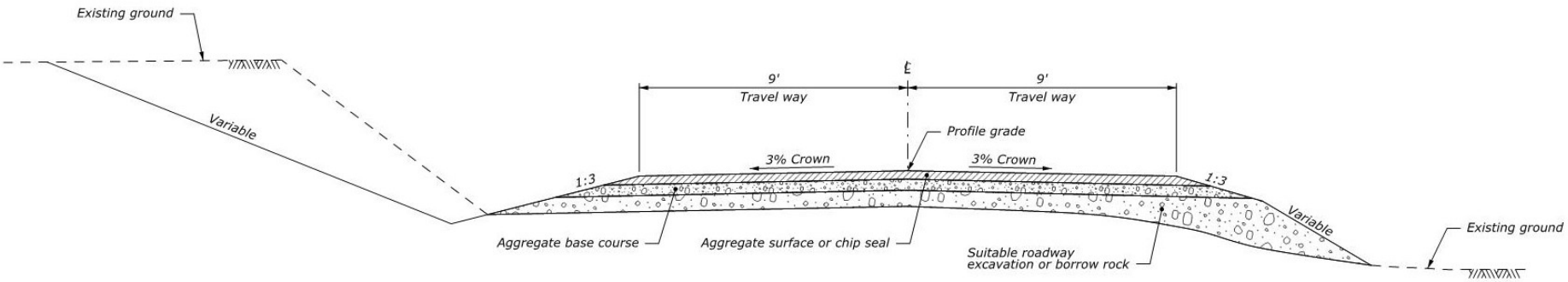
APPENDICES

Appendix A. Sheets



TYPICAL SECTION

(NTS)

Anton Larsen Bay Road Extension Project, Kodiak Island, AK

Sheet 1

Typical Section - Road Extension

DAVID EVANS AND ASSOCIATES INC.

U.S.Department of Transportation

Federal Highway Administration

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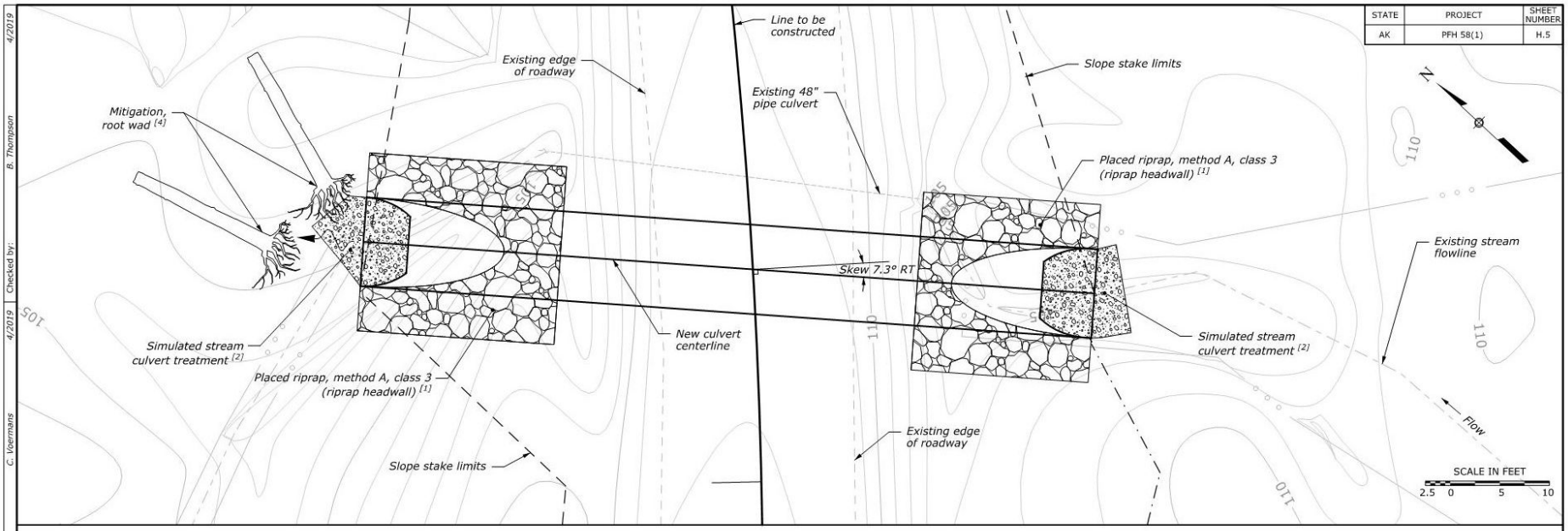
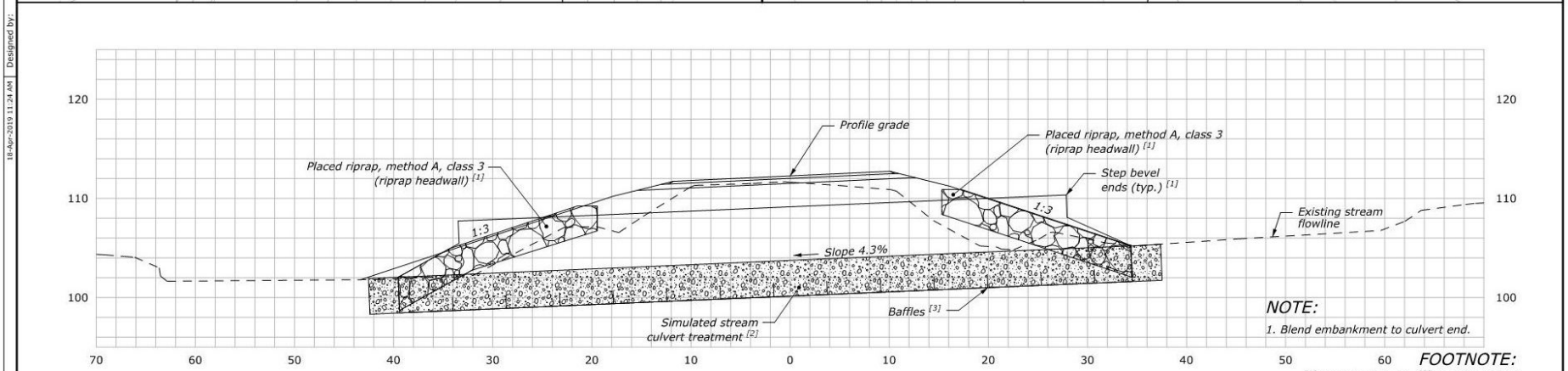
STATE	PROJECT	SHEET NUMBER
AK	PFH 58(1)	H.5





NOTE:

1. Blend embankment to culvert end.

FOOTNOTE:

[1] See Sheet H.19. [3] See Sheet H.23.
[2] See Sheet H.21. [4] See Sheet H.22.

HYDRAULIC INFORMATION	PIPE	INLET	OUTLET
Q_2 : 18.1 cfs; HW_{50} : 106.68 ft	TYPE: ROUND CAP; SPAN: 9 ft; RISE: 9 ft	INV N/E/EL: 1555867.16/2782992.40/101.62	INV N/E/EL: 1555924.68/2782945.95/98.45
Q_{50} : 69.3 cfs	LENGTH: 74 ft; WALL THICKNESS: 0.164 in	BURIAL DEPTH: 3.60 ft	BURIAL DEPTH: 3.60 ft
Q_{HP} : 7.2 cfs	PIPE SLOPE: 0.043 ft/ft; CORRUGATIONS: 3" x 1"	LOWER BEVEL HEIGHT: 3.60 ft	LOWER BEVEL HEIGHT: 3.60 ft
BANKFULL CHANNEL WIDTH: 7 ft	FLOWLINE SLOPE: 0.043 ft/ft	BEVEL: STEP, 2(h):1(v)	BEVEL: STEP, 2(h):1(v)
FISH SPECIES: CT, DV		HEADWALL: RIPRAP	HEADWALL: RIPRAP

Designed by: C. Voermans | Checked by: B. Thompson | 4/2019 | 18-Apr-2019 11:24 AM | ...\af05801_eb.dgn [US_Sur_ft2D]

Anton Larsen Bay Road Extension Project, Kodiak Island, AK

DAVID EVANS AND ASSOCIATES INC.

U.S.Department of Transportation
Federal Highway Administration

Sheet 2
Plan and Section - Stream Culvert Crossings

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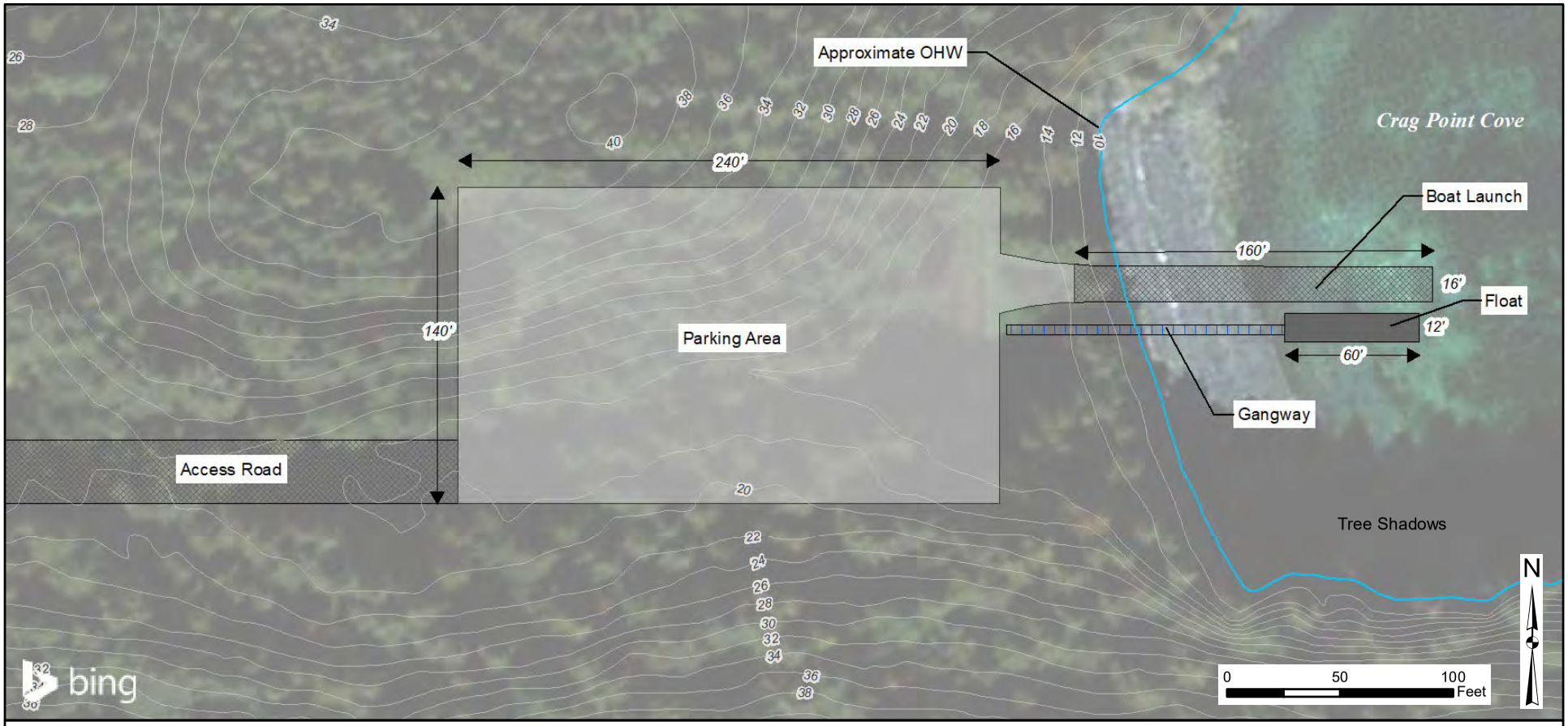

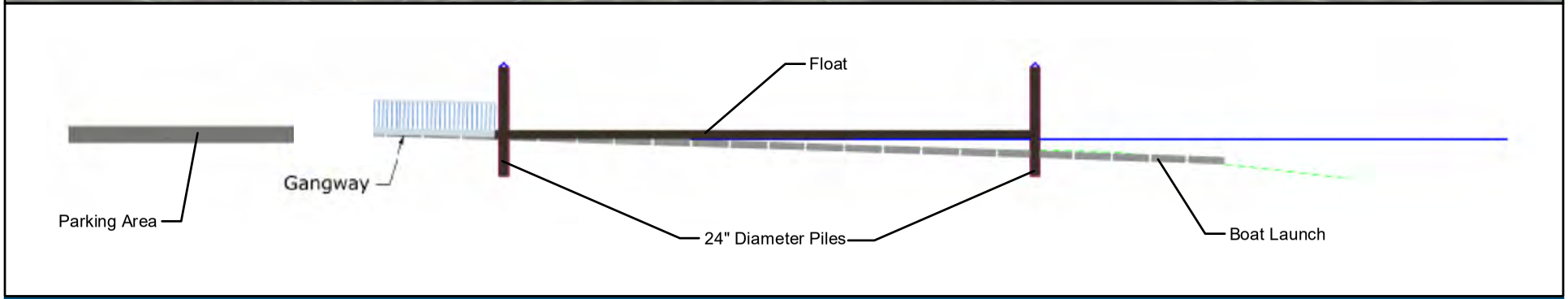

Anton Larsen Bay Road Extension Project, Kodiak Island, AK

DAVID EVANS AND ASSOCIATES INC.

U.S.Department of Transportation
Federal Highway Administration

Sheet 3
Planview Concept of Boat Launch, Float, and Parking Area

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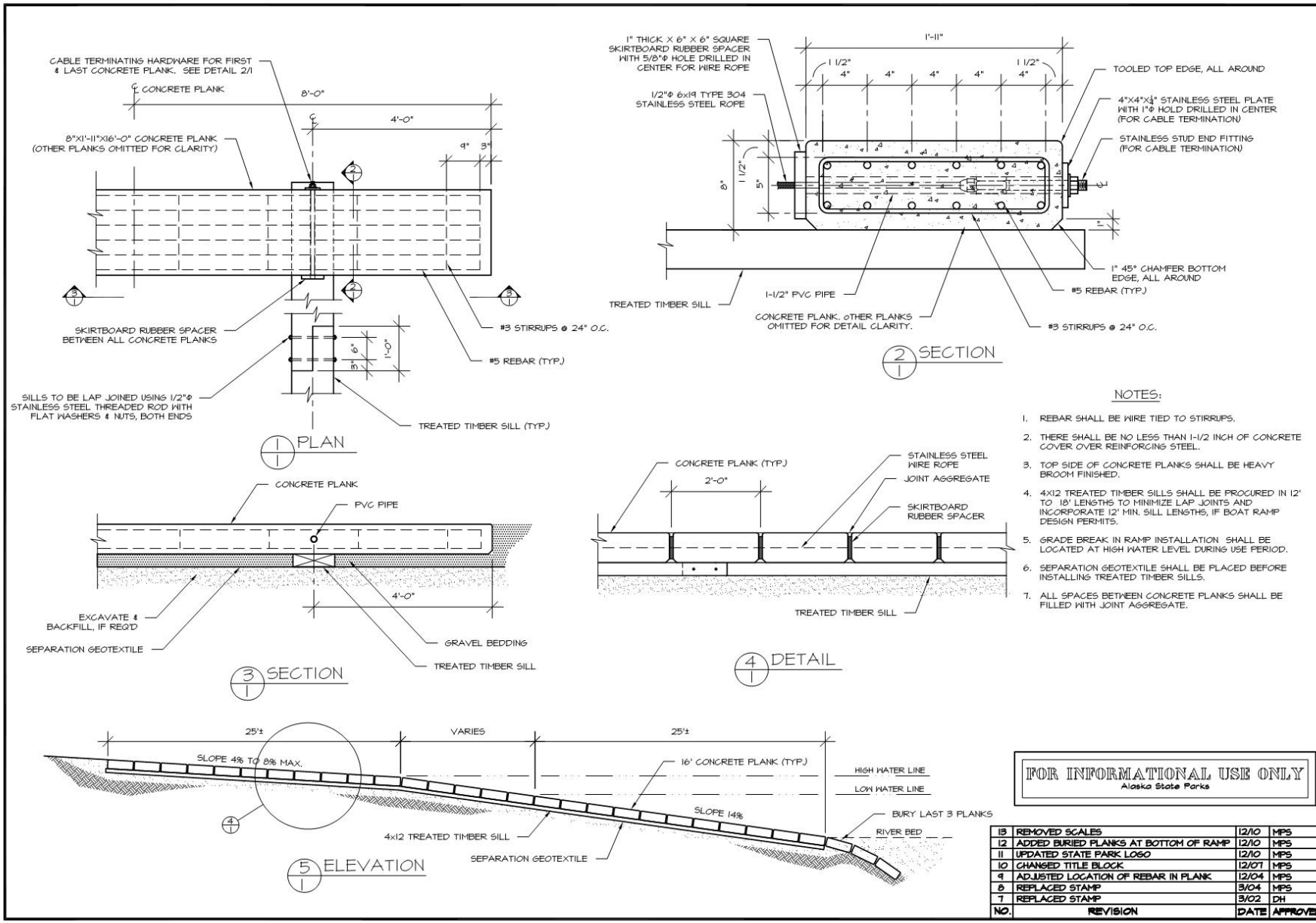

NO.	REVISION	DATE	APPROVED
13	REMOVED SCALES	12/10	MPS
12	ADDED BURIED PLANKS AT BOTTOM OF RAMP	12/10	MPS
11	UPDATED STATE PARK LOGO	12/10	MPS
10	CHANGED TITLE BLOCK	12/07	MPS
9	ADJUSTED LOCATION OF REBAR IN PLANK	12/04	MPS
8	REPLACED STAMP	3/04	MPS
7	REPLACED STAMP	3/02	DH

Anton Larsen Bay Road Extension Project, Kodiak Island, AK

Sheet 4

Typical Boat Launch Design

DAVID EVANS AND ASSOCIATES INC.

ALASKA STATE PARKS

ALASKA DEPARTMENT OF NATURAL RESOURCES

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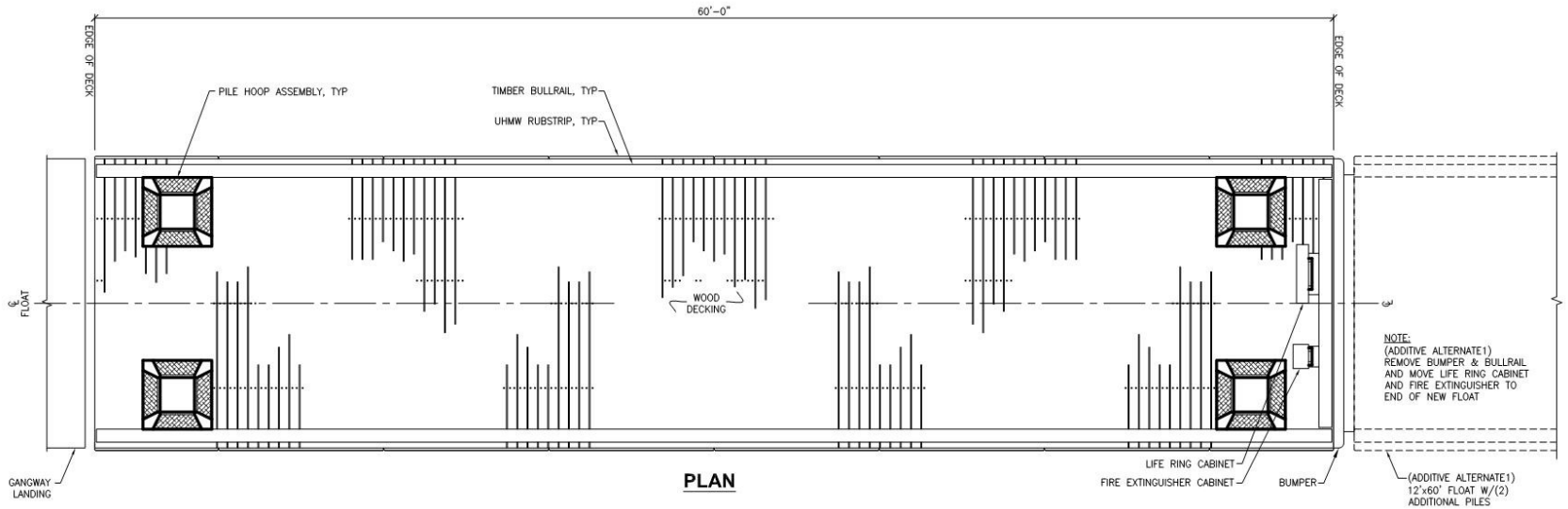
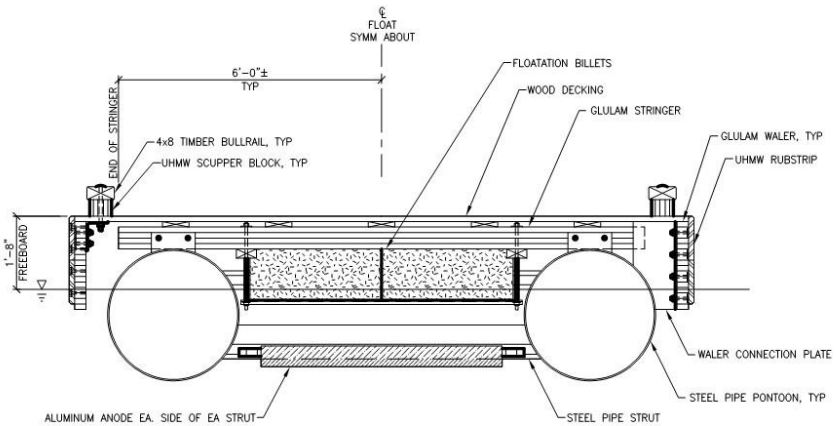


PLAN



TYPICAL SECTION

CONCEPT LEVEL ROM CONSTRUCTION COST ESTIMATE

1	MOBILIZATION/DEMOBILIZATION	LS	1	400,000	400,000
2	CONSTRUCTION SURVEY	LS	1	25,000	25,000
3	FLOAT (12 X 60 FEET)	SF	720	250	180,000
4	GANGWAY LANDING FLOAT	SF	120	250	30,000
5	LIFE RING AND FIRE EXTINGUISHER CABINETS	LS	1	2,500	2,500
6	PILES(24" SOCKETED)	EA	4	40,000	160,000
7	MOMENT FRAME (BETWEEN PILE)	EA	2	10,000	20,000
8	GANGWAY	FT	80	1,600	128,000
9	GANGWAY FOUNDATION	LS	1	25,000	25,000
10	REMOVE/DISPOSE EXISTING PILES	EA	4	6,000	24,000
11	REMOVE/DISPOSE EXISTING FLOAT & GANGWAY	LS	1	15,000	15,000
12	REMOVE/DISPOSE EXISTING GANGWAY FOUNDATION	LS	1	5,000	5,000
	SUBTOTAL				1,014,500
13	PROJECT CONTINGENCY (20%)	LS	1		202,900
	TOTAL CONSTRUCTION COST				1,217,400
	ADDITIVE ALTERNAVE FLOAT EXTENSION	Unit	Quantity	Unit Cost	Total Cost
14	FLOAT (12 X 60 FEET)	SF	720	250	180,000
15	PILES (24" SOCKETED)	EA	2	40,000	80,000
16	MOMENT FRAME (BETWEEN PILE)	EA	1	10,000	10,000
	SUBTOTAL				270,000
17	ADDITIVE ALTERNATE CONTINGENCY (20%)				54,000
	TOTAL ADDITIVE ALTERNATE FLOAT				324,000
	TOTAL CONSTRUCTION COST WITH ADDITIVE ALTERNATE FLOAT				1,541,400

Anton Larsen Bay Road Extension Project, Kodiak Island, AK

Sheet 5

*Plan**, Section,** and Concept Cost Estimate for 60 ft Float*

DAVID EVANS AND ASSOCIATES INC.

PND ENGINEERS, INC.

Appendix B. Underwater Sound Calculations

E.1: IMPACT PILE DRIVING (STATIONARY SOURCE: Impulsive, Intermittent)

VERSION 2.0: 2018

KEY

	User Provided Information
	NMFS Provided Information (Technical Guidance)
	Resultant Isopleth

STEP 1: GENERAL PROJECT INFORMATION

PROJECT TITLE	Anton Larson Bay Road Extension/Boat Launch Project
PROJECT/SOURCE INFORMATION	Jones and Stokes 2009, updated 2012

Please include any assumptions

PROJECT CONTACT	Jim Starkes, David Evans & Associates

STEP 2: WEIGHTING FACTOR ADJUSTMENT

		Specify if relying on source-specific WFA, alternative weighting/dB adjustment, or if using default value
Weighting Factor Adjustment (kHz)¥	2	

¥ Broadband: 95% frequency contour percentile (kHz) OR Narrowband: frequency (kHz); For appropriate default WFA: See INTRODUCTION tab

† If a user relies on alternative weighting/dB adjustment rather than relying upon the WFA (source-specific or default), they may override the Adjustment (dB) (row 75), and enter the new value directly. However, they must provide additional support and documentation supporting this modification.

* BROADBAND Sources: Cannot use WFA higher than maximum applicable frequency (See GRAY tab for more information on WFA applicable frequencies)

STEP 3: SOURCE-SPECIFIC INFORMATION

NOTE: Choose either E1-1 OR E.1-2 method to calculate isopleths (not required to fill in sage boxes for both)

E.1-1: METHOD TO CALCULATE PK AND SEL_{cum} (USING RMS SPL SOURCE LEVEL)

SEL_{cum}

Source Level (RMS SPL)	187
Number of piles per day	2
Strike Duration[A] (seconds)	0.75
Number of strikes per pile	1500
Duration of Sound Production (seconds)	2250
10 Log (duration of sound production)	33.52
Propagation (xLogR)	15
Distance of source level measurement (meters)*	10

[A]Window that makes up 90% of total cumulative energy (5%-95%) based on Madsen 2005

*Unless otherwise specified, source levels are referenced 1 m from the source.

PK

Source Level (PK SPL)	206
Distance of source level measurement (meters)*	10
Source level at 1 meter	221.0

*Unless otherwise specified, source levels are referenced 1 m from the source.

NOTE: The User Spreadsheet tool provides a means to estimates distances associated with the Technical Guidance's PTS onset thresholds. Mitigation and monitoring requirements associated with a Marine Mammal Protection Act (MMPA) authorization or an Endangered Species Act (ESA) consultation or permit are independent management decisions made in the context of the proposed activity and comprehensive effects analysis, and are beyond the scope of the Technical Guidance and the User Spreadsheet tool.

RESULTANT ISOPLETHS*

*Impulsive sounds have dual metric thresholds (SELcum & PK). Metric producing largest isopleth should be used.

Hearing Group	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
SEL_{cum} Threshold	183	185	155	185	203
PTS Isopleth to threshold (meters)	3,168.5	112.7	3,774.2	1,695.7	123.5
PK Threshold	219	230	202	218	232
PTS PK Isopleth to threshold (meters)	1.4	NA	18.5	1.6	NA

A.1: Vibratory Pile Driving (STATIONARY SOURCE: Non-Impulsive, Continuous)

VERSION 2.0: 2018

KEY

	User Provided Information
	NMFS Provided Information (Technical Guidance)
	Resultant Isopleth

STEP 1: GENERAL PROJECT INFORMATION

PROJECT TITLE	Anton Road Extension/Boat Launch
PROJECT/SOURCE INFORMATION	Jones and Stokes 2009, updated 2012

Please include any assumptions

PROJECT CONTACT	Jim Starkes, David Evans & Associates

STEP 2: WEIGHTING FACTOR ADJUSTMENT

		Specify if relying on source-specific WFA, alternative weighting/dB adjustment, or if using default value
Weighting Factor Adjustment (kHz)¥	2.5	

¥ Broadband: 95% frequency contour percentile (kHz) OR Narrowband: frequency (kHz); For appropriate default WFA: See INTRODUCTION tab

† If a user relies on alternative weighting/dB adjustment rather than relying upon the WFA (source-specific or default), they may override the Adjustment (dB) (row 48), and enter the new value directly. However, they must provide additional support and documentation supporting this modification.

* BROADBAND Sources: Cannot use WFA higher than maximum applicable frequency (See GRAY tab for more information on WFA applicable frequencies)

STEP 3: SOURCE-SPECIFIC INFORMATION

Source Level (RMS SPL)	175
Number of piles within 24-h period	2
Duration to drive a single pile (minutes)	120
Duration of Sound Production within 24-h period (seconds)	14400
10 Log (duration of sound production)	41.58
Propagation (xLogR)	15
Distance from source level measurement (meters)*	10

*Unless otherwise specified, source levels are referenced 1 m from the source.

NOTE: The User Spreadsheet tool provides a means to estimates distances associated with the Technical Guidance's PTS onset thresholds. Mitigation and monitoring requirements associated with a Marine Mammal Protection Act (MMPA) authorization or an Endangered Species Act (ESA) consultation or permit are independent management decisions made in the context of the proposed activity and comprehensive effects analysis, and are beyond the scope of the Technical Guidance and the User Spreadsheet tool.

RESULTANT ISOPLETHS

Hearing Group	Low-Frequency Cetaceans	Mid-Frequency Cetaceans	High-Frequency Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds
SEL_{cum} Threshold	199	198	173	201	219
PTS Isopleth to threshold (meters)	147.6	13.1	218.2	89.7	6.3

Model last updated January 26, 2009

Project Title	Anton Larsen Bay Road Extension BA
Pile information (size, type, number, pile strikes, etc.)	Two, 24-inch piles driven per day; 3,000 strikes per day

Fill in green cells: estimated sound levels and distances at which they were measured, estimated number of pile strikes per day, and transmision loss constant.

	Acoustic Metric			
	Peak	SEL	RMS	Effective Quiet
Measured single strike level (dB)	**201**	172	188	150
Distance (m)	**10**	10	10	

Estimated number of strikes	**3000**

Cumulative SEL at measured distance
207

	Distance (m) to threshold			
	Onset of Physical Injury			Behavior
	Peak	Cumulative SEL dB**		RMS
	dB	Fish ≥ 2 g	Fish < 2 g	dB
Transmission loss constant (15 if unknown)	206	187	183	150
15	5	208	293	3415

** This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet)

Notes (source for estimates, etc.)
(This model was last updated January 26, 2009)

Appendix C. NMFS-USFWS Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Anchorage Fish And Wildlife Conservation Office
4700 Blm Road
Anchorage, AK 99507
Phone: (907) 271-2888 Fax: (907) 271-2786

In Reply Refer To:
Consultation Code: 07CAAN00-2019-SLI-0005
Event Code: 07CAAN00-2019-E-00010
Project Name: Anton Larsen Bay Road Extension

October 02, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and some candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Please note that candidate species are not included on this list. We encourage you to visit the following website to learn more about candidate species in your area: http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate_conservation.htm

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Anchorage Fish And Wildlife Conservation Office
4700 Blm Road
Anchorage, AK 99507
(907) 271-2888

Project Summary

Consultation Code: 07CAAN00-2019-SLI-0005

Event Code: 07CAAN00-2019-E-00010

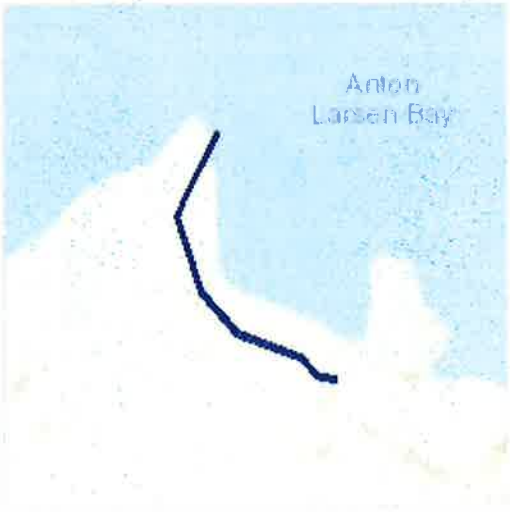
Project Name: Anton Larsen Bay Road Extension

Project Type: Federal Grant / Loan Related

Project Description: The project is an approximate 2 mile road extension connecting an existing road with Crag Point, on Anton Larson Bay. A boat launch, float, and parking area is also proposed at on the shore of Anton Larson Bay. The purpose of the project is to improve a year-round transportation link between outlying communities off the Kodiak road system and the City of Kodiak

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/57.870117080284196N152.67483518512796W



Counties: Kodiak Island, AK

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Sea Otter *Enhydra lutris kenyoni* Population: Southwest Alaska DPS There is **final** critical habitat for this species. Your location overlaps the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/2884	Threatened

Birds

NAME	STATUS
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered

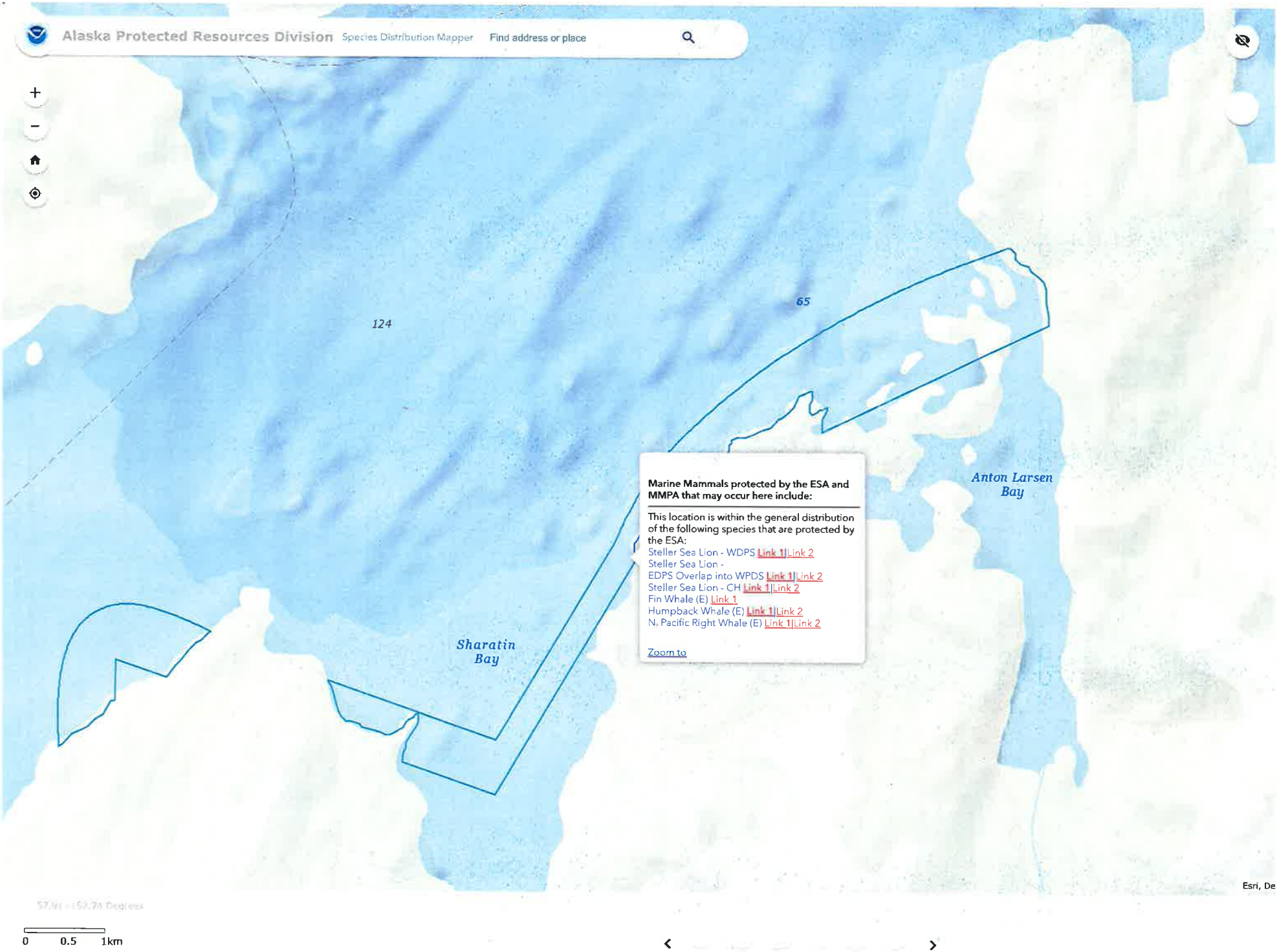
Critical habitats

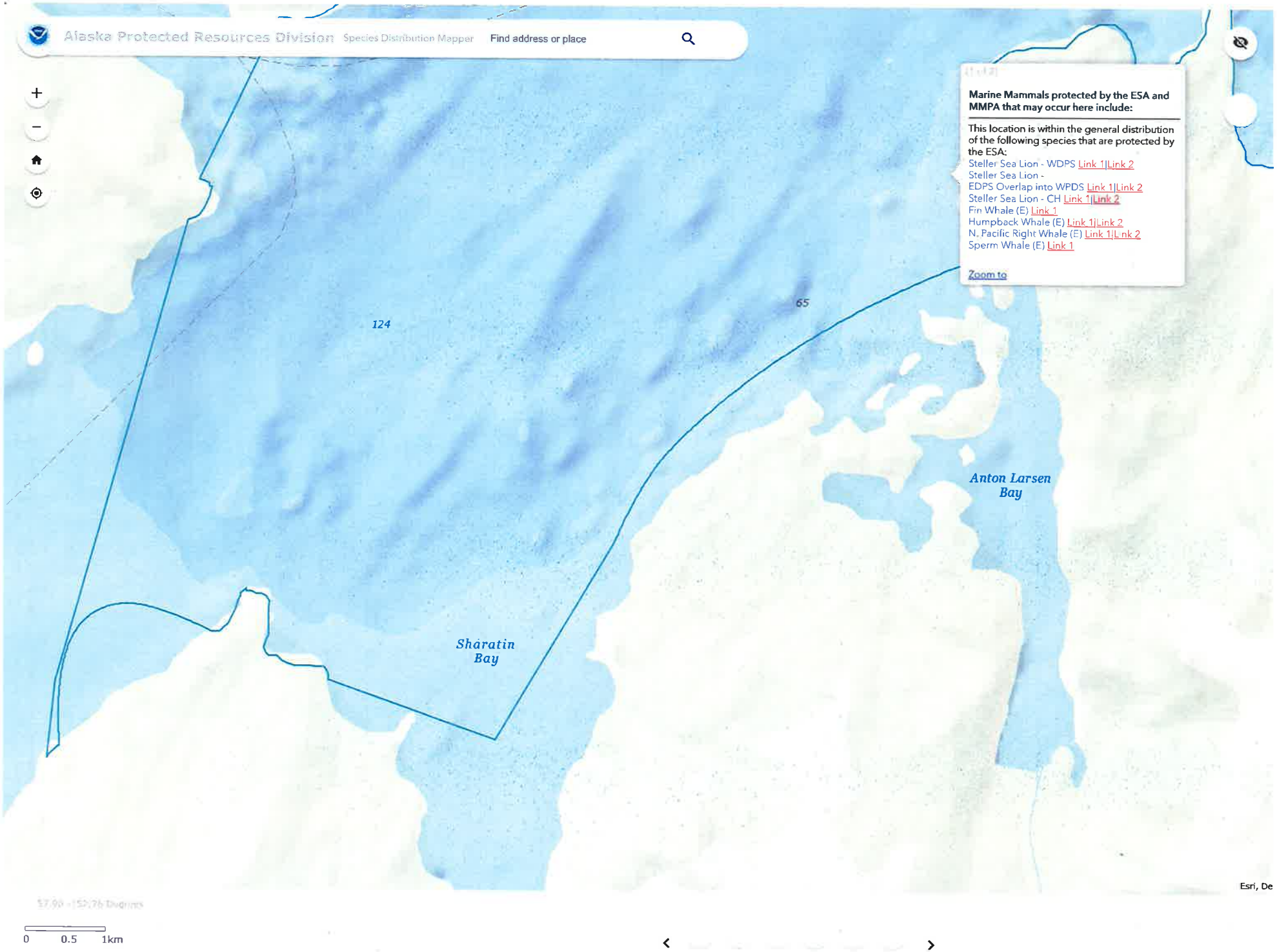
There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Northern Sea Otter *Enhydra lutris kenyoni*	Final

NAME	STATUS

https://ecos.fws.gov/ecp/species/2884#crithab


Alaska Protected Resources Division
Species Distribution Mapper
Find address or place
124
65
Sharatin Bay
Anton Larsen Bay
Marine Mammals protected by the ESA and MMPA that may occur here include:
This location is within the general distribution of the following species that are protected by the ESA:
Steller Sea Lion - WDPS Link 1|Link 2
Steller Sea Lion - EDPS Overlap into WPDS Link 1|Link 2
Steller Sea Lion - CH Link 1|Link 2
Fin Whale (E) Link 1
Humpback Whale (E) Link 1|Link 2
N. Pacific Right Whale (E) Link 1|Link 2
Zoom to
Esri, De
0 0.5 1km


Alaska Protected Resources Division
Species Distribution Mapper
Find address or place
Marine Mammals protected by the ESA and MMPA that may occur here include:
This location is within the general distribution of the following species that are protected by the ESA:
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Steller Sea Lion - CH Link 1|Link 2
Fin Whale (E) Link 1
Humpback Whale (E) Link 1|Link 2
N. Pacific Right Whale (E) Link 1|Link 2
Sperm Whale (E) Link 1
Zoom to
124
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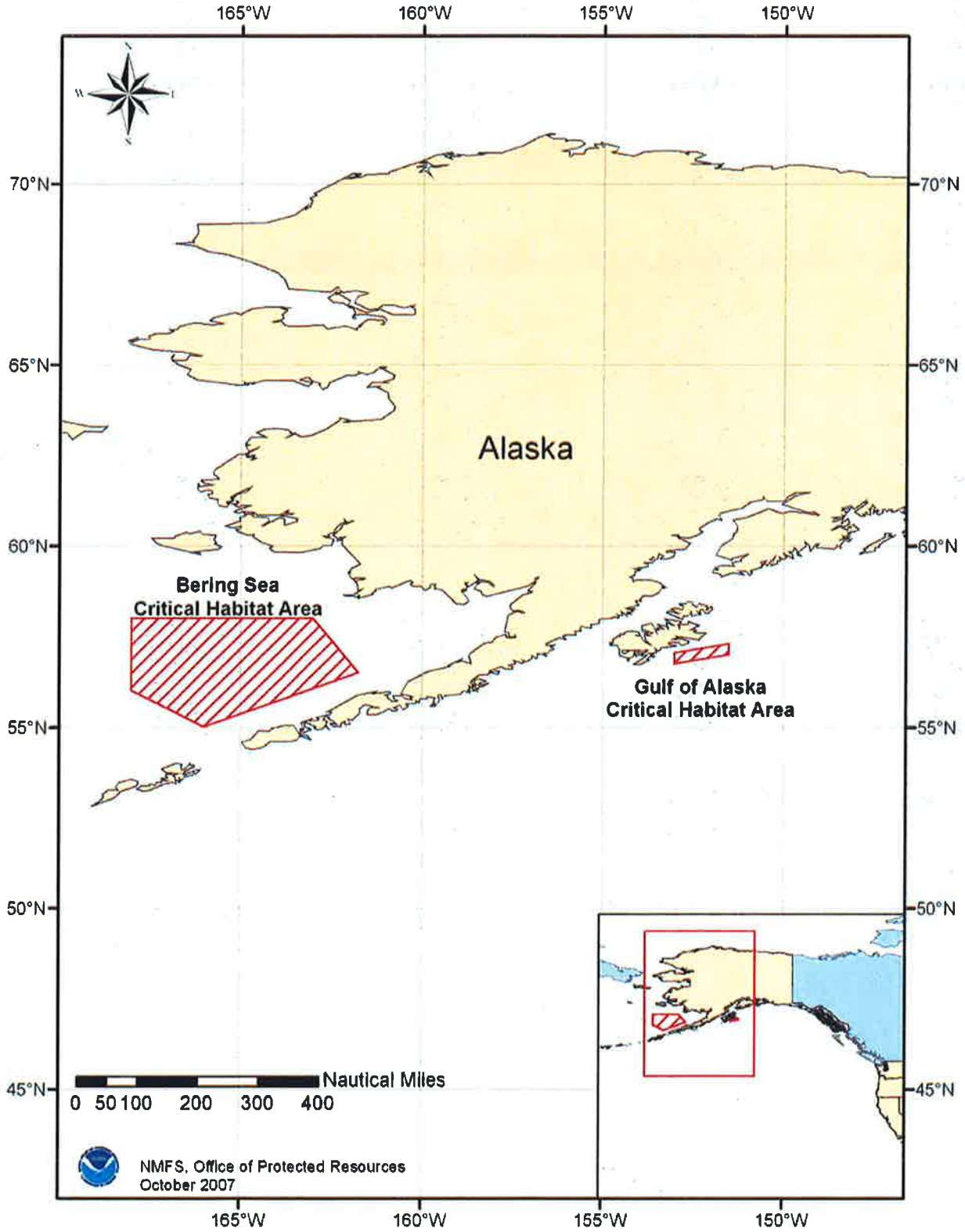
Anton Larsen Bay
Sháratin Bay
Esri, De
0 0.5 1km

North Pacific Right Whale Critical Habitat



Appendix D. Life Histories of ESA-listed Species

Life History – Northern Sea Otter

Range and Distribution

Historically, northern sea otters (*Enhydra lutris kenyoni*) inhabited coastal waters from Baja California north to the coast of southern Alaska, west across the Aleutian Islands to the Kamchatka Peninsula in Russia, and south to the northern islands of Japan. Currently sea otters can be found in Alaska, Russia, British Columbia, Washington, and California. Within Alaska, there are three stocks. The Southeast stock can be found in the coastal waters of Southeast Alaska. The Southcentral population spans from west of Glacier Bay to the eastern edge of Cook Inlet. The ESA-listed Southwest population stretches from the western edge of Cook Inlet, Kamishak Bay, Kodiak Island and extending out through the Aleutian Islands (USFWS 2013).

Sea otters occupy and use all coastal marine habitats within their range, from protected bays and estuaries to exposed outer coasts and offshore islands. Because they need to dive to the sea floor to forage (Bodkin 2001), the seaward limit of their usual distribution is defined by their diving ability and is approximated by the 100 m depth contour. While sea otters can be found at the surface in water deeper than 100 m, either resting or swimming, they are most commonly observed in waters within a few kilometers of shore (Riedman and Estes 1990), and higher densities are frequently associated with shallow water (Laidre et al. 2002). Bodkin and Udevitz (1999) found 80 percent of the otters in Prince William Sound over water depths of <40 m. Sea otters can also be found in high densities where relatively shallow waters or islands occur far offshore (Kenyon 1969). While they periodically haul out on intertidal or supratidal (above the high tide line) shores (particularly during winter months) and generally remain close to the sea/land interface, no aspect of their life history requires leaving the ocean (Kenyon 1969, Riedman and Estes 1990). Sea otters forage in diverse bottom types, from fine mud and sand to rocky reefs. Recent research employing archival time-depth recorders recovered from sea otters in southeast Alaska showed that 84 percent of foraging occurred in depths of 2-30 m, and that 16 percent of all foraging was between 30 and 100 m (Bodkin et al. 2004).

Reproduction

Male sea otters can attain sexual maturity by age 3 but likely do not attain the social maturity required for successful reproduction until >5 years old (Garshelis 1983). Variation in reproductive success among males and the different reproductive strategies they may employ are largely unexplored. Female sea otters attain sexual maturity as early as age 2, and by age 3 most females are sexually mature (Bodkin et al. 1993, Jameson and Johnson 1993).

In areas where sea otter reproduction has been studied, reproductive rates appear to be fairly consistent despite differences in resource availability. Gestation, including a period of delayed implantation, requires about six months. Although copulation and pupping can take place at any time of year, there appears to be a positive relation between latitude and reproductive synchrony. In California, pupping is weakly synchronous to nearly uniform across months (Siniff and Ralls 1991, Riedman et al. 1994, Tinker et al. 2006), whereas in Prince William Sound a distinct peak in pupping occurs in late

spring. In recently colonized habitats in Alaska where food is plentiful, pupping may be less synchronous than in populations at or near equilibrium density (Bodkin and Monson 2002). Females give birth to a single pup, although rare instances of twinning have been observed (Jameson and Bodkin 1986). The average duration of birth to weaning is about six months, resulting in a reproductive interval of approximately one year from copulation to weaning. If a female loses her pup prior to weaning, she will soon enter estrus and breed again. Copulation occurs in the water, and a male may remain with an estrous female for several days (Riedman and Estes 1990), although a female may breed with more than one male.

Behavioral Characteristics and Feeding

Sea otters spend most of their time either foraging, resting, or grooming. They often forage actively around dawn and dusk, and sometimes forage at night. To meet their metabolic needs, sea otters must consume food equivalent to 20 to 25% of their own body weight each day (Kenyon 1969; Costa and Kooyman 1984, Doroff and Bodkin 1994). Generally, they spend one-quarter to one-third of their time foraging and feeding (Riedman and Estes 1990). Foraging effort may be higher if resources are locally scarce (Estes et al. 1986), and lower if prey is plentiful (Garshelis et al. 1986). Specific foraging behaviors depend on time of day, time of year, environmental conditions, local prey species, and prey preferences of individual otters.

To obtain food, sea otters dive to the benthos, collect prey, then carry it to the surface for consumption. They may also carry a rock or another hard object, on which to break shells. Sea otters typically remain under water for 60 to 90 seconds while finding and procuring a prey item. They are tactile foragers, able to feel or dig for prey where the water is turbid or the substrate is soft. Sea otters typically dive less than 30 m for food (Kenyon 1969, Riedman and Estes 1990), but one otter in Alaska was recovered from a king crab pot in 100 m of water (Newby 1975).

Sea otters tend to rest during the middle of the day (Riedman and Estes 1990). Where populations are below carrying capacity, half to two-thirds of a sea otter's time might be spent resting (Estes et al. 1982, 1986). Where populations are at equilibrium density (and prey, therefore, less abundant), increased foraging time displaces resting and grooming time (Estes et al. 1982). Sea otters are meticulous in cleaning their fur. Soiled pelage does not entrap air efficiently, which lowers an otter's ability to keep warm. Ordinarily, sea otters spend up to 20 percent of their time grooming (Riedman and Estes 1990).

Sea otters are generalist predators, known to consume more than 150 different prey species (Kenyon 1969, Riedman and Estes 1990, Estes and Bodkin 2002). With few exceptions, their prey consists of sessile or slow-moving benthic invertebrates such as mollusks, crustaceans, and echinoderms. Foraging occurs in habitats with rocky and soft-sediment substrates from the high intertidal to depths slightly in excess of 100 m. Preferred foraging habitat is generally in depths of less than 40 m (Riedman and Estes 1990), although studies in southeast Alaska have found that some animals forage mostly at depths of 40-80 m (Bodkin et al. 2004). The predominantly soft sediment habitats of southeast Alaska, Prince William Sound, and Kodiak Island support populations of clams that are the primary prey of sea otters. Throughout most of southeast Alaska, burrowing clams (species of *Saxidomus, Protothaca, Macoma*, and *Mya*) predominate in the sea otter's diet (Kvitek et al. 1993). They account for more than 50% of the identified prey, although urchins (*Strongylocentrotus droebachiensis*) and mussels (*Modiolis modiolis*, *Mytilus* spp., and *Musculus* spp.) can also be important. In Prince William Sound and Kodiak Island,

clams account for 34-100 percent of sea otter prey (Calkins 1978, Doroff and Bodkin 1994, Doroff and DeGange 1994). Mussels (*Mytilus trossulus*) apparently become more important as the duration of occupation by sea otters increases, ranging from 0 percent at newly occupied sites at Kodiak to 22 percent in long-occupied areas (Doroff and DeGange 1994). Crabs (*C. magister*) were once important sea otter prey in eastern Prince William Sound, but apparently have been depleted by otter foraging and are no longer eaten in large numbers (Garshelis et al. 1986). Sea urchins are minor components of the sea otter diet in Prince William Sound and the Kodiak archipelago. In contrast, the diet in the Aleutian, Commander, and Kuril Islands is dominated by sea urchins and a variety of fin fish (including Hexagrammidae, Gadidae, Cottidae, Cyclopteridae, and Scorpaenidae; Kenyon 1969, Estes et al.1982). Sea urchins tend to dominate the diet of low density sea otter populations, whereas more fish are consumed in populations near equilibrium density (Estes et al. 1982). For unknown reasons, fish are rarely consumed by sea otters in regions east of the Aleutian Islands.

Habitat Requirements

Sea otters live seaward of the high tide line almost exclusively. They occasionally haul out on offshore rocks and islands and less often on mainland beaches. This habitat-use pattern places sea otters primarily in areas defined as tidelands and bedlands. Tidelands include shores of tidal waters between mean high water and extreme low water, while bedlands are below the extreme low tide mark. Sea otters use a variety of shallow coastal habitats. Their classic association is with rocky substrates supporting kelp beds, but they also frequent (at lower densities) soft-sediment areas where kelp is absent (Riedman and Estes 1990). In general, they remain in nearshore waters (seldom more than 1-2 km from shore) up to 20 fathoms in depth. They may favor topographically complex substrates in preference to relatively featureless bottoms (Riedman and Estes 1990). Sea otters seem to prefer areas with surface kelp canopies, although this is not an essential habitat requirement. In some areas, they may rest in open water areas lacking the canopy forming kelps. However, the kelp canopy is an important habitat component, used for foraging and resting (Riedman and Estes 1990).

Threats

In 2000, the USFWS conducted an aerial survey of northern sea otters in the Aleutian archipelago. The results of that survey indicated that the population had declined by an estimated 70 percent. Additional aerial surveys revealed that the decline extended beyond the Aleutians, and included much of the southwest Alaska population (USFWS 2013).

Causes of mortality in sea otter populations are difficult to determine. The probability of detecting and assigning cause of death depends on the cause. For example, the carcass of a sea otter that dies of starvation is more likely to be recovered than that of one killed by a predator. Documented sources of mortality include predation, starvation, disease, oil spills, incidental take in fisheries, harvest, and intra-specific aggression.

Declining northern sea otter populations across the Aleutian archipelago during the 1990s have been attributed to increased predation by killer whales (Estes et al. 1998). There is cumulative support for predation by killer whales as a primary cause of the population decline, represented by both direct and indirect (inferential) evidence, as summarized below (USFWS 2013):

- There was an increase in the rate of observed killer whale attacks around the time the decline began (Estes et al. 1998, Hatfield et al. 1998). For the area between Kiska and Seguam Islands in the Western Aleutian MU, Estes et al. (1998) estimated a loss of 6,788 otters per year between 1991 and 1997.

- Energetic and demographic feasibility analyses indicate that predation by a small number of killer whales (specifically, a pod of five individuals) would have been capable of causing the sea otter population decline in southwest Alaska (Williams et al. 2004).

- Few beachcast sea otter carcasses were observed during the decline, which is inconsistent with what would be expected if animals were dying from disease, starvation, or other typical causes of sea otter mortality (aside from predation). Systematic searches of beaches at Adak and Amchitka Islands throughout the decline resulted in very few recovered carcasses or skeletal remains. At Amchitka alone, more than 4,000 animals disappeared between 1994 and 1997 (Doroff et al. 2003), yet fewer than 20 skeletal remains (and no fresh carcasses) were found during systematic searches of all beaches on the southern half of the island in the winter of 1993/94 and again in the early spring of 1997 (USGS unpublished data).

- The distribution pattern of sea otters throughout the region of southwest Alaska affected by the decline has shifted from that prior to the decline such that most otters are now closer to shore and tend to be concentrated around protected embayments or areas with extensive shallow reefs (USGS and FWS unpublished data). This likely affords some measure of protection from killer whales.

- There are unpublished reports in recent years (i.e., post-decline) of behavioral responses of sea otters to disturbance that are both atypical and suggestive of avoidance of marine predators. These include animals feeding and resting in very shallow (<2 m) water, and hauling out on land in response to both shore-based and water-based disturbances.

The southwest Alaska DPS ranges from west to east across more than 1,500 miles of shoreline, and the otters occur in a number of distinct habitat types. The magnitude of the population decline has varied over the range. In some areas, numbers have declined by more than an order of magnitude, while in other areas no decline has been detected. The most recent data sets indicate that population management units in the western Aleutian, Eastern Aleutian, Bristol Bay, and south Alaska peninsula are still experiencing a decline. Only the Kodiak archipelago, Kamishak Bay, Alaska Peninsula population remains stable or is growing (USFWS 2013).

Life History – Steller Sea Lion

Range and Distribution

Steller sea lions typically occur in coastal to outer continental shelf waters of the North Pacific Ocean, extending from northern Japan and the Korean peninsula to eastern Siberia, Alaska, and the Aleutian Islands, and southward along western North America to central California (Burkanov and Loughlin 2005, Pitcher et al. 2007, NMFS 2013). The Bering Strait represents the northernmost extent of its distribution. Breeding occurred as far south as San Miguel Island in the Channel Islands off southern California until 1981-1982. The eastern DPS occurs east of 144°W longitude (i.e., from Southeast Alaska to central California, including Washington), while the ESA-listed western DPS ranges west of 144°W from south-central Alaska to northeastern Asia.

Reproduction and Breeding Behavior

Breeding and pupping occur at traditional rookeries where mature males vigorously defend territories and compete for females. Breeding males arrive at rookeries in May, with females beginning to join them soon after (Gentry 1970, Pitcher and Calkins 1981, Merrick 1987). Both sexes usually return to the same rookeries where they were born (Loughlin 2002, Raum-Suryan et al. 2002). Pregnant females give birth to a single pup a few days after arriving at the rookery (Gentry 1970). Pupping extends from late May to early July, with a peak in births in mid-June (Gentry 1970, Pitcher and Calkins 1981, Bigg 1985, Pitcher et al. 2001). Pups begin entering the water when 2-4 weeks old (Sandegren 1970) and are able to swim in the open ocean at about 1 month of age. They begin accompanying their mothers to haulouts when 2-3 months old (Raum-Suryan et al. 2002, Scordino 2006). Weaning typically occurs at 1-2 years of age, but may extend into a third year in some individuals (Trites and Porter 2002, Trites et al. 2006).

Males reach sexual maturity at 3-8 years of age and are capable of holding territories at rookeries by 9-11 years of age (Calkins and Pitcher 1982). Females become sexually mature at 3-6 years of age and may continue reproducing until their early 20s (Mathisen et al. 1962, Pitcher and Calkins 1981). Because parental care commonly extends more than one year, many adult females do not breed annually, which results in the species exhibiting lower productivity than most other pinnipeds (Pitcher et al. 1998). Nutritional stress caused by inadequate prey resources can contribute to reproductive failure among adult females (Pitcher et al. 1998).

Diet and Foraging Behavior

Steller sea lions are dietary generalists that prey on a broad variety of fish and cephalopods (squid and octopus), including both benthic and pelagic species (Trites et al. 2007a, NMFS 2008). Other pinnipeds and birds are occasionally eaten (e.g., Pitcher and Fay 1982, Mathews and Adkison 2010). Diet at specific locations is typically dominated by one or two species (Riemer et al. 2011). More than 61 prey species are eaten in Southeast Alaska and British Columbia, including walleye pollock (*Gadus chalcogrammus*), Pacific herring (*Clupea pallasii*), Pacific sand lance (*Ammodytes hexapterus*), Pacific hake (*Merluccius productus*), arrowtooth flounder (*Atheresthes stomias*), salmon (*Oncorhynchus* spp.), Pacific cod (*Gadus macrocephalus*), capelin (*Mallotus villosus*), rockfish (*Sebastes* spp.), spiny dogfish (*Squalus suckleyi*),

eulachon (*Thaleichthys pacificus*), Pacific sardine (*Sardinops sagax*), skates (Rajidae), and cephalopods (Womble and Sigler 2006, Trites et al. 2007a, Sigler et al. 2009, DFOC 2011).

Foraging strategies vary with location, gender, age, and seasonal patterns in prey availability and nutritional quality. Prey species that form seasonal concentrations (e.g., herring, salmon) as well as those available year round are targeted (Sigler et al. 2004, 2009, Womble et al. 2009). Bioenergetic models predict that daily food requirements in the wild are about 30-35 kg for mature males and 15-20 kg for mature females (Winship et al. 2002). For females, these daily energy requirements represent about 14% of body weight for a 1-year old and 7% for a mature individual. Sea lions that consume more low-fat fishes, such as pollock, require substantially more prey than those that consume fattier fishes, such as herring (Rosen and Trites 2000).

Habitat Requirements

Terrestrial Habitats

Steller sea lions occupy two types of onshore sites: rookeries and haulouts. Both are distributed throughout the species' range and most are used year after year. Rookeries are defined as sites occupied from May to August where breeding and pupping occur and >50 pups are born annually (Pitcher et al. 2007, NMFS 2008). Haulouts are used as resting sites year-round or seasonally. Small numbers (≤50) of pups may also be born and raised at a few haulouts. Both types of sites are preferentially located on islands and offshore rocks with exposed rocky shorelines and wavecut platforms, with sand, gravel, or cobble beaches, riprap, sheltered rocky shores, and sea ice used to a lesser extent (Call and Loughlin 2005, Ban and Trites 2007). Haulouts also occur on human-made structures such as jetties, breakwaters, navigational aids, docks, and log booms. Rookeries are typically located on islands and offshore rocks, where animals are well protected from human disturbance and terrestrial predators such as bears and wolves. Access to high ground and protection from high waves and swell are other important features of rookeries that help guard against the loss of pups (Edie 1977). Rookeries and haulouts are commonly associated with relatively shallow and wellmixed waters, average tidal speeds, and gradual bottom slopes (Sandegren 1970, Edie 1977, Ban 2005). Haulouts are typically located in areas with relatively strong currents, high salinity, and low surface temperatures, which are indicative of high ocean productivity and optimal foraging areas (DFOC 2011).

Marine Habitats

Animals generally travel and forage within 60 km of land in water depths of less than 400 m, but may occasionally venture several hundred kilometers offshore and occur beyond the continental shelf (Loughlin et al. 2003). Availability of prey near haulouts and rookeries is probably the most important factor affecting marine habitat use. Modeling by Gregr and Trites (2008) determined that Steller sea lions in Alaska occur most frequently over ocean depths of 150-250 m, which consistently coincides with the presence of high densities of benthic and pelagic fish. Additionally, Steller sea lions appear to forage more often in areas with substantial variation in sea surface temperatures, which also tend to have greater prey availability (Lander et al. 2010).

Threats

The ESA-listed western DPS of the Steller sea lion experienced a major decline in the last 50 years. Decreases were first detected in the 1970s, when sea lion numbers in the Gulf of Alaska and Aleutian Islands fell from a minimum of 140,000 animals in 1956-1960 to about 110,000 animals in 1976-1979 (Allen and Angliss 2014). Counts in the Alaska portion of the DPS reached an estimated low of 18,300 animals in 2000, representing a total decline of about 87 percent since 1956-1960. The declines in Alaska were characterized by poor juvenile survival and reduced birth rates (Holmes and York 2003, Holmes et al. 2007, Horning and Mellish 2012).

Possible causes of the decline include:

- Increased incidence of parasites and disease;
- Predation by killer whales;
- Nutritional stress through competition for food with other species and commercial fisheries; or
- Nutritional stress caused by natural climate change-induced changes in the abundance, quality and distribution of prey (http://www.marinemammal.org/biology/steller-sea-lion/sea-lion-population-decline/).

Other factors that may contribute to the population decline include meteorological changes (i.e., frequency of storms), pollution and toxic substances, entanglement in marine debris, and incidental or intentional take by humans. Data to assess each of the possibilities are currently limited. Whether the decline is caused by a single factor or a combination of all of the above is not known. (http://www.marinemammal.org/biology/steller-sea-lion/sea-lion-population-decline/).

Sea lion abundance in the western DPS began increasing after 2000 (Fritz et al. 2013), with the most recent size estimate for pups and non-pups placed at 79,300 animals for 2008-2012 (Allen and Angliss 2014). This included an estimated 52,200 animals in western and central Alaska and 27,100 animals in Russia. However, numbers of both pups and non-pups continue to decline in some areas of the range, including the western and central Aleutians (west of Samalga Pass) and parts of Russia (Fritz et al. 2013, Allen and Angliss 2014).

Several continued threats to Steller sea lions have been identified by NOAA (https://www.fisheries.noaa.gov/endangered-species-conservation/threats-steller-sea-lions), as summarized below:

- **Climate Change**. Sea level rise caused by climate change will directly affect terrestrial rookery and haulout sites currently used by Steller sea lions as well as those that may be used by a recovering population. This may result in more deaths among small pups, and traditional sites on some islands with low relief may be submerged. Decadal scale regime shifts, and shorter change oceanographic anomalies also can have large effects on distribution and abundance of Steller sea lion prey.

- **Incidental Take with Active Fishing Gear**. Historically, commercial fishing in the Bering Sea and the North Pacific Ocean killed Steller sea lions incidentally. Changes in fishing techniques and areas and times fished are thought to have significantly reduced incidental take. Amendments to the Marine Mammal Protection Act in 1988 and 1994 required observer programs to monitor marine mammal incidental take in some domestic fisheries and NOAA Fisheries provides estimates of mortality and

serious injury of Steller sea lions due to US commercial fisheries in marine mammal stock assessments for the western and eastern DPSs. These estimates are likely an underestimate of the actual levels, since large segments of the fishing industry, (including fisheries near Steller sea lion rookeries, haulouts, and feeding areas, and fisheries with known past interaction with sea lions) have either no or very limited observer coverage.

- **Toxic Substances**. The relative impact of toxic substances on the recovery of the western DPS is thought to be moderate, with a moderate feasibility of mitigation. Contaminants that might harm Steller sea lions enter ocean waters from many sources, such as oil and gas activity, vessel accidents or spills, local industrial development, atmospheric transport, wastewater discharges, at sea processing, runoff, toxic waste sites, and natural sources. Once in the environment, some contaminants move up the food chain and accumulate in apex predators. Of recent concern is information showing that mercury contaminant loads of some sea lion pups are relatively high in some parts of the range where declines are still occurring.
- **Illegal Shooting**. Historical accounts document substantial mortality within the western DPS due to illegal shooting, especially associated with fisheries. While there is likely much less shooting than during the period of sharp decline in the 1970s and 1980s, recent documented increases in the Copper River Delta area, as well as fishermen's reports of greater interactions with fisheries leading to increased anger towards the species, are cause for concern. Current monitoring is limited.
- **Disturbance**. Disturbance of Steller sea lions on terrestrial sites can lead to mass stampedes during which pups and other smaller animals may be crushed or injured. It can lead to interruption of important behaviors such as nursing, resting, breeding, territory holding, and socializing. Repeated disturbances that cause lactating females to abandon rookeries or use them less could adversely affect the health and survival of pups. Sea lions may be disturbed by vessels approaching from the water, by aircraft, and by approach from the land. Sea lion response is often highly unpredictable.

Life History – Baleen Whales

ESA-listed baleen whale species that may be found in the Action Area include the humpback whale, fin whale, and north Pacific right whale. The life history and ecology of these whales were taken largely from the ecological profiles of the species presented on the NOAA Fisheries website (https://www.fisheries.noaa.gov/whales). In addition to the three baleen whales, the sperm whale has also been documented in the region, but the NMFS ESA Species and Critical Habitat Mapper Web Application places the distribution outside of the action area; thus this species is not included in the biological assessment (NMFS 2018).

Humpback Whale

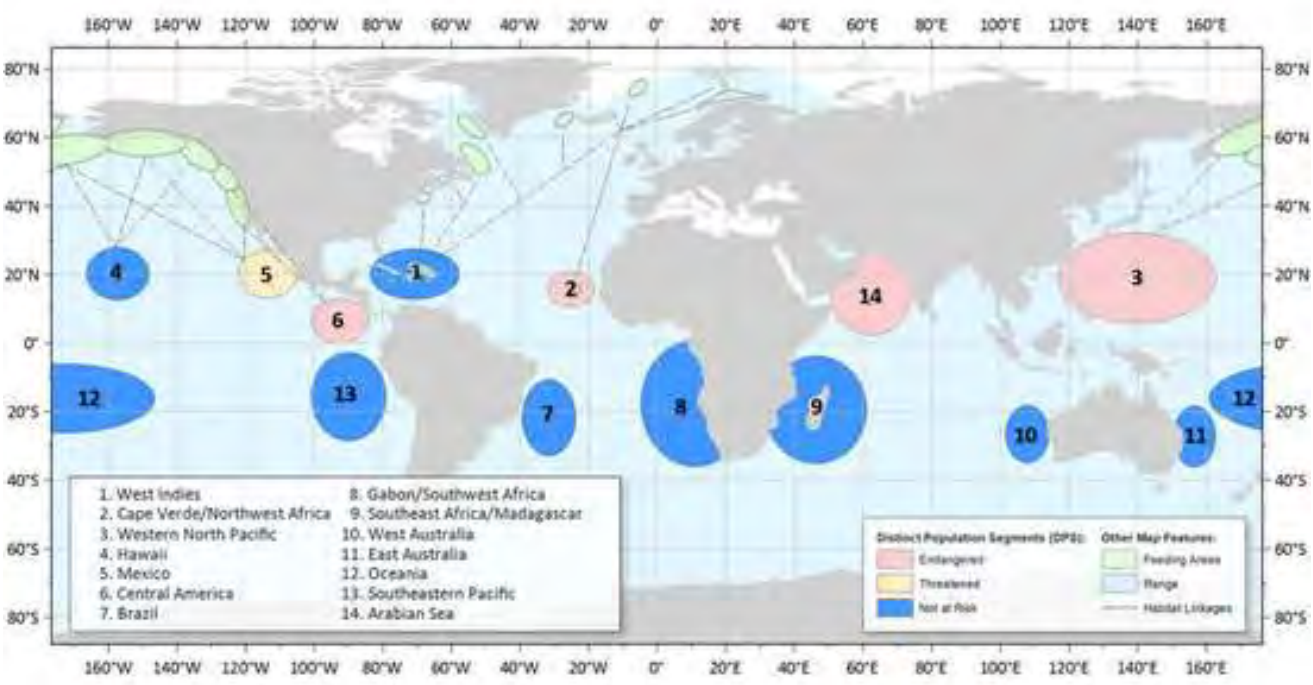
Range, Distribution and Status

Humpback whales are found throughout the world's major oceans. They travel substantial distances during seasonal migrations with some animals migrating 5,000 miles between high-latitude summer feeding grounds and winter mating and calving areas in tropical waters. In the North Pacific, some humpback whales migrate from Alaska to Hawaii—they can complete the 3,000 mile trip in as few as 36 days. While calving, they prefer shallow, warm waters commonly near offshore reef systems or shores. Humpback whale feeding grounds are generally in cold, productive waters.

There are 14 distinct populations segments (DPS) of humpback whale, five are listed under ESA and one, the Mexico DPS, has been documented in the Gulf of Alaska and Aleutian Islands. Features of North Pacific DPS's are as follows:

- The Mexican population breeds along the Pacific coast of Mexico, the Baja California Peninsula, and the Revillagigedos Islands, and feeds across a broad range from California to the Aleutian Islands.
- The Central American population breeds along the Pacific coast of Costa Rica, Panama, Guatemala, El Salvador, Honduras, and Nicaragua and feeds almost exclusively off California and Oregon.
- The Hawaii population breeds in the main Hawaiian Islands and feeds in most of the known feeding grounds in the North Pacific, particularly Southeast Alaska and northern British Columbia. This DPS has recovered and was delisted in 2016 (FR Vol 81, No 174 pp 62,260-62,320, September 8, 2016).
- The western North Pacific population breeds in the areas of Okinawa, Japan, and the Philippines, and feeds in the northern Pacific, primarily off the Russian coast.

The distribution of the 14 DPS's is presented in the figure below.



Reproduction

Humpback whales migrate to lower latitudes for breeding. During this time, males exhibit competitive behavior around females and often strike or surface on top of one another, sometimes causing injuries. Breeding has not been directly observed, but it is believed that males are competing for access to females. Males also sing complex songs for hours that can be heard 20 miles away—the low-frequency portions of the song are audible much farther in deep water.

Humpback whales reach sexual maturity between the ages of 4 and 10 years. Females produce a single calf, on average every 2 to 3 years, although annual calving has been documented in some individuals. After an 11 month gestation, calves are born 13 to 16 feet in length. Calves nurse from, and stay near to, their mothers for up to one year before weaning. While calves are not believed to maintain long-term associations with mothers, they are more likely found in the same feeding and breeding grounds.

Behavior and Diet

Humpback whales are generally found close to shore and are commonly surface active, including breaching (jumping out of the water), or slapping the surface with their pectoral fins and tails.

During the summer months, humpback whales spend most of their time feeding and building fat stores (blubber) to sustain them through winter. Humpback whales filter-feed on small crustaceans, mostly krill and forage fish. Fish species preyed upon in Alaska include Pacific herring, Pacific sand lance, and capelin, consuming up to 3,000 pounds of food per day. Humpback whales use several methods to help them herd, corral, and disorient prey, including: bubbles, underwater acoustics, the seafloor, and even pectoral fins. A specific feeding method observed in Alaskan waters, called "bubble net feeding," involves using curtains of air bubbles to condense prey. Once the fish are corralled and pushed toward

the surface, the whales lunge upward through the bubble net with open mouths engulfing their prey. Different groups of humpback whales use other bubble structures in similar ways, though, there appears to be regional specializations in bubble-feeding behavior among populations.

Threats

Commercial whaling severely reduced humpback whale numbers from historical levels. Before a moratorium on commercial whaling in 1985, all populations of humpback whales were greatly reduced, some by more than 95 percent. The species is increasing in abundance in much of its range, but faces threats from entanglement in fishing gear, vessel strikes, vessel-based harassment, underwater noise, and habitat impacts.

Vessel Strikes. Inadvertent vessel strikes can injure or kill humpback whales. The species is vulnerable to vessel strikes throughout their range, but the risk is much higher in coastal areas with heavy ship traffic.

Entanglement. Humpback whales can become entangled by different gear types including moorings, traps, pots, or gillnets. Once entangled, they often drag and swim with attached gear for long distances, resulting in fatigue, compromised feeding ability, or severe injury, which may lead to reduced reproductive success and death. There is evidence to suggest that most humpback whales experience entanglement over the course of their lives, but are often able to shed the gear on their own. The portion of whales that become entangled and do not survive is unknown.

Vessel-Based Harassment. Whale watching vessels, recreational boats, and other vessels may cause stress and behavioral changes in humpback whales. Because the whales are often found close to shore and surface active, they tend to be popular whale watching attractions. There are several areas where U.S.-managed stocks of humpback whales are the center of whale watching industries, including: Alaska (particularly southeast Alaska), the Gulf of Maine, the southeastern U.S. and West Indies, California, and the Hawaiian Islands.

Habitat Impacts. Shipping channels, commercial fisheries, and aquaculture operations can affect areas in which humpback whales aggregate. Recreational use of marine areas, including resort development and increased boat traffic, may displace whales that would normally use those areas to feed, reproduce, or nurture offspring.

Ocean Noise. Underwater noise threatens whale populations, interrupting normal behavior and driving them away from areas important to their survival. Sound has been shown to increase stress hormones in their system and mask the natural sounds humpback whales require to communicate and locate prey. Some underwater noise is loud enough to cause permanent damage to their hearing and could affect survival.

Fin Whale

Range, Distribution and Status

The fin whale is found throughout the world's oceans. Based on surface observations and calls detected from acoustic receivers, fin whales can be present within the North Pacific, Gulf of Alaska, and Bering

Sea over the entire year. For management purposes, three stocks of fin whales are currently recognized in U.S. Pacific waters: 1) Alaska (Northeast Pacific), 2) California/Washington/Oregon, and 3) Hawaii. There are no reliable estimates of current and historical abundances for the entire Northeast Pacific fin whale stock. For Alaska fin whales west of the Kenai Peninsula, estimates of between 2,554 and 3,168 have been made, though it is believed that this range is an underestimate for the entire Northeast Pacific stock. Though year-round residents of Alaskan waters, densities in any one area can change seasonally.

Fin whales typically occupy deep, offshore waters, away from shipping lanes and shorelines, which is the principal reason for the general lack of population assessment information for the species.

Reproduction

Little is known about the social and mating systems of fin whales. As with other baleen whales, long-term bonds between individuals are rare.

Fin whales have long lives reaching physical maturity at about 25 years, with a maximum lifespan of about 90 years. Males become sexually mature at 6 to 10 years of age and females at 7 to 12 years of age. After 11 to 12 months of gestation, a pregnant female gives birth to a single calf in tropical and subtropical areas during midwinter. Newborn calves are about 18 feet long, and weigh 4,000 to 6,000 pounds.

Fin whales sometimes mate with blue whales and hybrids have been documented.

Behavior and Diet

Fin whales are fast swimmers, often found in social groups of two to seven. They can also feed in large groups that include other whale species, such as humpback and minke whales.

During the summer fin whales consume up to 2 tons of food a day feeding on krill, small schooling fish (including herring, capelin, and sand lance), and squid by lunging into schools of prey with their mouth open, filtering large amounts of food and water through baleen plates. Fin whales fast in the winter while they migrate to warmer waters. The location of winter breeding grounds is not known.

Threats

Like all large whales, fin whales were hunted by commercial whalers, which greatly diminished populations. Whalers did not initially target fin whales, because of their speed and open ocean habitat. However, as whaling methods modernized with steam-powered ships and explosive harpoons, whalers over-hunted the species. Whaling is no longer a major threat to the species, but vessel strikes have been documented to be a major source of mortality.

Vessel Strikes. Inadvertent vessel strikes can injure or kill fin whales. The projected increase in ship traffic arising from the opening of trans-polar shipping routes (as arctic sea ice continues to decline) will increase the risk of vessel strikes, and also increase ambient noise and pollution.

Entanglement. Fin whales can become entangled in fishing gear, either swimming off with the gear attached or becoming anchored. They can become entangled in different gear types, including traps, pots, or gillnets. Once entangled, whales may drag and swim with attached gear for long distances, ultimately resulting in fatigue, compromised feeding ability, or severe injury, which may lead to reduced reproductive success and death.

Ocean Noise. Underwater noise threatens whale populations, interrupting their normal behavior and driving them away from areas important to their survival. Increasing evidence suggests that exposure to intense underwater sound in some settings may cause some whales to strand and die.

North Pacific Right Whale

Range, Distribution and Status

North Pacific right whales are the rarest of all large whale species and among the rarest of all marine mammals. There are no reliable estimates of current abundance or trends for right whales in the North Pacific. The population is very small, likely well under 1,000 individuals; most sightings have been of single whales, though small groups have been sighted.

Right whales have occurred historically in all the world's oceans from temperate to subpolar latitudes. Contemporary sightings of right whales have mostly occurred in the central North Pacific and Bering Sea. Sightings have been reported as far south as central Baja California in the eastern North Pacific, as far south as Hawaii in the central North Pacific, and as far north as the sub-Arctic waters of the Bering Sea and sea of Okhotsk in the summer. Since 1996, right whales have been observed repeatedly in designated critical habitat in the southeastern Bering Sea during the summer months. Migration patterns of the whales are unknown, although it is believed they spend the summer in far northern feeding grounds and migrate south to warmer waters, such as southern California, during the winter. From 1965 to 1999, years during which the U.S.S.R. harvested North Pacific right whales illegally, there were only 82 sightings in the entire eastern North Pacific, with the majority of those occurring in the Bering Sea and Aleutian Islands. Calving grounds have not been found in the eastern North Pacific. Worldwide, most known right whale nursery areas are in shallow, coastal waters.

Reproduction

Due to the logistical challenges of studying small populations, little is known about the reproductive rate, age structure, or sex ratio of North Pacific right whales. Very little new information is available, as there have been very few confirmed sightings of calves in the eastern North Pacific in the last several decades. Right whales probably mate around 8 years of age with females giving birth to their first calf at an average age of 9 to 10 years. Gestation is about 12 to 13 months and calves are believed to be produced every three to five years.

Behavior and Diet

Right whales are thought to feed largely on copepods. Unlike other baleen whales, right whales are skim feeders, continuously filtering through their baleen while moving through a patch of zooplankton. This

type of feeding strategy requires exceptionally high prey densities. North Pacific right whales were recently observed in three consecutive years (2004–2006) in late summer apparently feeding in the Barnabus Trough area on Albatross Bank, south of Kodiak Island in the Gulf of Alaska. In all three years, the whales were associated with a high-density demersal layer of zooplankton at approximately 175meters in depth.

Threats

Because of their rarity and scattered distribution, it is nearly impossible to assess the threats to this species, but possible threats include:

Vessel Strikes. Inadvertent vessel strikes can injure or kill North Pacific right whales. Vessel strikes are a primary cause of death in North Atlantic right whales, and it is likely that North Pacific right whales are also be vulnerable. As arctic sea ice continues to decline, the projected increase in ship traffic from the opening of trans-polar shipping routes will increase the risk of vessel strikes, and also increase ambient noise and pollution.

Entanglement. North Pacific right whales can become entangled in fishing gear and marine debris, either swimming off with the gear attached or becoming anchored. While there are very few known entanglements of North Pacific right whales, entanglement in fishing gear, including traps or pots or gillnets, is a significant source of mortality for North Atlantic right whales. Once entangled, whales may drag attached gear for long distances, ultimately resulting in fatigue, compromised feeding ability, or severe injury, which may lead to reduced reproductive success and death.

Ocean Noise. Underwater noise pollution interrupts the normal behavior of right whales, which rely on sound to communicate. If loud enough, ocean noise can cause permanent or temporary hearing loss.

Biotoxins from Harmful Algal Blooms. Harmful algal blooms have been documented in North Atlantic and southern right whales and identified as a threat to both populations. It has been suggested that effects from algal blooms could heighten the whales' susceptibility to both ship strikes and entanglements. There is concern about the emerging prevalence of algal toxins in habitat used by North Pacific right whales. Due to lack of access to the species, algal toxins have not been found in North Pacific right whales; however, they have been documented in bowhead whale carcasses in the Arctic. Domoic acid and saxitoxin was present in 68 percent and 32 percent, respectively, of bowhead whale carcasess examined from the Arctic, the highest prevalence of the 13 species examined in a study looking at harmful algal blooms in Arctic marine mammals.

Climate Change. The impacts of climate change on baleen whales are unknown, but it is considered one of the largest threats facing remote habitat in the North Pacific. Most notably, the timing and distribution of zooplankton prey is largely governed by sea ice coverage and could change dramatically with altered oceanographic conditions. Changes in zooplankton distribution could lead to nutritional stress and diminished reproduction for North Pacific right whales. Additionally, changing water temperature and currents could impact the timing of environmental cues important for navigation and migration, and the location of critical habitat within the North Pacific right whale range. Changes in ice extent, density, and persistence could alter the dynamics of the Bering Sea shelf zooplankton community, and in turn, affect the foraging behavior and fitness of right whales.

Life History – Short-tailed Albatross

Range and Distribution

The short-tailed albatross' current range includes the Bering Sea/Aleutian Islands and the Gulf of Alaska. Guy et al (2013) reported that the Alaska coast has a higher density of subadults than previously thought. Satellite tagging studies found that adult birds did not travel as far or range as widely as younger birds, juveniles and sub-adults up to two years old (USFWS 2014). Aleutian Island waters have recently been highlighted as important areas used for feeding during the time when the short-tailed albatross molt. O'Connor (2013) noted areas along the Bering Sea shelf where albatross and vessels were associated more than other areas.

Kuletz et al. (2014) determined that short-tailed albatross distribution may be changing significantly based on squid distribution. From the 1970s to the 2000s, short-tailed albatross have increased in abundance and moved their center of distribution northward in the Bering Sea and Aleutians (Kuletz et al. 2014).

Breeding

Short-tailed albatross are long-lived and first breed at age five or six years, with females laying one egg each year (USFWS 2008). Breeding colonies are limited to just a few remote islands located 1,000 or more miles south of Japan. Nearly 80 percent of the birds breed in two colonies on Torishima Island, located approximately 370 miles off the coast of Japan. The island is also an active volcano. Breeding colonies are also present on the Japanese Senkaku Islands, southwest of Torishima (USFWS 2008). Short-tailed albatross have strong site fidelity and typically return to the same breeding site year after year.

There was a translocation effort at Mukojima in the Ogasawara (Bonin) Islands from 2008 through 2012 and early accounts of breeding on these islands seem promising. Additionally, a pair of short-tailed albatross at Midway Atoll in the Northwestern Hawaiian Islands has successfully bred during three seasons. (USFWS 2014)

Foraging Ecology and Diet

The diet of short-tailed albatross during breeding is not well-known, but observations of food brought to nestlings (H. Hasegawa, Toho University, unpublished data) and of regurgitated material (Austin 1949) indicate that the diet includes squid (especially the Japanese common squid [*Todarodes pacificus*]), shrimp, fish (including bonitos [*Sarda* sp.], flying fishes [*Exocoetidae*] and sardines [*Clupeidae*]), flying fish eggs, and other crustaceans (Hasegawa and DeGange 1982, Tickell 2000). Short-tailed albatross may formerly have scavenged salmon (*Oncorhynchus* sp.) from shallow coastal estuaries (Tickell 2000). This species has also been reported to scavenge discarded marine mammals and blubber from whaling vessels, and they readily scavenge fisheries offal. Short-tailed albatross forages diurnally and possibly nocturnally (Hasegawa and Degange, 1982), either singly or in groups (occasionally in the 100's predominantly taking prey by surface-seizing (Piatt et al. 2006).

What little diet information exists for this species at sea during the non-breeding season suggests that squid, crustaceans, and fish are important prey (Hasegawa and DeGange 1982). In the Bering Sea, prey items comprised of mid-water squid concentrations (primarily *Berryteuthis magister,* and *Gonatopsis borealis* in the upper layer [200–500 m]) were greatest near the outer continental shelf and slope (Sinclair et al. 1999). Mid-water prey may become available to albatross through: scavenging on discards from subsurface predators and fisheries, positively buoyant post-mortem organisms, and vertical migration (Lipinski and Jackson 1989). The Japanese common squid, a known diet item of short-tailed albatross (Suryan et al. 2006), is abundant within the Kuroshio-Oyahio transition zone west of 160° E (Mori et al. 2002), a region that was visited by all albatross tracked from Torishima Island.

During egg incubation and brood-rearing, short-tailed albatross forage along the eastern coastal waters of Honshu Island, Japan, with one parent incubating the nest for 2 to 3 weeks, while the other forages (USFWS 2008). After the chick has grown enough to regulate its own temperature, both parents forage and the chick stays at the nest. After hatching, chicks are fed on stomach oil, then soon more solid food such as squid and flying fish eggs. Important non-breeding season diet includes squids, crustaceans, and fishes. They also utilize fishery offal and marine mammal carcasses (Hasegawa and DeGange 1982).

Habitat

During the breeding season from December to April, short-tailed albatross are mainly concentrated near breeding colonies, predominantly offshore of Japan. Breeding habitats are isolated, windswept, offshore islands with restricted human access. Nest sites may be flat or sloped with sparse or full vegetation. During the breeding season the species may forage hundreds of miles from the colony sites, often off Alaska (USFWS 2008). After breeding, immature albatross demonstrate two patterns of dispersal: some move more immediately north to the western Aleutian Islands, while others remain within northern Japan and Kuril Islands coastal waters during the summer and then, later in September, up to the western Aleutian Islands. Females tend to spend more time off Japan and the Kuril Islands than the males, which spend more time in the Aleutian Islands and Bering Sea (Suryan et al. 2007).

During the non-breeding season, short-tailed albatross are exclusively an offshore species, primarily ranging along the continental shelf and slope regions of the North Pacific Ocean, possibly due to the presence of squid, which are an important prey species (Suryan et al. 2006). A predominate amount of post-breeding time is spent off Alaska, and large groups have been observed over the Bering Sea canyons, which serve to funnel water and food onto the shelf edge (Piatt et al. 2006). Short-tailed albatross are also more active during the day than night (USFWS 2008).

Threats and Recovery

Prior to its exploitation, the short-tailed albatross was possibly the most abundant of the three North Pacific albatross species, ranging throughout most of the North Pacific Ocean and Bering Sea. At the beginning of the 20th century, the species declined in population to near extinction, primarily as a result of hunting at the breeding colonies off Japan. Hunters harvested an estimated five million short-tailed albatross from the breeding colony on Torishima Island between approximately 1885 and 1903. By the mid-20th century, the species was believed to be extinct. However, in 1950, about 10 birds were observed on Torishima Island and by 1954, 25 birds were observed. In 2008, about 2,400 short-tailed

albatross were known to exist, with about 450-500 breeding pairs (USFWS 2008), and by 2013 about 750 pairs were estimated (USFWS 2014). Torishima Island where nearly 80 percent of the species breed, is also an active volcano (USFWS 2008).

The activity that led to the endangerment of short-tailed albatross no longer occurs. However, a number of other factors currently threaten the species' continued existence and continued recovery. The most notable existing threat to the species' recovery is the possibility of an eruption of Torishima Island, their main breeding site. A minor eruption occurred there in August of 2002, after the end of the breeding season. Other existing threats include incidental catch in commercial fisheries, ingestion of plastics, contamination by oil and other pollutants, the potential for depredation or habitat degradation by non-native species, and adverse effects related to global climate change (USFWS 2008).

Current growth rates for the bird are considered good, estimated at between 5 and 8 percent per year (USFWS 2008).

The USFWS (2008) states that the short-tailed albatross may be reclassified from endangered to threatened under the following conditions:

- The total breeding population of short-tailed albatross reaches a minimum of 750 pairs; and
- At least three breeding colonies each exhibiting a 3-year running average growth rate of ≥6 percent for ≥7 years, at least two of which occupy island groups other than Torishima with a minimum of ≥50 breeding pairs each.

The USFWS (2008) states that the species may be delisted under the following conditions:

- The total breeding population of short-tailed albatross reaches a minimum of 1000 pairs (population of 4000 or more birds); and
- The 3-year running average growth rate of the population as a whole is ≥6 percent for ≥7 years; and
- At least 250 breeding pairs exist on 2 island groups other than Torishima, each exhibiting ≥6 percent growth for ≥7 years; and
- A minimum of 75 pairs occur on a site or sites other than Torishima and the Senkaku Islands.

The population status was recently updated relative to the recovery criteria developed by USFWS (2014). This update reported that the species is making good progress toward meeting some of the recovery criteria, but because most birds still nest on Torishima Island, the potential for catastrophic events devastating the main breeding colonies still puts the entire population at risk. Overall population size of 750 breeding pairs was estimated to have been met in 2013 and the delisting criteria of 1,000 breeding pairs is estimated to be met in 2017. The distribution of these breeding pairs is approximately 78 percent on Torishima and 22 percent in the Senkaku Islands. The 3-year running average growth rate for the population on Torishima Island meets the recovery criteria for delisting. The challenge to recovering the species will be the growth of the new colonies at islands other than Torishima and the Senkakus.

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Appendix E. Photo Points - Anton Larsen Road

PHOTO 1

PHOTO 2

1.	End of existing Anton Larsen Bay Road, approximate beginning of proposed road extension	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*
2.	Small Creek at the end of Anton Larsen Bay Road	

PHOTO 3

PHOTO 4

3.	Small Creek culverts at the end of existing Anton Larsen Bay Road	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*
4.	Unnamed small stream northwest of Small Creek at proposed road crossing	

PHOTO 5

PHOTO 6

5. Existing Chalet Creek bridge 6. Chalet Creek at proposed road crossing	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*

PHOTO 7

PHOTO 8

-

7.	Unnamed small stream and crossing northwest of Chalet Creek	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*
8.	Wetland/stream crossing along proposed road extension	

PHOTO 9

PHOTO 10

9.	Wetland habitat in depression along proposed road extension	***Site Photographs***
10.	Spruce/alder forest near lake along proposed road extension	*Anton Larsen Bay Road Extension Biological Assessment*

PHOTO 11

PHOTO 12

11. Lake along proposed road extension 12. Stream crossing at west end of lake	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*

PHOTO 13

PHOTO 14

13. Top of slope, approaching Crag Point Cove 14. Crag Point Cove	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*

PHOTO 15

PHOTO 16

15.	Crag Point Cove intertidal zone, spruce forest riparian zone	***Site Photographs***
16.	Crag Point intertidal zone, angular cobble substrate, high marsh vegetation composed of *Honckenya peploides*	*Anton Larsen Bay Road Extension Biological Assessment*

PHOTO 17

PHOTO 18

17.	Proposed parking area in flat above OHWM	***Site Photographs***
18.	Wetland in depression/swale near the proposed parking area	*Anton Larsen Bay Road Extension Biological Assessment*

Photo Point Locations	***Site Photographs*** *Anton Larsen Bay Road Extension Biological Assessment*

Appendix E

Scoping Summary Report and Other Agency Consultation

Anton Larsen Bay Road Extension

Public Involvement Summary

AK TR OUZI 2017(1)
Kodiak, Alaska

Prepared for:

U.S. Department of Transportation
Federal Highway Administration
Western Federal Lands Highway Division

Prepared by:

HDL ENGINEERING Consultants LLC

and

DAVID EVANS AND ASSOCIATES INC.

January 2019

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Appendix D. Public Comments
Appendix E. Agency Scoping

Abbreviations

DEA	David Evans and Associates, Inc.
FHWA	Federal Highway Administration
HDL	HDL Engineering Consultants, LLC
R	Range
T	Township
SIDCO	Spruce Island Development Corporation
USGS	United States Geological Survey

1 Introduction

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 21W, and Sections 3 and 4 of T27S, R21W, United States Geological Survey (USGS) Quadrangle Kodiak D-2 and D-3, Seward Meridian (Figure 1).

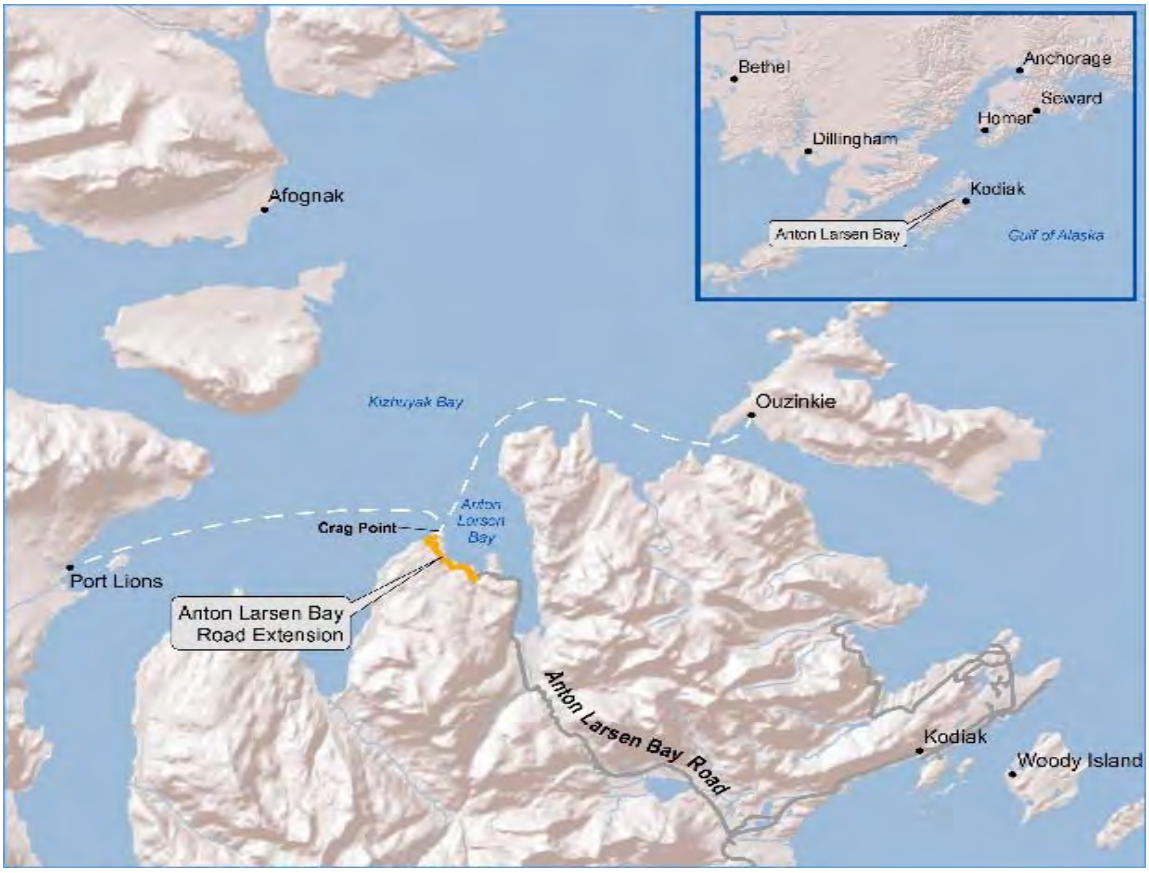

Figure 1: Project Location & Vicinity Map

The project, as proposed, will include the following (Figure 2):

- Construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point
- Construction of a parking area and boat launch
- Drainage improvements including installation of culverts

Figure 2: Proposed Project

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development grant that was issued to the Spruce Island Development Corporation (SIDCO). Construction funding has not been secured.

1.1 Purpose and Need

Purpose

The purpose of this project is to provide increase access between Kodiak and outlying communities.

Need

The completed project would increase access to the services of the City of Kodiak from the communities of Port Lions, Native Village of Ouzinkie, and off-island logging camps. The proposed route would reduce the extent of open-ocean travel currently required to access the City of Kodiak by outlying communities. The bay that is located at the end of the proposed road extension freezes less than the existing bay at the end of the road, therefore, increasing access to/from remote areas by boat in the winter. The bay freezes less frequently due to a reduced amount of fresh water entering the bay compared to the location of the boat ramp at the end of

the road presently. The extension project has been discussed locally since the 1960's and was recently included in the Kodiak Island Borough Capital Improvement Program.

1.2 Project Scoping

The process of soliciting comments and information from the public and agencies on the purpose and need for a project, potential alternatives, and possible issues and concerns that need to be addressed during the environmental review and design stages of a project, is called "scoping". Scoping is an integral part of the environmental documentation process required by the National Environmental Policy Act. This report, with its appendices, summarizes the public and agency scoping methods used, identifies issues and concerns, and lists comments received to date along with their sources and responses. Comments were received from a variety of stakeholders (or interested parties) including local residents, resource agency representatives, and interested organizations.

1.3 Project Team

The project team is outlined below.

<u>Contracting Agency</u>

The Federal Highway Administration, Western Federal Lands Highway Division

- Reuben Johnson, FHWA, Project Manager
- Melissa Hogan, FHWA, Environmental Specialist

<u>Prime Consultant</u>

David Evans and Associates, Inc. (DEA)

- Kevin Bracy, DEA, Contract Manager
- Gray Rand, DEA, Project Manager
- Jim Starkes, DEA, Biologist

<u>Sub-Consultant</u>

HDL Engineering Consultants, LLC (HDL)

- Dennis Linnell, P.E., HDL, Contract Manager
- Heather Campfield, HDL, Environmental Lead
- Owen Means, HDL, Environmental Specialist

1.4 Scoping Method

The following scoping methods were used to inform the public and local, state, and federal agencies about the project, its objectives and the environmental and design processes:

- Public Scoping Meeting – Kodiak (50 attendees)
- Public Scoping Meeting – Ouzinkie (21 attendees)

- Public Scoping Meeting – Port Lions (23 attendees)
- Newspaper Advertisements in the Kodiak Daily Mirror
- Flyers (Project Fact Sheets)
- Public Meeting Display Boards
- Agency Scoping Letters
- Project Website

1.4.1 Public Meeting Advertisements/Flyer

To help the public understand the purpose of the project ad to announce the Public Scoping Meeting, a flyer was distributed locally. In addition, advertisements regarding the project scope and Public Scoping meeting dates and times appeared in the Kodiak Daily Mirror, a daily newspaper of general circulation, printed and published in Kodiak on the following dates:

- Friday, October 5, 2018
- Wednesday, October 10, 2018
- Friday, October 19, 2018
- Wednesday, October 24, 2018

A copy of the public meeting advertisement and flyer are included in Appendix A.

1.4.2 Project Website

A project website (https://flh.fhwa.dot.gov/projects/ak/anton-larsen/) was created to house the most current project information and provide project updates. The website provides a project description, identifies project partners, and outlines the project timeline. The website also includes an interactive project map for the purpose of accepting electronically submitted comments on the project corridor.

Persons wanting to communicate about the project via e-mail are provided with email addresses for the Project Manager (Reuben Johnson, P.E., reuben.johnson@dot.gov) and the Environmental Specialist (Melissa Hogan, melissa.j.hogan@dot.gov). Both addresses were included in the public scoping meeting mailer announcement, in the newspaper announcement, and on the comment forms passed out at meetings.

1.4.3 Project Comment Form

A project comment form was developed and passed out at the public scoping meetings to solicit public comments. The form includes information about the project and an area to add contact information for those that wish to receive updates on the project. A copy of the comment form and additional meeting materials are included in Appendix B.

2 Public Scoping

2.1 Public Scoping Meetings

The public scoping meetings were held in the following locations:

- Kodiak Public Library on Wednesday, October 24, 2018, from 3 pm to 6 pm
- Ouzinkie Community Hall on Thursday, October 25, 2018, from 10 am to 11:30 am
- Port Lions Tribal Hall on Thursday, October 25, 2018, from 1 pm to 2:30 pm

The format of each meeting was open-house. Community members signed in at each meeting and met one-on-one to discuss individual issues and concerns. In Ouzinkie and Port Lions each meeting began with a brief introduction to the project given by the FHWA Project Manager. The following topics were covered in each meeting:

- Meeting purpose
- Project Purpose and Need
- Project Description (proposed road and boat launch design)
- Design Concept
- Environmental Resources and Process
- Project Schedule
- Public Process/Opportunities to be Involved

Meeting sign-in sheets are included in Appendix C.

2.2 Documentation of Public Comments

All written comments received as of November 26, 2018 (the conclusion of the scoping period) are listed in Appendix D. Additional verbal comments received at the Public Scoping Meetings are paraphrased below:

- How will access be maintained in winter? The road traverses a mountain pass and is poorly maintained in the winter months and snowdrifts often impede access.
- Theft and gun shooting has increased with the addition of the existing boat launch site. Will the State Troopers patrol the area?
- Will the trail that the road will follow from the end of the existing road be replaced in kind?
- Will public rest facilities be located at the boat launch site?
- The boat launch site needs to be accessible to fishermen as well as local traffic.
- Who will take over long-term maintenance of the road?
- Will mass development of land occur once the road extension is in place?

3 Agency Scoping

An agency scoping letter was mailed to project stakeholders on March 18, 2019. The letter provided background information on the project and provided an invitation to comment during a 15-day comment period. Letters sent to agencies are included in Appendix E.

3.1 Documentation of Agency Scoping Comments

All written agency comments received as of April 8, 2019, have been reviewed and are included in Appendix E. The following is a summary of the agency comments received:

Agency	Comment
Alaska Department of Commerce Community and Economic Development	Provided known flood information resources for the proposed area as well as recommended additional outreach to other state agencies and local elders within the community.
Alaska Department of Natural Resources State Historic Preservation Office	Recommended establishing an Area of Potential Effect as defined by *36 CFR § 800.16 (d)*.
Alaska Department of Natural Resources	Confirmed there are no 6(f) properties within the project area.
National Marine Fisheries Service	Expressed general support for the project.
U.S Fish and Wildlife Service	Provided guidance and comments on the following resources: • Recommends using Alaska Specific Fish Passage Design Guidelines for culvert replacement. • Will support analysis of in-lieu fee, mitigation banks, and permittee responsible mitigation should wetland impacts be unavoidable. • Provided Timing Recommendation for Land Disturbance and Vegetation Clearing to reduce impacts to migratory bird and their nests. • Recommends conducting invasive species surveys and if invasive species are identified development management efforts and assessments during the environmental analysis. • Using USFWS automated tool to streamline the Endangered Species Act, Section 7 Consultation process.
Alaska Department of Environmental Conservation	Confirmed there are no known contaminated sites within the project area.

4 Summary

Public and agency comments collected throughout the official comment period are represented in this report. Comments received provided valuable insight into the issues to be considered and/or resolved during the project. All comments will be reviewed and addressed, as the environmental document is prepared. Any comments received after the end of the official scoping periods for the public and agencies will also be reviewed by the team and addressed in the environmental document.

APPENDIX A

Meeting Advertisement and Flyer

AFFP

Federal Highway Administration

Affidavit of Publication

STATE OF ALASKA }
COUNTY OF KODIAK ISLAND BOROUGH } SS

Sara Schaefer, being duly sworn, says:

That she is Publisher of the Kodiak Daily Mirror, a daily newspaper of general circulation, printed and published in Kodiak, Kodiak Island Borough County, Alaska; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

October 05, 2018, October 10, 2018, October 19, 2018, October 24, 2018

That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Sara Schaefer

Publisher

Subscribed to and sworn to me this 24th day of October 2018.

Janet S Baker

Janet S. Baker, Notary Public, Kodiak Island Borough County, Alaska

My commission expires: March 17, 2021

JANET S. BAKER
Commission # 170317001
NOTARY PUBLIC
My Commission Expires 03-17-2021
STATE OF ALASKA

00006554 00057323

Heather Campfield
Hattenburg Dilly and Linnell HDL
202 West Elmwood Ave
Palmer, AK 99645

Federal Highway Administration

Notice of Public Meeting
for
Anton Larsen Bay Road Extension
Project No. AK TR OUZI 2017(1)

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, invites you to attend an Open House Public Meeting to discuss the proposed extension of Anton Larsen Bay Road on Kodiak Island, approximately 11 miles northwest of Kodiak, Alaska. The project scope includes constructing approximately two-miles of gravel road extending the existing 11.7 mile Anton Larsen Bay Road. About half of the proposed project closely follows an existing, private, all-terrain vehicle trail. The remaining project continues northwest through undeveloped wilderness. The project would terminate with a parking lot and boat launch ramp near Crag Point.

The project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA plans to complete an Environmental Assessment as part of the National Environmental Policy Act process, which considers the beneficial and adverse effects of federal, federally-funded, and/or federally-permitted projects on the quality of the human environment. Construction funding has not been secured.

Scheduled Meeting Locations

Wednesday, October 24, 2018
Kodiak Public Library Multipurpose Room
612 Egan Way
Kodiak, Alaska
3:00 PM – 6:00 PM

Thursday, October 25, 2018
Ouzinkie Tribal Community Hall
10:00 AM – 11:30 AM
Native Village of Port Lions Tribal Hall
1:00 PM – 2:30 PM

FHWA requests information and comments on resources in the study area that may be affected. The following executive orders apply:

Executive order 11990, Notice of Wetland Involvement;
Executive Order 12898, Environmental Justice;
Executive Order 11593, Protection and Enhancement of Cultural Environment;
Executive Order 11988, Floodplain Management;
Executive Order 13112, Invasive Species.

For more information, or if you would like to submit comments outside the public meeting, please contact:

Melissa Hogan, FHWA Environmental Specialist
Email: Melissa.j.hogan@dot.gov
Telephone: (360) 619-7735
Project Website: https://flh.fhwa.dot.gov/projects/ak/anton-larsen/

The deadline for submitting comments is November 26, 2018. If you require special accommodations in order to participate in this meeting, please call in advance so arrangements can be made to assist you.

Federal Highway Administration

Notice of Public Meeting
for
Anton Larsen Bay Road Extension
Project No. AK TR OUZI 2017(1)

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PUBLIC OPEN HOUSE

Anton Larsen Bay Road Extension

Wednesday,
October 24, 2018
3 pm – 6 pm
Kodiak
Public Library
Kodiak, AK

Thursday,
October 25, 2018
10 am – 11:30 am
Community Hall
Ouzinkie, AK

Thursday,
October 25, 2018
1 pm – 2:30 pm
Tribal Hall
Port Lions, AK

Project Overview

The Western Federal Lands Highway Division of the Federal Highway Administration *(FHWA)*, in partnership with the Native Village of Ouzinkie *(NVO)* proposes to extend the Anton Larsen Bay Road for approximately two-miles to a planned parking area and boat launch near Crag Point. The road extension and boat launch would provide better access to goods and services, including emergency services, offered in Kodiak to those in remote locations including Ouzinkie, Port Lions, and remote logging camps.

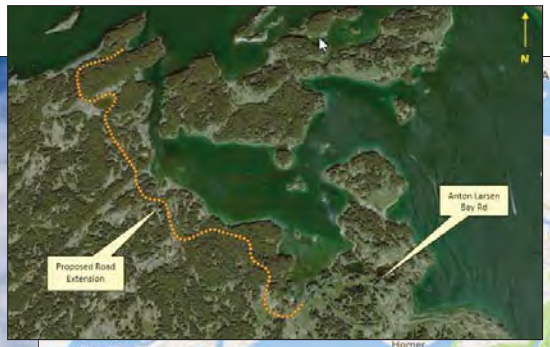
The purpose of this public scoping meeting is to inform the public and interested stakeholders of the environmental assessment process being undertaken and for the project team to gain a better understanding of the range of issues to be addressed and the extent of their effect on the human environment.

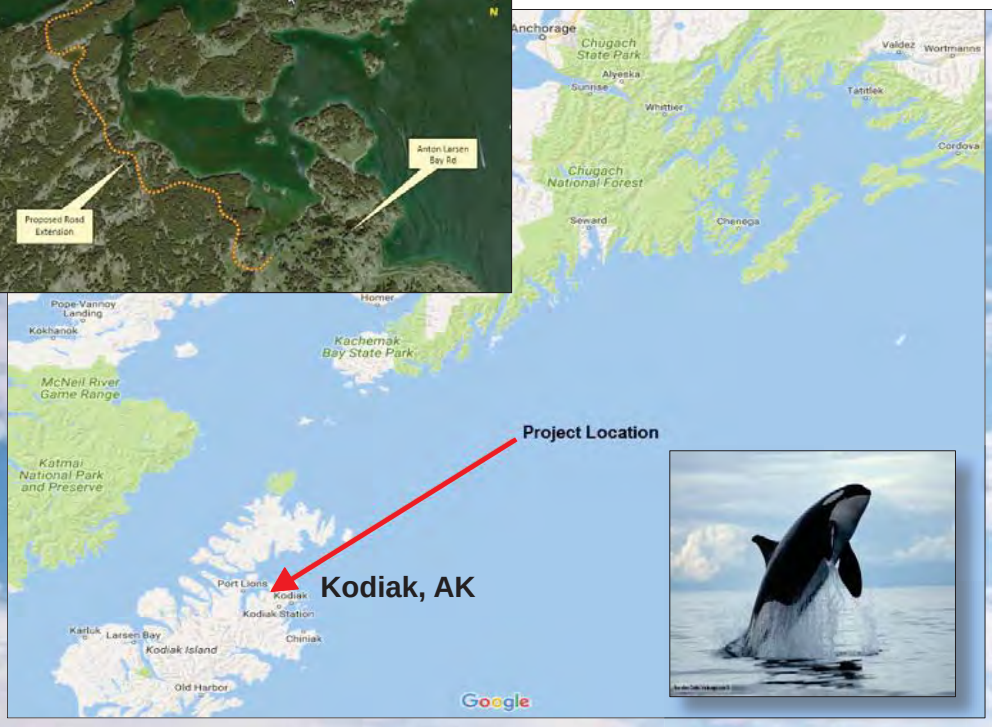
Project Purpose and Need

- Provide a safer and more reliable year-round transportation link between Kodiak and outlying communities;
- Support economic development through efficient access;
- Improve access to recreation and subsistence activities.

Maintained ATV trail at creek crossing.

Typical small creek crossed by an ATV trail.





Comments and Contact Information

Questions or comments can be sent via mail or email to:

Melissa J. Hogan
Phone: 360-619-7735
Environmental Specialist
Melissa.J.Hogan@dot.gov

FHWA Western Federal Lands Highway Division
610 East Fifth Street
Vancouver, WA 98661-3801

Visit the project website for more information: https://flh.fhwa.dot.gov/projects/ak/anton-larsen/

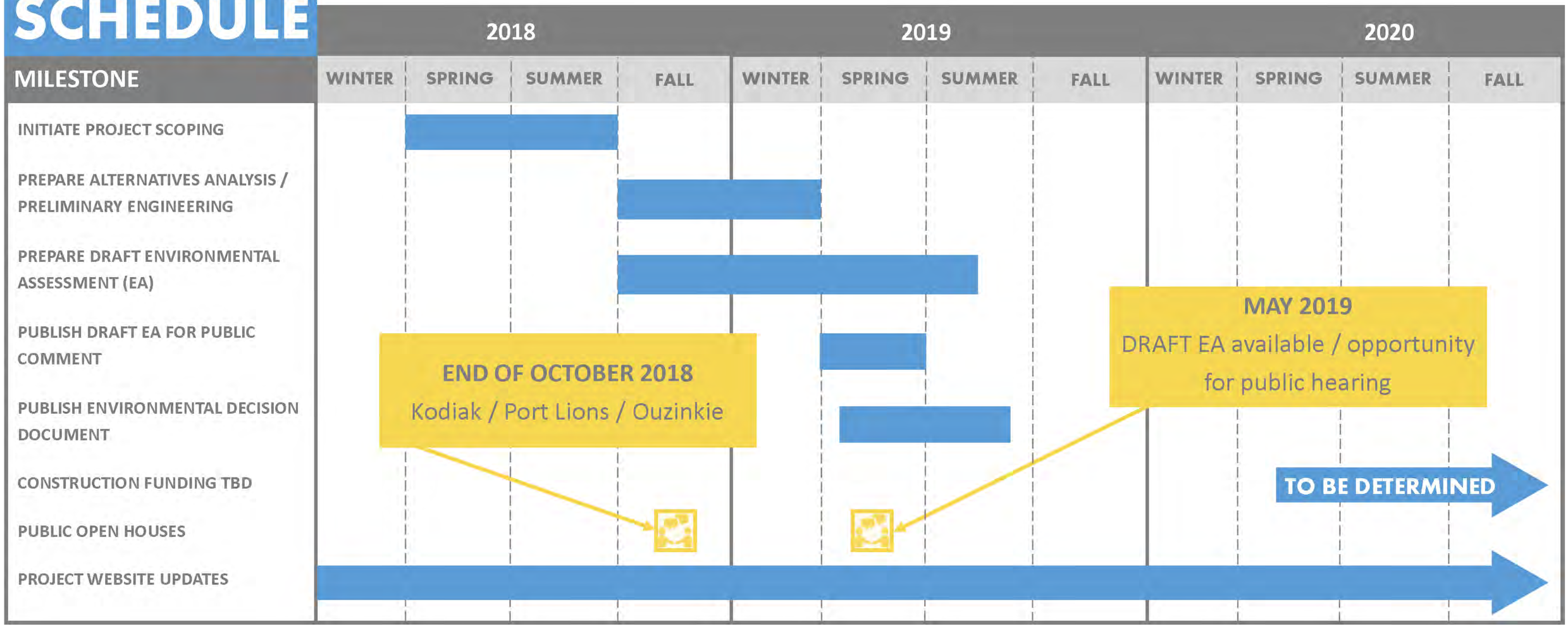
ANTON LARSEN BAY ROAD EXTENSION

APPENDIX B

Meeting Materials

ANTON LARSEN BAY ROAD EXTENSION

SCHEDULE



PROJECT WEBSITE

For more project specific information or to provide comments please go to our project website at:

https://flh.fhwa.dot.gov/projects/ak/anton-larsen/

PROJECT CONTACT INFORMATION

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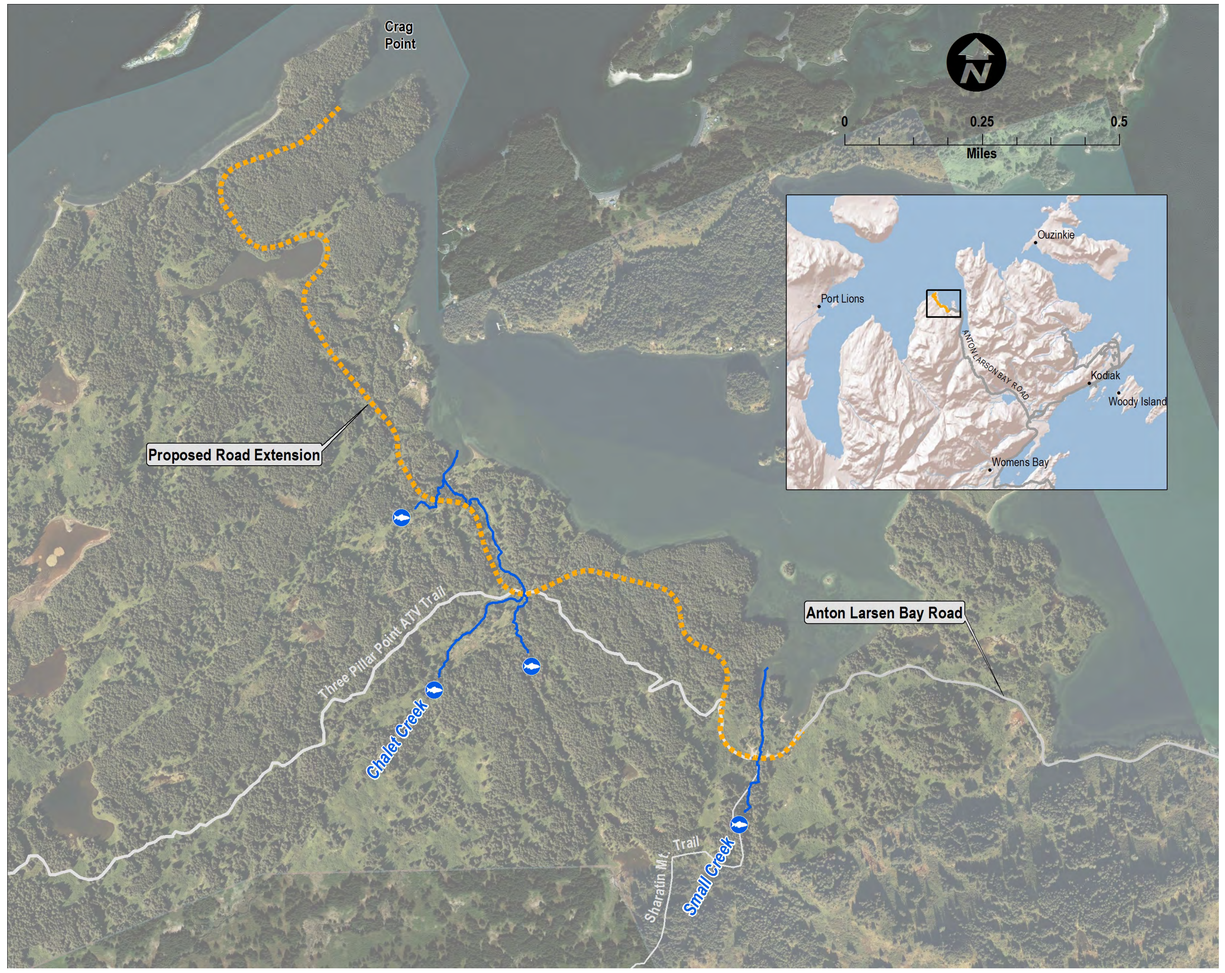
610 East Fifth Street
Vancouver, Washington
98661

ANTON LARSEN BAY ROAD EXTENSION

PROJECT LOCATION



PROJECT SCOPE

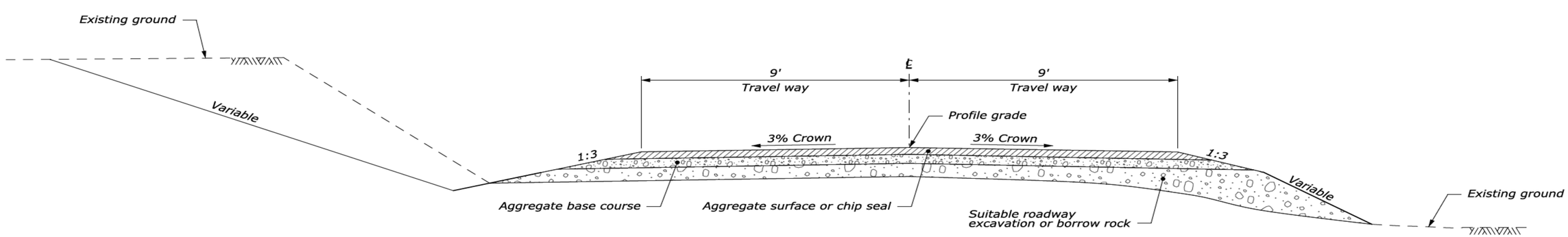
The Western Federal Lands Highway Division of the Federal Highway Administration, in cooperation with the Native Village of Ouzinkie, proposes to extend Anton Larsen Bay Road for approximately two miles to a planned parking area and boat launch near Crag Point.

PROJECT PURPOSE & NEED

The purpose of the project is to provide a safer and more reliable year-round transportation link between Kodiak and outlying communities. Safer and more reliable access to Kodiak fulfills the following needs:

- Improved access to emergency services offered in Kodiak
- Improved safety and reliability for those traveling to Kodiak from remote locations
- Improved access to recreation and subsistence activities
- Supports economic development of the area

TYPICAL SECTION



TYPICAL SECTION

(NTS)

ANTON LARSEN BAY ROAD EXTENSION

Environmental Considerations & Consultation Requirements

Historic & Cultural Resources

The National Historic Preservation Act of 1966 (as amended) governs the protection/preservation of cultural resources.

A reconnaissance level cultural resource survey identified the presence of cultural/historic resources in the area of the proposed road extension. Consultation with the Alaska Department of Natural Resources State Historic Preservation Office, Tribes, and Other Interested Parties regarding impacts to resources will be completed.

Migratory Birds/Bald & Golden Eagles

Protected by the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act of 1940 (as amended)

Known eagle nest within 0.5 miles of proposed project

Migratory bird habitat within project area

Threatened & Endangered Species

The Endangered Species Act of 1973 was designated to protect critically compromised species from extinction, including fish, wildlife, and plants that are listed as Endangered or Threatened. The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) are the primary federal agencies monitoring Threatened and Endangered species and their habitats. Consultation with the USFWS and NMFS under the Endangered Species Act and Marine Mammal Protection Act will be completed regarding the following species:

- **USFWS Jurisdiction**
  - Northern Sea Otter and its Designated Critical Habitat Area
  - Short-tailed Albatross
- **NMFS Jurisdiction**
  - Steller Sea Lion
  - Northern Pacific Right Whale
  - Sperm Whale
  - Humpback Whale
  - Fin Whale
  - Gray Whale
  - Dolphins
  - Seals

Rivers, Streams, & Lakes

Salmon habitat is of particular importance because they sustain fish populations crucial to subsistence based communities. Per the Magnuson-Stevens Fishery Conservation and Management Act, work conducted within a stream may require the following consultations:

U.S. Army Corps of Engineers – Waters of the U.S.

National Marine Fisheries Service – Essential Fish Habitat Assessment

Alaska Department of Fish & Game - Title 16 Fish Habitat Permit

Alaska Maritime National Wildlife Refuge

Established as a conservation measure for marine mammals, seabirds, and other migratory birds as well as the marine resources they rely upon. Designated lands are located at the entrance to Anton Larsen Bay and will be considered in the development of the proposed project.

Studies Completed to Date:

- Draft Cultural Resource Reconnaissance Report (June 2014)
- Alaska Department of Fish & Game Stream Survey (December 2015)
- Project Scoping by State of Alaska Department of Transportation & Public Facilities (January 2016)
- Invasive Species Inventory (June 2016)
- Wetland Delineation Report and Mapping (June 2016)
- Preliminary Geotechnical Reconnaissance Memo

ANTON LARSEN BAY ROAD EXTENSION
Anton Larsen Bay
Marine Waters:
Stellar Sea Lion
Designated Critical Habitat
Crag
Point
Proposed Parking Lot
and Boat Launch
Anton Larsen Bay Road
Proposed Road Extension
Small Creek
Chalet Creek
Three Pillar Point ATV Trail
Sharatin Mt. Trail
0
0.25
0.5
Miles
Road Extension Proposed Alignment
Sharatin Mt Trail
Three Pillar Point ATV Trail
Wetlands (National Wetland Inventory)
Anadromous Fish Streams
Northern Sea Otter Designated Critical Habitat
Alaska Maritime National Wildlife Refuge Boundaries

APPENDIX C

Public Comments

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

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JEFF & MARGARET STEWART					

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

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Kodiak, AK

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U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

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U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

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U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Tribal Hall
Kodiak ~~Port Lions,~~ AK

Please Sign In.

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U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Tribal Hall

Kodiak ~~Port Lions~~, AK

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Eric Engvall		N	1112 E. Rezanof Dr.	Kodiak	99615

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Ouzinkie, AK

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U.S. Department of Transportation
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Anton Larsen Bay Road Extension Project

Community Hall
Ouzinkie, AK

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U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Ouzinkie, AK

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U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall

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LaToya Hartley	lrlukin@gmail.com	Y	Box 116 Port Lions AK 99550		

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall

Port lions [redacted], AK

Please Sign In.

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MARTY SHURAVLOFF	MSHURAVLOFF@OUTLOOK.COM	Y	P O BOX 115	PORT LIONS	99550
WAYNE LUKIN		Y	PO BOX 72	PORT LIONS	99550

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Port Lions ~~Ouzinkie~~, AK

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Willie Nelson				Port Lions AK	99550

APPENDIX D

Public Comments

NAME	DATE	TOPIC	COMMENT
Shawna Hegna, President, Koniag	11/19/2018	Access Emergency Service Safety	Koniag is a regional Alaska Native Corporation formed under the terms of the Alaska Native Claims Settlement Act of 1971. Part of Koniag's mission is to support the six village communities on Kodiak Island. As part of your effort, Koniag has been on record supporting the Anton Larsen Bay Road Extension. As part of your Environmental Assessment process, Koniag again affirms its support for the extension of Anton Larsen Bay road to year-round ice-free ocean access. Koniag Shareholders in the communities of Ouzinkie and Port Lions are unable to utilize the boat ramp and road in Anton Larsen Bay in the winter due to the bay freezing. This increases their cost of goods procured in Kodiak or inhibits their ability to get to Kodiak for medical attention as they either have to fly to Kodiak or traverse by boat around Spruce Cape, which not only increases fuel consumption by boats, but also exposes them to the oftentimes dangerous seas around Spruce Cape. A road extension to ice-free waters would remedy this issue. In addition, Koniag also owns a granite quarry located at Shakmanof Cove, approximately 3 miles from the outlet of Anton Larsen Bay. The Anton Larsen Bay road extension could provide Koniag with a more economic means of access to and from our quarry.
Will Dumm	11/20/2018	Maintenance Environmental Emergency Service Remote Lifestyle	I am a resident of Anton Larsen Island, and I oppose this road extension. The existing road is minimally maintained despite extremely heavy use. The road often is left impassable for multiple days after winter storms, even when the bay is ice-free and the existing dock is accessible to travelers from Port Lions and Ouzinkie. Significant improvement to road system access via the Anton Larsen Bay road could be achieved by increased funding for road maintenance to the recently rebuilt Anton Larsen Bay dock. Necessary funding for road construction, a new dock, parking area, and breakwater would be far out of proportion to the project's benefits. The road extension would replace a popular ATV and hiking trail, threaten archaeological sites, and extensively develop an area which Kodiak residents currently enjoy largely untouched. Rural residents certainly have a right to accessible emergency services and medical, care, within practical limits. For rural Northwest Kodiak Island, these needs are already well met. Residents of Ouzinkie and Port lions seeking access to Kodiak have an exceptional set of options, including a short skiff ride directly to town, multiple daily scheduled commercial flights, and ferry service to Port Lions. Supporters of this road extension rightly claim it will make travel cheaper and more convenient, but only minimally so. Residents seeking urgent medical care already have access to town, except in the most extreme winter weather. For less urgent access, waiting for weather to allow boat travel to town is a minor inconvenience during the increasingly infrequent winters when bay ice makes the existing Anton Larsen Bay dock inaccessible. Realistically, this road extension would provide significant benefit only during the few days during years when Anton Larsen Bay is frozen, on which extreme weather makes flying, ferry travel, and boating directly to Kodiak impossible. Even on these days, weather must still allow Ouzinkie and Port Lions residents to travel by boat to Anton Larsen Bay. I do personally understand the benefits of this project. When the bay is frozen, my family walks the existing ATV trail from ice-free water to the road. When the entire road was impassable, we have skied from Anton Larsen to town to catch flights. We've had medical emergencies while the bay was frozen. However, there's misconception that rural residents are unjustly underserved, and entitled to improved access to services available on the road system. In reality, we all gladly accepted these inevitable shortcomings in service when we chose to live remotely. To demand drastic expansion of services is to deprive ourselves and our neighbors on Northwest Kodiak of the right to choose a rural way of life. We all have the cheaper, safer option to live on a reliably maintained part of the road system. This road extension would have significant impacts, and would not be worth its high cost. Please know that support is far from unanimous among those whose access to Kodiak would be improved by the project.
Brenda Schwantes	10.24.18	General support	I am a home owner on Anton Larsen Island and support extending the road to Crag Point.
Darron Scott	11.5.18	Year-round access to electric services	Kodiak Electric Association, Inc. (KEA) is the local electric cooperative serving the communities of Kodiak, Port Lions, USCG Base Kodiak, Chiniak, and Pasagshak. KEA provides basically 100% renewable

		Continued electric service to communities	energy to these communities by two means: the Pillar Mountain Wind Project and the Terror Lake Hydroelectric Project. Terror Lake Hydro is the main supply and the backbone of the electric grid. It is accessed by a road at the head of Kizhuyak Bay. Good access is critically important for the operations and maintenance of Terror Lake Hydro. One route to Kizhuyak Bay is through Anton Larsen. Improving this access as presented in this plan will be positive for KEA and its access to Terror Lake Hydro. This project would reduce our cost of operations, especially allowing for year-round access. This will provide significantly more flexibility to transportation logistics in the future; particularly in winter.
William Powers	11.8.18	Resolution No. FY2019-11 Borough Planning	The Kodiak Island Borough is the regional government of the Kodiak Archipelago in Alaska. The Kodiak Island Borough Assembly adopted Resolution No. FY2019-11 identifying local capital improvement project priorities on November 1, 2018. Included in this list of eight projects was the Anton Larsen Bay Road Extension project.
John Sturgeon	10.24.18	Alternate ice free access for use in supplying existing logging operation	Koncor Forest Products Co. has been logging on Afognak Island since the early 70's. We have a camp of approximately 70 workers in a camp near Danger Bay. We are very much in favor of the Anton Larsen Road Extension. It would provide an alternative ice-free port to supply our logging operation and for workers to and from Kodiak.
John Stella	10.25.18	Access Emergency Services Recreational Resources	I am opposed to the Anton Larsen Bay Road Extension. This is a cynical attempt by a small number of people to financially benefit at the expense of the taxpayer. It will take millions of dollars to do this project that has essentially no economic benefit. Some of the proponents claim that the road is necessary for access to emergency medical services. Right now those emergencies are flown into Kodiak by the Coast Guard. The approach to Larsen Bay by boat is not substantially improved as opposed to the West marine approach around Spruce Island. There is also an existing launch already at the end of the road, which was recently improved at the urging of the same people who now want the new road. The natives on Kodiak opposed the enlargement of the airport which would make it safer for all weather flights. They weren't worried about evacuations then and used the airport expansion to extort a land exchange with the state and FAA to the natives. This was reported by the local newspaper. The new road will also be built over an excellent existing hiking trail, which runs from the current road end to a secluded cove at Kizhuyak Bay. The trail is 4 miles each way and 400-500 ft. elevation gain each way. There are few other gradual trails like this on an island that is mostly mountains. There is a salmon stream with associated bears, deer, and foxes not as commonly seen elsewhere on the island's road system. I hiked this trail at least twenty times this summer and saw some of the above mentioned animals every time that I went. The project as proposed will significantly shorten this hiking trail. This is a very expensive project benefitting a very small number of people using taxpayer money. This project will also damage/replace a great hiking trail. It should be rejected as necessary. Tribal avarice knows no bounds. In summary this project will be, an unnecessary, little used, financial boondoggle, paid for by the taxpayer.
Leslie Stella	10.25.18	Access Existing Emergency Transport System Emergency Services Recreational Resources Secondary Development	Thank you for your very helpful open house at the Kodiak Library. I have lived in Kodiak for 7 years, and personally enjoy the hike/walk to Three Pillar Point. I've hiked that route at least 20 times, in spring, summer, and fall. With only a ~400' elevation gain/loss, it is a delight. With the geotrack, it doesn't get very muddy-so really all weather trail. It is lightly used, with more foot traffic using it at salmonberry picking season. People in Kodiak don't actually "recreationally" use ATV's, rather ride them to support either fishing or hunting, so **ATV use on this trail is pretty much limited to hunting season.** I don't see an extension really changing this, except, an extension of Anton Larsen Bay Road would require making a new staging area for ATV's and hiking parking. The existing Anton Larsen Bay Road is poorly maintained during the winter-last priority for any version of snow removal. As noted in your teams tour of the area, about a mile short of the current end point, there is a newly improved boat ramp as well as trailer storage and space for parking for "town cars" belonging to remote residents. Drive time to Kodiak City is roughly an hour without snow or ice. I would guess the extension would reduce "boat time" by about 10 minutes, and add about 10 minutes to the drive. So, whether using the current ramp/dock or the proposed ramp/dock, you are talking

			about arriving an hour away from the nearest services – the hospital is in Kodiak City, and if you were ill/injured it would be a pretty long, unpleasant ride into town. The water route from Ouzinkie to Kodiak is less than an hour. And, then, you are in town. Yes, there is a stretch of open water. However, to get from Ouzinkie to Anton Larsen Bay requires going through the Ouzinkie Narrows Passage, which is winding and shallow, so no picnic either. There is a better case for all weather access to Anton Larsen Bay from Port Lions (or Raspberry Is.), as that is a long haul in bad weather. Consulting a map, there is absolutely no reason to use Anton Larsen Bay as a route to Kodiak City from Afognak Island. Currently, Port Lions and Ouzinkie are served by daily air services (Island Air $64 each way) from Kodiak City. Island Air allows for people to pay for and bring additional cargo. Additionally, Ouzinkie is served by the AK Marine Highway twice weekly-with the option of 20' vehicle + driver of $104 each way. Fare for Port Lions is $119. The ferry services is oriented toward serving the needs of rural residents, usually staying in Kodiak City for about 8 hours to facilitate trips to the doctor, dentist, hair salon as well as grocery/pharmacy before making the return voyage. While the air service is weather dependent, the ferry service is almost never effected. In the overview paragraph, I noticed a reference to "remote logging camps." Presently, the only logging is on Afognak Island, and if you consult a map, you can see that they would not use the Crag Point launch, really for any reason. It is way out of the way. Coast Guard provides medevac service to Kodiak City, which drops the injured at the CG Base for 15 minute transfer to the hospital. For emergency medical service from either Port Lions or Ouzinkie, how would that work? Certainly, a patient would be better off being transported directly to Kodiak City, where the hospital is, rather than to be taken by boat to an unattended boat ramp? Then private car for an hour? For "supporting economic development through efficient access", we need to realize that "if we build it they will come" doesn't always work. There are a number of remote lodges on Raspberry Island, Afognak Island and one in Port Lions. All are open for fishing and hunting season only, as there isn't really any demand for winter tourism here. The lodge in Port Lions uses the existing dock at Anton Larsen Bay, but the others all use facilities in town, the more far flung using float planes but the close using a seamless, pick them up at the airport, drive to the harbor at Near Island, load on a launch, which will also ferry over groceries/supplies. It just came over with departing guests and garbage. I don't see this extension changing this paradigm. If we are talking new development, it should be noted that all the land in that area of the island is owned by Ouzinkie, so we are talking about using Federal dollars to aid specifically one group. For "improving access to recreation and subsistence activities", the reference must be to making an overland route to a launch to take advantage of netting the red salmon run in the Port Lions area. This is done during June, so it is not dependent on an extension which provides an ice free boat ramp/bay. For berry picking, there are tons of locations available. On the one hand, I would like to see the road system on Island grow. On the other hand, I just don't see this project as being good stewardship of Federal dollars. Or State dollars. Or Borough dollars.
Susan and Don Dumm	11.25.18	Access Road Maintenance Economic Development Emergency Services Recreational Resources Alternative Options	Our comments are for the Anton Larsen Bay Road Extension Project and the Environmental Assessment process. We are residents of Anton Larsen Island and find this road extension to be unnecessary. Because DOT does not currently maintain the road adequately in any season and likely will not in the future, the project purposes and needs are flawed. Most subsistence and recreation activities occur in the ice-free spring/summer/fall so access to ice free water is unnecessary most of the year. We would like to hear of the various ways this project will bring economic development, who will benefit, and for how long? What additional infrastructure needs will there be: breakwater, dock, dredging, gravel pits, lodge? What Kodiak Island Borough codes must be adhered to and permits obtained? These should be identified and prices for the public, especially adjacent property owners, before the road expenditure is made.

			We understand that Ouzinkie Native Corporation as a private land owner has the right to develop as they wish within existing codes, but not at public expense and not without review by the Kodiak Island Borough Planning and Zoning process. In order to assess and provide comments on the impacts of this project, we need to know the full extent of development before construct begins. In the past, Anton Larsen residents have requested a comprehensive plan for the area and this is why that process is important. Right-of-ways, easement, and maintenance agreements need to be finalized before a rock is turned and dollars are dedicated, if the project is publicly funded. Public dollars should not be given for a private road. These agreements should include easement to ice free water for Anton Larsen Island residents. The fish surveys, invasive species inventory, and wetland delineation for this project are at least two years old and now outdated. In the last two years, we have seen dramatic climate change impacts. Extending road access expands the reach of invasive species like rats, which are a major concern for nesting birds. The small island around Anton Larsen and in Kizhuyak are major breeding areas for many seabirds. Not considered in the original DOT scoping phase are two better options closer to Kodiak: an extension of the White Sands Road to a point across from Ouzinkie and the Fort Abercrombie boat launch site. Both options would be more protected from the northeast winds, provide access to ice free water, and are closer to emergency and clear winter road infrastructure. The option that ends across from Ouzinkie would allow Kodiak Electric Association to extend electricity to Ouzinkie providing economic benefits to that community.
Kyle Crow (kylecrow@yahoo.com) posted to the online map		Access Maintenance Need	This road extension is necessary to allow the residents of all the rural cities and villages located on the north side of Kodiak Island (Ouzinkie, Port Lions, and Larsen Bay) with year round access to Kodiak's road system and the services that are only provided and available on the road system, including: emergency and scheduled medical care providers, educational opportunities, library, arts, and entertainment opportunities, access to government representatives and meetings, family and friends, expanded social opportunities, grocery and hardware stores and a lumber yard, contractors and tradesmen, and general commerce. Currently access is only available during summer months when Anton Larsen Bay is ice free and the road is not impassable due to ice and snow. The road is not currently maintained during winter months because there isn't much point in it with the Bay being frozen over. However, with a road extension to ice free water there would be a need to maintain the road as people would be regularly suing it.
Daniel Foster (Daniel.mckenna.foster@gmail.com) posted to the online map		Use/Capacity Cost Purpose & Need	I bike and hike out here – more road miles is good for me. But I have a few questions about this: 1. How many people are expected to use this road on a daily, weekly, or monthly bases? 2. How much might this road cost to build, and how much might it cost in annual maintenance (and who will be paying to maintain it)? 3. How many people are expected to directly benefit from this road? Are there any other projects in Kodiak which might benefit a greater number of Borough citizens? 4. What data shows a demonstrable need for this road? 5. What if in the future winters Anton Larsen Bay doesn't ice over anymore?
Jeff Wadle (kodjaws@gmail.com) posted to the online map		Purpose and Need	I support this road extension for many reasons that were brought up in previous comments. I personally use this road almost every weekend if weather permits and if Anton Larsen is ice free during the summer and winter months. This is an important and less expensive means for people from the village to get into town. It is important to remember this is an environmental assessment only and not a scope for funding.
Gina (ginaj@ptialaska.net) posted to the online map		Access	I have lived in Kodiak for almost 46 years. Am a life long Alaskan and understand being isolated and living in a remote area. I feel this road extension is long over due. Despite Port Lions and Ouzinkie having ferry service, it's all weather permitting. There have been numerous times the ferry has had to bypass the villages. The weather may not be safe enough to fly. Or to travel to Kodiak by water. This is another option for safer and quicker access to Kodiak. Not only for people from the village, but Island wide, as well as Afognak, Raspberry and Shuyak Islands. This fall a local airways had to fly in and out of Anton Larsen Bay due to the City of Kodiak being fogged in. They could still

			safely conduct business. And had a fuel truck staged in Anton Larsen Bay. As for safely traveling on this road in winter time. If need be a snow machine could be used or ATV if the road is not passable. If the weather is such, maybe no one should be traveling on it. If the road is extended, it will be used. Maybe the Anton Larsen Bay road would be utilized more so since the extension would allow more traffic if the bay is iced up. Ice in the bay can stay literally for months. Days get short and this would save valuable time to travel to and from destinations much more safely. Some people don't like change and will resist. But overall this would be a positive changes. It is being planned out in a respectful, well thought out way.
Stosh Anderson (dictated to Heather Campfield at Kodiak public meeting)		General support	The proposed road extension to ice free areas would benefit rural communities and residence of Kodiak and support the fishing industry. Design should provide space for a dock, a boom truck, and for freighters.
Andy & Petrina Peterson		General support	I am requesting a driveway be installed along with the road project to both lots that will be adjacent to the road right-of-way. Lots 1 & 2.

U.S. Department of Transportation
Federal Highway Administration

ANTON LARSEN BAY ROAD EXTENSION

Kodiak, Alaska

Please share your comments. Comments can also be e-mailed to **melissa.j.hogan@dot.gov**. For more project information, visit: **www.wfl.fhwa.dot.gov/projects/ak/anton-larsen/**

This is a very expensive project benefittin a very small # of people using taxpayer money. This project will also damage / replace a great hiking trail. It should be rejected. as unessesary. Tribal avarice knows no bounds.

Name: John Stella

E-mail: captains200@yahoo.com

Address: P.O. Box 8895

City: Kodiak State: AK Zip: 99615

Please add me to the project e-mail list. ☒

U.S. Department of Transportation
Federal Highway Administration

ANTON LARSEN BAY ROAD EXTENSION

Kodiak, Alaska

Please share your comments. Comments can also be e-mailed to **melissa.j.hogan@dot.gov**. For more project information, visit: **www.wfl.fhwa.dot.gov/projects/ak/anton-larsen/**

I am requesting a driveway be installed along with the road project to both lots that will be adjacent to the road right of way.

Lots 1 & 2

Andy & Petrina Peterson

Name: _____

E-mail: _____

Address: _____

City: _____ State: _____ Zip: _____

Please add me to the project e-mail list. ☐

Heather A. Campfield

Subject: FW: Anton Larsen Bay Road Extension Project--Kodiak City

From: Leslie Stella [mailto:rivershore1507@yahoo.com]
Sent: Thursday, October 25, 2018 7:46 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Bay Road Extension Project--Kodiak City

Dear Ms. Hogan;

Thank you for your very helpful open house at the Kodiak Library.

I have lived in Kodiak City for 7 years, and personally enjoy the hike/walk to Three Pillar Point. I've hiked that route at least 20 times, in spring, summer and fall. With only a ~400' elevation gain/loss, it is a delight. With the geotrack, it doesn't get very muddy-so really all weather trail. It is lightly used, with more foot traffic using it at salmonberry picking season. People in Kodiak don't actually "recreationally" use ATV's, rather ride them to support either fishing or hunting, so ATV use on this trail is pretty much limited to hunting season. I son't see an extension really changing this, except, an extension of Anton Larson Bay Road would require making a new staging area for ATV's and hiking parking.

The existing Anton Larson Bay Road is poorly maintained during the winter-last priority for any version of snow removal. As noted in your teams tour of the area, about a mile short of the current end point, there is a newly improved boat ramp as well as trailer storage and space for parking for "town cars" belonging to remote residents. Drive time to Kodiak City is roughly an hour, without snow or ice. I would guess the extension would reduce "boat time" by about 10 minutes, and add about 10 minutes to the drive. So, whether using the current ramp/dock or the proposed ramp/dock, you are talking about arriving an hour away from the nearest services-the hospital is in Kodiak City, and if you were ill/injured it would be a pretty long, unpleasant ride in to town.

The water route from Ouzinke to Kodiak City is less than an hour. And, then, you are in town. Yes, there is a stretch of open water. However, to get form Ouzinke to Anton Larson bay requires going through the Ouzinke Narrows Passage, which is winding and shallow, so no picnic either. There is a better case for all weather access to Anton Larson Bay from Port Lions (Or Raspberry Is), as that is a long haul in bad weather. Consulting a map, there is absolutely no reason to use Anton Larson Bay as a route to Kodiak City from Afognak Is.

Currently, Port Lions and Ouzinke are served by daily air service (Island Air $66 each way) from Kodiak City. Island Air allows for people to pay for and bring additional cargo. Additionally, Ouzinke is served by the AK Marine Highway twice weekly-with the option of 20' Vehicle + driver of $104 each way. Fare for Port Lions is $119. The ferry service is oriented toward serving the needs of rural residents, usually staying in Kodiak City for about 8 hours to facilitate trips to the doctor, dentist, hair salon as well as grocery/pharmacy before making the return voyage. While the air service is weather dependent, the ferry service is almost never effected.

In the overview paragraph, I noticed a reference to "remote logging camps." Presently, the only logging is on Afognak Island, and if you consult a map, you can see that they would not use the Crag Point launch, really for any reason. It is way out of the way. Coast Guard provides medevac service to Kodiak City, which drops the injured at the CG base for 15 minute transfer to the hospital.

For emergency medical service from either Port Lions or Ouzinke, how would that work? Certainly, a patient would be better off being transported directly to Kodiak City, where the hospital is, rather than to be taken by boat to an unattended boat ramp? Then private car for an hour?

For "supporting economic development through efficient access", we need to realize that "if we build it they will come" doesn't always work. There are a number of remote lodges on Raspberry Is, Afognak Is and one in Port Lions. All are open for fishing & hunting season only, as there isn't really any demand for winter tourism here. The lodge in Port Lions uses the existing dock at Anton Larson Bay, but the others all use facilities in town, the more far flung using float planes but the closer using a seamless, pick them up at the airport, drive to the harbor at Near Island, load on a launch, which will also ferry over groceries/supplies. It just came over with departing guests and garbage. I don't see this extension changing this paradigm.

If we are talking new development, it should be noted that all the land in that area of the island is owned by Ouzinke, so we are talking about using Federal dollars to aid specifically one group.

For "improving access to recreation and subsistence activities", the reference must be to making an overland route to a launch to take advantage of netting the red salmon run in the Port Lions area. This is done during June, so it is not dependent on an extension which provides an ice free boat ramp/bay. For berry picking, there are tons of locations available.

On the one hand, I would like to see the road system on Island grow. On the other hand, I just don't see this project as being good stewardship of Federal dollars. Or State dollars. Or Borough dollars.

Thank you for your time and your consideration,
Leslie Stella
PO BOX 8895
Kodiak, AK 99615

Heather A. Campfield

Subject: FW: Anton Larsen Bay road extension

From: john stella [mailto:captains200@yahoo.com]
Sent: Thursday, October 25, 2018 4:12 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Bay road extension

Dear Ms. Hogan,

I am opposed to the Anton Larsen Road extension. This is a cynical attempt by a small number of people to financially benefit at the expense of the taxpayer. It will take millions of dollars to do this project that has essentially no economic benefit.

Some of the proponents claim that the road is necessary for access to emergency medical services. Right now those emergencies are flown into Kodiak by the Coast Guard. The approach to Larsen Bay by boat is not substantially improved as opposed to the West marine approach around Spruce Island. There is also an existing launch already at end of the road, which was recently improved at the urging of the same people who now want the new road.

The natives on Kodiak opposed the enlargement of the airport which would make it safer for all weather flights. They weren't worried about evacuations then and used the airport expansion to extort a land exchange with the state and FAA to the natives. This was reported by the local newspaper.

The new road will also be built over an excellent existing hiking trail, which runs from the current road end to a secluded cove at Kizhuyak Bay. The trail is 4 miles each way and 400-500 ft. elevation gain each way. There are few other gradual trails like this one on an island that is mostly mountains. There is a salmon stream with associated bears , deer and foxes not as commonly seen elsewhere on the island's road system. I hiked this trail at least twenty times this summer and saw some the above mentioned animals every time that I went. The project as proposed will significantly shorten this hiking trail.

In summary this project will be, an unnecessary, little used, financial boondoggle, paid for by the taxpayer.

Thank you for your consideration of this statement,

John Stella MD
PO Box 8895
Kodiak, AK 99615

captains200@yahoo.com

505-328-3905

KODIAK ELECTRIC ASSOCIATION

KODIAK ELECTRIC ASSOCIATION, INC.

P.O. BOX 787, KODIAK, AK 99615-0787
(907) 486-7700

November 5, 2018

Melissa J. Hogan
FHWA Western Federal Lands
Highway Division
610 East Fifth Street
Vancouver, WA 98661-3801

Dear Ms. Hogan,

Kodiak Electric Association, Inc. (KEA) is the local electric cooperative serving the communities of Kodiak, Port Lions, USCG Base Kodiak, Chiniak, and Pasagshak. KEA provides basically 100% renewable energy to these communities by two means: the Pillar Mountain Wind Project and the Terror Lake Hydroelectric Project. Terror Lake Hydro is the main supply and the backbone of the electric grid. It is accessed by a road at the head of the Kizhuyak Bay.

Good access is critically important for the operations and maintenance of Terror Lake Hydro. One route to Kizhuyak Bay is through Anton Larsen. Improving this access as presented in this plan will be positive for KEA and its access to Terror Lake Hydro. This project would reduce our cost of operations, especially allowing for year-round access. This will provide significantly more flexibility to transportation logistics in the future; particularly in winter.

Thank you for the opportunity to comment on this project. Please let me know if you have any questions. You can contact me at dscott@kodiak.coop or at 907-486-7739.

Sincerely,

Darron Scott
President/CEO
Kodiak Electric Association, Inc.

Heather A. Campfield

Subject: FW: Anton Larsen Road Extension

From: Will Dumm [mailto:wdumm88@gmail.com]
Sent: Tuesday, November 20, 2018 2:28 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Re: Anton Larsen Road Extension

Hi Melissa,

Thank you for your clear explanation of the process. It took me awhile to put together my comments. Here is a slightly longer version of the comments which I submitted to the map comment page. I'd appreciate confirmation of receipt when you have a chance.

I am a resident of Anton Larsen Island, and I oppose this road extension. The existing road is minimally maintained despite extremely heavy use. The road often is left impassable for multiple days after winter storms, even when the bay is ice-free and the existing dock is accessible to travelers from Port Lions and Ouzinkie. Significant improvement to road system access via the Anton Larsen Bay road could be achieved by increased funding for road maintenance to the recently rebuilt Anton Larsen Bay dock. Necessary funding for road construction, a new dock, parking area, and breakwater would be far out of proportion to the project's benefits. The road extension would replace a popular ATV and hiking trail, threaten archaeological sites, and extensively develop an area which Kodiak residents currently enjoy largely untouched.

Rural residents certainly have a right to accessible emergency services and medical care, within practical limits. For rural Northwest Kodiak Island, these needs are already well met. Residents of Ouzinkie and Port Lions seeking access to Kodiak have an exceptional set of options, including a short skiff ride directly to town, multiple daily scheduled commercial flights, and ferry service to Port Lions. Supporters of this road extension rightly claim it will make travel cheaper and more convenient, but only minimally so. Residents seeking urgent medical care already have access to town, except in the most extreme winter weather. For less urgent access, waiting for weather to allow boat travel to town is a minor inconvenience during the increasingly infrequent winters when bay ice makes the existing Anton Larsen Bay dock inaccessible. Realistically, this road extension would provide significant benefit only during the few days during years when Anton Larsen Bay is frozen, on which extreme weather makes flying, ferry travel, and boating directly to Kodiak impossible. Even on these days, weather must still allow Ouzinkie and Port Lions residents to travel by boat to Anton Larsen Bay.

I do personally understand the benefits of this project. When the bay is frozen, my family walks the existing ATV trail from ice-free water to the road. When the entire road was impassable, we have skied from Anton Larsen to town to catch flights. We've had medical emergencies while the bay was frozen. However, there’s a misconception that rural residents are unjustly underserved, and entitled to improved access to services available on the road system. In reality, we all gladly accepted these inevitable shortcomings in service when we chose to live remotely. To demand drastic expansion of services is to deprive ourselves and our neighbors on Northwest Kodiak of the right to choose a rural way of life. We all have the cheaper, safer option to live on a reliably maintained part of the road system.

This road extension would have significant impacts, and would not be worth its high cost. Please know that support is far from unanimous among those whose access to Kodiak would be improved by the project.

Thanks for taking my comments, and happy Thanksgiving!

Will

Heather A. Campfield

Subject: FW: Anton Larsen Road Extension Comments

From: Susan and Don Payne/Dumm [mailto:sourdoughsolar@gmail.com]
Sent: Sunday, November 25, 2018 8:55 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Road Extension Comments

Dear Ms. Hogan,
Please enter our comments on the Anton Larsen Road Extension Project and send us an email receipt. Thank you!

Melissa Hogan, FHWA Environmental Specialist
Email: Melissa.j.hogan@dot.gov
Phone: (360) 619-7735

November 19, 2018

Dear Ms. Hogan,

Our comments are for the Anton Larsen Road Extension Project and the Environmental Assessment process. We are residents of Anton Larsen Island and find this road extension to be unnecessary.

Because DOT does not currently maintain the road adequately in any season and likely will not in the future, the project purposes and needs are flawed. Most subsistence and recreation activities occur in the ice-free spring/summer/fall so access to ice free water is unnecessary most of the year. We would like to hear of the various ways this project will bring economic development, who will benefit, and for how long? What additional infrastructure needs will there be: breakwater, dock, dredging, gravel pits, lodge? What KiB codes must be adhered to and permits obtained? These should be identified and priced for the public, especially adjacent property owners, before the road expenditure is made.

We understand that Ouzinkie Native Corporation as a private landowner has the right to develop as they wish within existing codes, but **not at public expense** and not without review by the KIB Planning and Zoning process. In order to assess and provide comments on the impacts of this project, we need to know the full extent of the development before construction begins. In the past, Anton Larsen residents have requested a comprehensive plan for the area and this is why that process is important.

Right-of-ways, easement, and maintenance agreements need to be finalized before a rock is turned and dollars dedicated, if the project is publicly funded. Public dollars should not be given for a private road. These agreements should include easement to ice free water for Anton Larsen Island residents.

The fish surveys, invasive species inventory, and wetland delineation for this project are at least two years old and now outdated. In the last two years, we have seen dramatic climate change impacts.

Extending road access expands the reach of invasive species like rats, which are a major concern for nesting birds. The small islands around Anton Larsen and in Kizhuyak are major breeding areas for many seabirds.

Not considered in the original DOT scoping phase are two better options closer to Kodiak: an extension of the White Sands Road to a point across from Ouzinkie and the Fort Abercrombie boat launch site. Both options would be more protected from the northeast winds, provide access to ice free water, and are closer to emergency and clear winter road infrastructure. The option that ends across from Ouzinkie would allow KEA to extend electricity to Ouzinkie providing economic benefits to that community.

Thank you for considering our comments.

Sincerely,

Susan Payne, PO Box 1903, Kodiak, AK 99615
Don Dumm, PO Box 1723, Kodiak, AK 99615

Kodiak Island Borough
OFFICE of the MANAGER

710 Mill Bay Road
Kodiak, Alaska 99615
Phone (907) 486-9302 Fax (907) 486-9390
E-mail: mpowers@kodiakak.us

November 8, 2018

FHWA
Western Lands Highway Division
Attn: Melissa Hogan
610 East 5th Street
Vancouver, WA 98661

RE: Anton Larsen Bay Road Extension Project

Ms. Hogan,

The Kodiak Island Borough is the regional government of the Kodiak Archipelago in Alaska. The Kodiak Island Borough Assembly adopted Resolution No. FY2019-11 identifying local capital improvement project priorities on November 1, 2018. Included in this list of eight projects was the Anton Larsen Bay Road Extension project.

Please feel free to contact me should you wish to receive a copy of the resolution for your records.

Respectfully,

Michael Powers
Manager

MP/mkc

cc: Duncan Fields, Shoreside Consulting

APPENDIX E

Agency Comments

Anton Larsen Bay Road Road Extension

Stakeholder List

Agency	Department/Division	First Name	Last Name	Title	Street Address	City	State	Zip	Phone	Email	Website
Other											
Alutiiq Museum		Patrick	Saltonstall	Curator of Archaeology	215 Mission Road, 1st Floor	Kodiak	AK	99615	844-425-8844 Ext. 18	patrick@alutiiqmuseum.org	https://alutiiqmuseum.org/
City of Kodiak		Aimee	Kniaziowski	City Manager	710 Mill Bay Road	Kodiak	AK	99615	907-486-8640	AKniaziowski@city.kodiak.ak.us	https://www.city.kodiak.ak.us/
City of Port Lions		Kathryn	Adkins	City Clerk					907-454-2332	cityofportlions@gmail.com	
Kodiak Historical Society		Sarah	Harrington	Executive Director	101 E Marine Way	Kodiak	AK	99615	907-486-5908	director@baranovmuseum.org	http://baranovmuseum.org/
Kodiak Island Borough		Bud	Casidy	Director of Community Development	710 Mill Bay Road	Kodiak	AK	99615-6398	907-486-9363	bcassidy@kib.co.kodiak.ak.us	https://www.kodiakak.us/
Soil and Water Conservation District - Kodiak		Blythe	Brown	Project Coordinator	301 Research Court, Room 245	Kodiak	AK	99615	907-486-5574	blythe.brown@kodiaksoilandwater.org	http://www.kodiaksoilandwater.org/index.php
Resource Agencies											
Alaska Department of Commerce, Community, & Economic Development (DCCED)		Jimmy	Smith	Local Government Specialist	550 W. 7th Ave, Suite 1640	Anchorage	AK	99501	907-269-4132	jimmy.smith@alaska.gov	https://www.commerce.alaska.gov/web/
Alaska Department of Environmental Conservation (ADEC)	Division of Spill Prevention and Response, Contaminated Sites	Grant	Lidren	Environ Program Specialist	555 Cordova Street	Anchorage	AK	99501	907-269-8685	grant.lidren@alaska.gov	https://dec.alaska.gov/spar.aspx
ADEC	Division of Water, Alaska Pollutant Discharge Elimination System	James	Rypkema	Storm Water and Wetlands Manager	555 Cordova Street	Anchorage	AK	99501	907-334-2288	jim.rypkema@alaska.gov	https://dec.alaska.gov/water.aspx
ADEC	Division of Water, Wastewater Discharge Authorization, Stormwater and Wetlands	William	Ashton	Environmental Engineer	555 Cordova Street	Anchorage	AK	99501	907-269-7564	william.ashton@alaska.gov	https://dec.alaska.gov/water.aspx
ADEC	Division of Air Quality, Non-Point & Mobile Sources Program	Cindy	Heil	Program Manager	555 Cordova Street	Anchorage	AK	99501	907-269-7579	cindy.heil@alaska.gov	http://dec.alaska.gov/air.aspx
Alaska Department of Fish & Game (ADF&G)	Division of Wildlife Conservation	Larry	Van Daele	Area Biologist	P.O. Box 115526	Juneau	AK	99811-5526	907-465-4110		
ADF&G	Division of Habitat	Generic								dfg.hab.infoanc@alaska.gov	
ADF&G	Division of Habitat	William	Frost	Habitat Biologist	333 Raspberry Road	Anchorage	AK	99518	907-267-2813	william.frost@alaska.gov	
Alaska Department of Natural Resources (ADNR)	Division of Parks and Outdoor Recreation, Land and Water Conservation Fund 6(f)	Jean	Ayers	Grants Administrator	550 West 7th Avenue, Suite 1380	Anchorage	AK	99501-3561	907-269-8694	jean.ayers@alaska.gov	
ADNR	Division of Mining, Land, & Water, Southcentral Regional Office	Monica	Alvarez	Natural Resource Manager	550 West 7th Avenue, Suite 1050	Anchorage	AK	99501-3579	907-269-8145	monica.alvarez@alaska.gov	http://dnr.alaska.gov/mlw/
ADNR	Office of History and Archaeology	Judith	Bittner	Chief	550 West 7th Avenue, Suite 1310	Anchorage	AK	99501	907-269-8700	oha.revcomp@alaska.gov	http://dnr.alaska.gov/parks/oha/
National Marine Fisheries Service (NMFS)		Generic								Hcd.Anchorage@noaa.gov	https://alaskafisheries.noaa.gov/
National Oceanic and Atmospheric Administration (NOAA)	Alaska Regional Office	Gretchen	Harrington	Assistant Regional Manager	P.O. Box 21767	Juneau	AK	99802-1767	907-586-7824	gretchen.harrington@noaa.gov	https://alaskafisheries.noaa.gov/
NOAA	Protected Resources Division and Habitat Conservation	Matthew	Eagleton	Essential Fish Habitat Specialist	222 West 7th Avenue, Box 43	Anchorage	AK	99513	907-271-6354	matthew.eagleton@noaa.gov	https://alaskafisheries.noaa.gov/
U.S. Army Corps of Engineers (USACE)		Generic		Send permit applications and scoping letters						regpagemaster@usace.army.mil	http://www.poa.usace.army.mil/
U.S. Coast Guard (USCG)		James	Helfinstine	Commander, 17th Coast Guard District	P.O. Box 25517	Juneau	AK	99802-5517	907-463-2268	james.n.helfinstine@uscg.mil	https://www.pacificarea.uscg.mil/Our-Organization/District-17/
U.S. Environmental Protection Agency (USEPA)		Jennifer	Curtis	NEPA Reviewer	222 West 7th Avenue, #19 Mail Code: AOO	Anchorage	AK	99513-7588	907-271-6324	curtis.jennifer@EPAmail.epa.gov	https://www.epa.gov/aboutepa/epa-regio
U.S. Fish and Wildlife Service (USFWS)	Endangered Species	Douglass	Cooper	Branch Chief, Ecological Services	4700 BLM Road	Anchorage	AK	99507	907-271-1467	douglass_cooper@fws.gov	https://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/index.htm
USFWS		Generic								ak_fisheries@fws.gov	
Tribal Organizations											
Sun'Aq Tribe of Kodiak		Jeannine	Marsh	CEO, Tribal Administrator	312 W. Marine Way	Kodiak	AK	99614	907-486-4449	ceo@sunaq.org, tribe@ptialaska.net	http://sunaq.org/
Native Village of Port Lions		Arnold	Kewan	President	P.O. Box 69	Port Lions	AK	99550	907-454-2234	nativevillageofportlions@gmail.com	https://portlionstribe.net/
Native Village of Ouzinkie		Alex	Ambrosia	President	P.O. Box 130	Ouzinkie	AK	99644	907-680-2259	ouzclerk@starband.net	http://www.ouzinkie.org/
Afognak Native Corporation (Port Lions)		Chantelle	Bartleson	Lands Assistant	300 Alimaq Drive	Kodiak	AK	99615	907-486-6014	lands@afognak.com	https://www.afognak.com/
Ouzinkie Native Corporation (Ouzinkie)		Dave	Stephens	President	P.O. Box 89	Ouzinkie	AK	99644	907-680-2259; 907-680-2217; 680-2208		http://www.ouzinkie.com/
Natives of Kodiak, Inc. (Kodiak)		James	Erickson	President/CEO	215 Mission Rd., Suite 201	Kodiak	AK	99615	907-486-3606	info@nativesofkodiak.com	https://nativesofkodiak.com/
Koniag, Inc. (Kodiak)		Ron	Unger	Chairman and Interim CEO	194 Alimaq Drive	Kodiak	AK	99615	907-486-2530	runger@koniag.com	https://www.koniag.com/
Koniag, Inc. (Kodiak)		Tom	Panamaroff	VP External Affairs	194 Alimaq Drive	Kodiak	AK	99615		mvandaele@koniag.com	https://www.koniag.com/
Native Village of Afognak		Melissa	Borton	Administrator	115 Mill Bay Road	Kodiak	AK	99615			
Ouzinkie Native Corporation (Ouzinkie)		Crystal	Boskofsky	Board Chairman	P.O. Box 89	Ouzinkie	AK	99644			
Natives of Kodiak, Inc. (Kodiak)		David	Anderson	Vice President	215 Mission Rd., Suite 201	Kodiak	AK	99615			

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Douglass Cooper
Branch Chief Ecological Services
US Fish and Wildlife Services
4700 BLM Road
Anchorage AK 99507

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Cooper,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of Section 7 Endangered Species Act Consultation that would be required on this project. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
2. Participate in coordination meetings and joint field reviews as appropriate.
3. Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

Please respond to FHWA with an acceptance or denial of the invitation (e-mail responses are acceptable). If your agency declines, the response should state your reason for declining the invitation. Pursuant to 23 U.S.C. Section 139, any Federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

- has no jurisdiction or authority with respect to the project;
- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

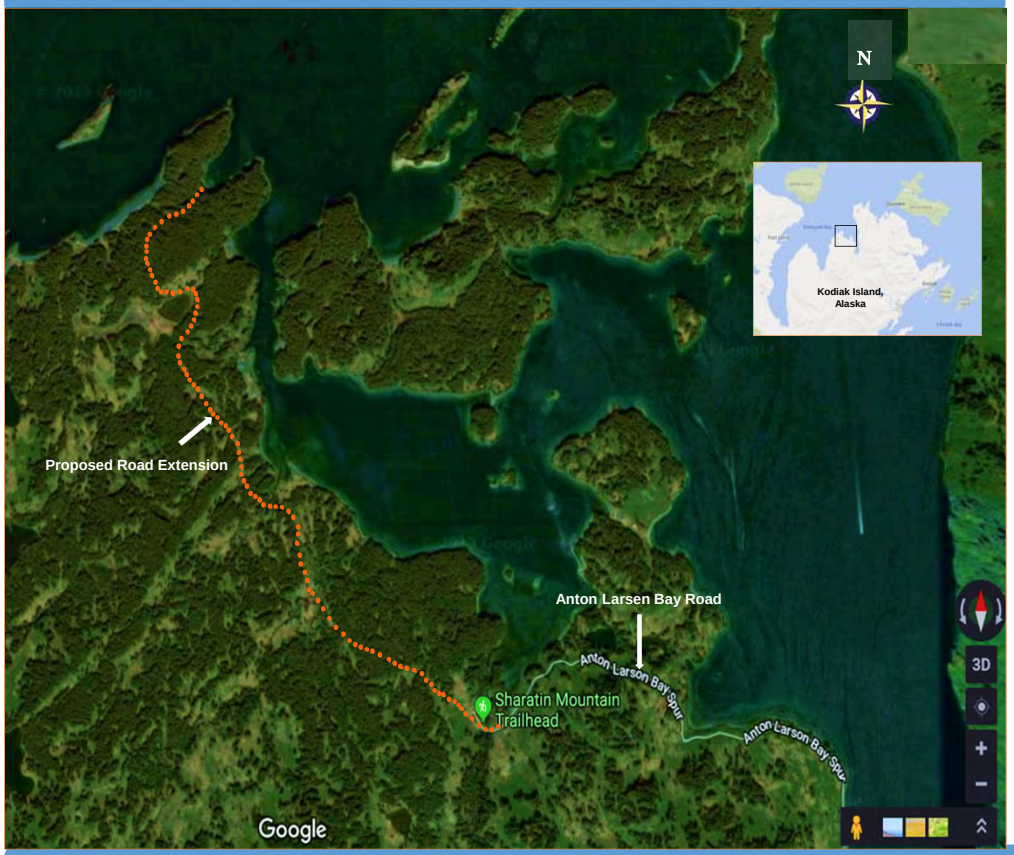
Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

ANTON LARSEN BAY ROAD EXTENSION

PROJECT LOCATION



PROJECT SCOPE

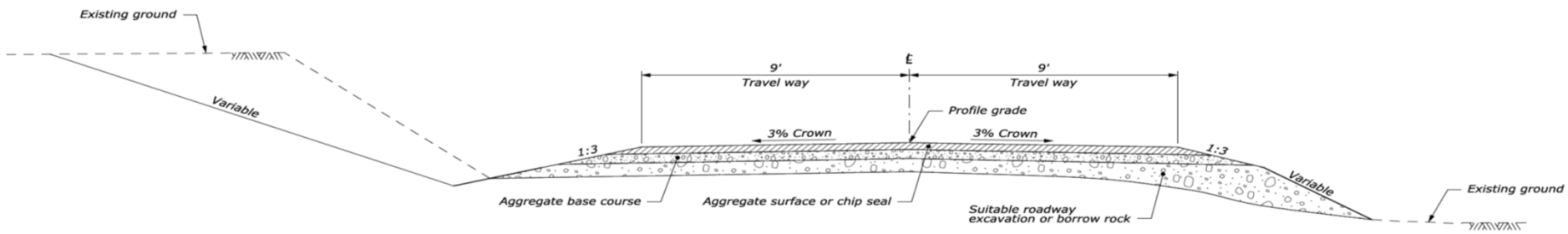
The Western Federal Lands Highway Division of the Federal Highway Administration, in cooperation with the Native Village of Ouzinkie, proposes to extend Anton Larsen Bay Road for approximately two miles to a planned parking area, boat launch and float near Crag Point.

PROJECT PURPOSE & NEED

The purpose of the project is to provide increased access between Kodiak and outlying communities. The proposed additional access to Kodiak fulfills the following needs:

- Increases access to medical & other services offered in Kodiak
- Increases access for those traveling to Kodiak from remote locations
- Increases access to recreation and subsistence activities
- Encourages economic development

TYPICAL SECTION



TYPICAL SECTION

(NTS)

Preliminary Environmental Research

Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Preliminary research has been conducted using the most current available data from state and federal agencies to identify environmental resources within the proposed project study area. The purpose of the preliminary research is to assist in identifying permitting and regulatory requirements and to ensure all environmental considerations are used in developing the proposed project.

Air Quality

According to Alaska Administrative Code 18 AAC 50, Kodiak, Alaska is considered a Class II area, and is not considered an area that regularly exceeds or is near exceeding the health-based National Ambient Air Quality Standards. The two main Environmental Protection Agency criteria pollutants impacting Alaska are carbon monoxide and particulate matter. The project area is not located within or near an area defined by the U.S. Environmental Protection Agency as a Nonattainment Area or Maintenance Area for particulate matter or carbon monoxide (ADEC 2018a).

Biological Resources

Fish

During the summer and fall of 2015, the Alaska Department of Fish and Game (ADF&G) conducted stream surveys along the proposed road right-of-way and documented anadromous fish in three previously undocumented streams and resident fish in one stream (ADF&G 2015). The ADF&G *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* has been updated to include the anadromous streams documented during the 2015 survey. The proposed road extension will cross Chalet Creek (AWC: 252-38-10080) and associated tributaries. Chalet Creek is known for supporting rearing habitat for coho salmon and spawning habitat for pink salmon (ADF&G 2018a).

The existing portion of Anton Larson Bay Road crosses Small Creek (AWC: 252-38-10070). Existing culverts in Small creek do not meet ADF&G design standards for fish passage and may not meet the Alaska Department of Transportation and Public Facilities (DOT&PF) hydraulic requirements for the culvert's drainage basin. The ADF&G has requested that the culverts be replaced with a crossing structure designed to meet fish passage and hydraulic criteria.

Consultation with ADF&G and a Fish Habitat Permit will be required for the crossing structures or culvert placements in fish-bearing waters. In addition, consultation with the National Marine Fisheries Services (NMFS) and an Essential Fish Habitat Assessment may be required for the project.

Eagles and Eagle Nests

Eagles and eagle nesting habitat are both present throughout the project area. According to ADF&G, the range of bald and golden eagles overlaps the project area (ADF&G 2018b). An eagle nest survey was conducted for the proposed road alignment right-of-way. The closest nest identified was approximately 0.46-mile from the proposed road alignment. If an eagle or eagle's nest is identified within 660 feet of a project area, consultation with the U.S. Fish and Wildlife Service (USFWS) will be conducted to determine if an Eagle take permit is appropriate. In addition, the project will follow the mitigation guidance outlined in the *National Bald Eagle Management Guidelines* (USFWS 2007).

An eagle nest survey will be conducted prior to construction to document current conditions in the project area.

Threatened and Endangered Species

According to the USFWS's Information for Planning and Consultation (IPaC) decision support tool, the northern sea otter (*Enhydra lutris kenyoni*) (threatened) and short-tailed albatross (*Pheobastria albatrus*) (endangered) are both present within, or in the vicinity of, the proposed project corridor (USFWS 2018a). In addition, designated critical habitat area has been established for the northern sea otter within the waters of Anton Larsen Bay.

Listed marine mammals under the jurisdiction of National Marine Fisheries Service (NMFS) that could occur in the adjacent marine waters include Steller sea lion (western DPS), northern pacific right whale, sperm whale, humpback whale, fin whale, gray whale, as well as various dolphins and seals. These species can be protected both under the ESA and the Marine Mammal Protection Act.

Section 7 consultation with the USFWS and the NMFS will be required for the project. The FHWA is in the process of completing a biological assessment.

Migratory Bird Habitat

According to USFWS's IPaC decision support tool, the following are noted of particular concern because they occur on the USFWS Bird of Conservation Concern list and may warrant special attention within the project area (USFWS 2018a):

- Bald Eagle (*Haliaeetus leucocephalus*)
- Black Oystercatcher (*Haemotopus bachmani*)
- Black-legged Kittiwake (*Rissa tridactyla*)
- Double-crested Cormorant (*phalacrocorax auritus*)

To avoid adverse impacts to migratory birds, vegetation clearing will follow the USFWS *Recommended Time Periods for Avoiding Vegetation Clearing in Alaska* unless the USFWS has been consulted to determine the most appropriate clearing methods to avoid impacts to nesting migratory species (USFWS 2017). The recommended time period for avoiding vegetation clearing for the proposed project area follow:

- Forest or Woodland – April 15th - July 15th
    - Note: raptors may nest two or more months earlier than other birds.
- Shrub or Open Habitat - May 1st – July 15th
    - Note: raptors may nest two or more months earlier than other birds.
    - Canada geese and swans begin nesting April 20th.
- Seabird Colonies – April 15th – September 7th
- Eagle Habitat - March 1st and August 31st

<u>Department of Transportation Act, Section 4(f)</u>

According to the Alaska Department of Natural Resources (ADNR) Division of Parks and Outdoor Recreation, there are no state parks located in the vicinity of the proposed project (ADNR 2018a). There is, however, a maintained trailhead located near Small Creek, within the project corridor, along the existing section of Anton Larsen Bay Road. The trailhead is referenced locally as Sheratin Mountain Trailhead and is used by hikers to traverse Anton Larsen Bay Trail or hike to the peak of Sheratin Mountain.

Public use lands associated with the U.S. Bureau of Land Management and the U.S. Forest Service were not identified in close proximity to the proposed project area during preliminary research conducted.

The proposed project area is not located near to, or within, a national park (NPS 2018a).

ADF&G website indicates there are no conservations areas, include game refuges, wildlife sanctuaries, or wildlife ranges in the vicinity of the project (ADF&G 2018c).

The USFWS has designated approximately 3.4 million acres of the Aleutian chain to the Alaska Maritime National Wildlife Refuge. The refuge was established as a conservation measure for marine mammals, seabirds, and other migratory birds, as well as the marine resources they rely upon (USFWS 2018b). Though the project area falls outside the established boundary of the refuge, the islands of Kodiak are included in the refuge. Areas of the refuge are in close proximity to the proposed project.

The FHWA will evaluate the presence of Section 4(f) resources located within or adjacent to the proposed project area and will identify potential impacts that will occur due to the project.

Hazardous Material, Solid Waste, and Pollution Prevention

According to ADEC's contaminated sites database, there are no known contamination sites located within or near the proposed project corridor (ADEC 2018b). Should any contamination be identified during construction consultation with ADEC will be required.

Historical, Architectural, Archaeological, and Cultural Resources

According to the NPS, National Register of Historic Places (NRHP), there are no known cultural/historic sites listed on the NRHP (NPS 2018b).

The DOT&PF completed a Draft Cultural Resource Reconnaissance Report for the proposed road extension in June 2014. The report identified several cultural, historical, and archaeological sites in the vicinity of the proposed project corridor. The greatest potential to impact identified resources is likely to occur near the end of the project where areas of former cultural activity were documented (DOT&PF 2014).

Consultation with the ADNR's State Historic Preservation Office (SHPO) and other consulting parties per Section 106 of the National Historic Preservation Act (NHPA) will be required during development of the environmental document.

Land Use

The proposed 2-mile road extension is entirely on lands owned by Ouzinkie Native Corporation, with the exception of the transition zone where the proposed road extension ties into the existing road.

According to the ADNR there are no identified R.S. 2477 Historic Transportation Routes located within the project area (ADNR 2018b).

Water Resources

Wetlands and Waters of the U.S.

A review of the USFWS National Wetland Inventory and existing aerial imagery indicated the presence of wetlands within the proposed corridor for the 2-mile road extension (USFWS 2018c). These wetlands have hydrological connectivity to Anton Larsen Bay and are, therefore, defined as a water of the U.S. and are subject the U.S. Army Corps of Engineers (USACE) jurisdiction.

In June, 2016, the DOT&PF completed a wetlands delineation and mapping for the proposed road extension (Bosworth 2016). Based on preliminary engineering the wetlands delineation identified that the proposed road extension would impacts wetlands and streams (seasonal and perennial). More detailed impact assessment will be conducted during development of the environmental document.

The project will require coordination with the USACE to obtain a jurisdictional determination as well as a Section 404 permit for impacts to wetlands. A Certificate of Reasonable Assurance will be obtained from the Alaska Department of Environmental Conservation (ADEC) to meet Section 401 requirements.

Floodplains

Federal Emergency Management Agency (FEMA) has not completed a study to determine flood hazards in this area; therefore, a flood map has not been published (FEMA 2018).

Navigable Waters

According to the ADNR Alaska Mapper - Navigable Waters website and the U.S. Coast Guard (USCG), there are no navigable waters near the proposed project area (ADNR 2018c, USCG 2012, USACE 1995).

Ground Water

A review of ADEC Drinking water Protection Areas did not identify any water rights within the project area (ADEC 2018c).

References

ADEC. 2018a. Air Non-Point & Mobile Sources. Last accessed September 28, 2018. http://dec.alaska.gov/air/anpms/communities/pm10-rural/.

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ADF&G 2015. State of Alaska Department of Fish and Game Division of Habitat: December 9, 2015 Memorandum RE: Anton Larsen Bay Road Extension. Correspondence from Michael J. Daigneault, Regional supervisor Central Region Office to Jill Taylor, Environmental Analyst Department of Transportation.

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ADF&G. 2018c. Refuges, Sanctuaries, Critical Habitat Areas & Wildlife Refuges. Last accessed on September 29, 2018. http://www.adfg.alaska.gov/index.cfm?adfg=conservationareas.locator.

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FEMA. 2018. FEMA Flood Map Service Center. Last accessed September 29, 2018. https://msc.fema.gov/portal/search.

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USACE. 1995. Corps of Engineers Alaska District Navigable Waters. Last accessed September 29, 2018. http://www.poa.usace.army.mil/Portals/34/docs/regulatory/NavWat.pdf.

USCG. 2012. Navigable Water of the United States within the Seventeenth Coast Guard District. Last accessed September 29, 2018. https://www.pacificarea.uscg.mil/Portals/8/District%2017/Sector%20Anchorage/PREVENTION/WWM/D17_ListofNavigableWaters_MAR2012.pdf?ver=2018-01-15-231606-937.

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USFWS. 2017. Timing Recommendations for Land Disturbance & Vegetation Clearing. Last accessed September 25, 2018. https://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/pdf/USFWS%20Timing%20Recommendations%20for%20Land%20Disturbance%20&%20Vegetation%20Clearing.pdf.

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USFWS. 2018b. Alaska Maritime National Wildlife Refuge Alaska. Last Accessed September 29, 2018. https://www.fws.gov/refuge/Alaska_Maritime/about.html.

USFWS. 2018c. National Wetland Inventory. Last accessed September 29, 2018. https://www.fws.gov/wetlands/data/Mapper.html.

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Jennifer Curtis
NEPA Reviewer
US Environmental Protection Agency
222 W 7th Ave #19 Mail Code AOO
Anchorage AK 99513-7588

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Curtis,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
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- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
2. Participate in coordination meetings and joint field reviews as appropriate.
3. Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

Please respond to FHWA with an acceptance or denial of the invitation (e-mail responses are acceptable). If your agency declines, the response should state your reason for declining the invitation. Pursuant to 23 U.S.C. Section 139, any Federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

- has no jurisdiction or authority with respect to the project;
- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Matthew Eagleton
Essential Fish Habitat Specialist
NOAA National Marine Fisheries Service
PO Box 43
Anchorage AK 99513

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Eagleton,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of Section 7 Endangered Species Act Consultation that would be required on this project with the National Marine Fisheries Service. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
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To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Gretchen Harrington
NOAA National Marine Fisheries Service
Alaska Regional Office
PO Box 21767
Juneau AK 99802

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Harrington,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of Section 7 Endangered Species Act Consultation that would be required on this project with the National Marine Fisheries Service. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

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- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

James Helfinstine
Commander 17th Coast Guard District
US Coast Guard
PO Box 25517
Juneau AK 99802-5517

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Helfinstine,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of the boat ramp and float infrastructure proposed within the water at Crag Point. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Kathryn Adkins
City Clerk
City of Port Lions
PO Box 110
Port Lions, AK , 99550

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Adkins,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Monica Alvarez
Natural Resource Manager
ADNR/Southcentral Regional Office
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501-3579

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Alvarez,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

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- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Alex Ambrosia
President,
Native Village of Ouzinkie
PO Box 130
Ouzinkie AK 99644

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Ambrosia,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Purpose & Need

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Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

William Ashton
Environmental Engineer
ADEC/Div. of Water, Wastewater Discharge Authorization, Stormwater & Wetlands
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Ashton,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

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Proposed Action

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Environmental Documentation

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Agency Comment Request

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Jean Ayers
Grants Administrator
ADNR/ Division of Parks and Outdoor Recreation
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501-3561

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Ayers,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

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- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

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Agency Comment Request

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Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
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March 20, 2019

In Reply Refer To: HFL-17

Chantelle Bartleson
Lands Assistant
Afognak Native Corporation
300 Alimaq Drive
Kodiak, AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Bartleson,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
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March 20, 2019

In Reply Refer To: HFL-17

Judith Bittner
Chief
ADNR/Office of History and Archaeology
550 West 7th Avenue, Suite 1310
Anchorage, AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Bittner,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Agency Comment Request

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
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Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Blythe Brown
Project Coordinator
Soil and Water Conservation District-Kodiak
301 Research Court, Room 245
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Brown,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Bud Casidy
Director of Community Development
Kodiak Island Borough
710 Mill Bay Road
Kodiak AK 99615-6398

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Casidy,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
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Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

James Erickson
President/CEO
Natives of Kodiak, Inc.
215 Mission Rd., Suite 201
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Erickson,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

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Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
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March 20, 2019

In Reply Refer To: HFL-17

William Frost
Habitat Biologist
ADF&G/ Division of Habitat
333 Raspberry Road
Anchorage, AK 99518

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Frost,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Cindy Heil
Program Manager
ADEC/Division of Air Quality
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Heil,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Arnold Kewan
President
Native Village of Port Lions
PO Box 69
Port Lions AK 99550

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Kewan,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
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March 20, 2019

In Reply Refer To: HFL-17

Aimee Kniaziowski
City Manager
City of Kodian
710 Mill Bay Road
Kodiak, AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Kniaziowski,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Larry Van Daele
Area Biologist
Alaska Department of Fish & Game
PO Box 115526
Juneau AK..99811-5526

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Van Daele,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Existing Conditions

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Grant Lidren
Environ Program Specialist
ADEC/Div of Spill Prevention and Response, Contaminated Sites
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Lidren,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Jeannine Marsh
CEO Tribal Administrator
Sun'Ag Tribe of Kodiak
312 W. Marine Way
Kodiak AK 99614

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Marsh,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Mr. David Anderson
Natives of Kodiak, Inc. (Kodiak)
215 Mission Rd., Suite 201
Kodiak, Alaska 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Anderson,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Ms. Melissa Borton
Native Village of Afognak
115 Mill Bay Road
Kodiak, Alaska 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Borton,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Ms. Crystal Boskofsky
Ouzinkie Native Corporation (Ouzinkie)
P.O. Box 89
Ouzinkie, Alaska 99644

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Boskofsky,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Mr. Tom Panamaroff
Koniag, Inc. (Kodiak)
194 Alimaq Drive
Kodiak, Alaska 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Panamaroff,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

James Rypkema
Stormwater and Wetlands Manager
ADEC/Div. of Water, Alaska Pollutant Discharge Elimination System
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)P

Re: Request for Comments

Dear Mr. Rypkema,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Sarah Harrington
Executive Director
Kodiak Historical Society
101 E. Marine Way
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Harrington,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

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Proposed Action

The project, as proposed, includes:

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Environmental Documentation

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Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Patrick Saltonstall
Curator of Achaeology
Alutiiq Museum
215 Mission Road 1st Floor
Kodiak, AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Saltonstall,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Jimmy Smith
Local Government Specialist
DCCED
550 W. 7th Ave, Suite 1640
Anchorage, AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Smith,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Dave Stephens
President,
Ouzinkie Native Corporation
PO Box 89
Ouzinkie, AK 99644

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Stephens,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
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Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Ron Unger
Chairman and Interim CEO
Koniag, Inc..
194 Alimaq Drive
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Unger,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

Heather A. Campfield

Subject: FW: Anton Larson Bay Road Extension, AK TR OUZI 2017(1) (Activity #07CAAN00-2019-CPA-0046)
Attachments: TIMING TO AVOID NESTING BIRDS.PDF; 20181016 FISH PASSAGE GUIDELINES.pdf

---

From: Hogan, Melissa J (FHWA)
Sent: Tuesday, April 02, 2019 5:15 PM
To: 'Jennifer Spegon' <jennifer_j_spegon@fws.gov>
Cc: elizabeth_benolkin@fws.gov
Subject: RE: Anton Larson Bay Road Extension, AK TR OUZI 2017(1) (Activity #07CAAN00-2019-CPA-0046)

Dear Ms. Spegon,

Thank you for taking the time to write these helpful project comments!

Sincerely,
Melissa

Melissa J. Hogan
Environmental Specialist
FHWA Western Federal Lands
610 East Fifth Street
Vancouver, WA 98661

360-619-7735

From: Jennifer Spegon [mailto:jennifer_j_spegon@fws.gov]
Sent: Tuesday, April 02, 2019 1:50 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Cc: elizabeth_benolkin@fws.gov
Subject: Anton Larson Bay Road Extension, AK TR OUZI 2017(1) (Activity #07CAAN00-2019-CPA-0046)

Dear Ms. Hogan:

Thank you for opportunity to provide comments on the Anton Larson Bay Road Extension Project (Project). The U.S. Fish and Wildlife Service (Service) has reviewed the Federal Highway Admiration (FHWA) initial plans for the Project in accordance with National Environmental Policy Act (NEPA) [(42 U.S.C. 4321-4347 1969) with Implementing Regulations (40 CFR parts 1500-1508)]. The FHWA is contacting other federal agencies to access the depth of continued engagement under the NEPA, and to identify potential issues and mitigation measures to address in their upcoming environmental analysis on this Project.

Thank you for the opportunity to provide this information early in the planning process. Below are measures that may avoid or reduce adverse impacts on fish, wildlife, and their habitat. We recommend including the following considerations in the analysis and in the mitigation measures for this Project.

> The Service provides the attached Alaska Specific Fish Passage Design Guidelines for the proposed replacement of culverts within the project area and potential replacement of culverts on Airport Road. These guidelines can also be found online at: https://www.akfishhabitat.org/.

If there would be unavoidable impacts to wetlands, we would support analysis of in-lieu fee, mitigation banks, and permittee responsible mitigation.
To protect migratory birds and their nests during nesting season, we recommend scheduling vegetation removal and grading of vegetated areas outside the prime migratory bird-breeding season, and recommend minimizing prolonged human presence near nesting migratory birds during construction and maintenance actions, to the extent practicable. Voluntary timing guidelines are attached.
Surface disturbance and transportation corridors function as prime habitat for the spread of invasive species. We recommend conducting invasive species surveys. If invasive species occur in the action area, we recommend management actions be developed and analyzed in the environmental analysis.
We recommend using our automated tool to streamline the Endangered Species Act, section 7 consultation process. The Service's Information, Planning, and Conservation (IPaC) site is a web-based decision support system that allows our partners to explore the landscape and download a preliminary or an official species list. The species list it provides fulfills the requirement, under section 7(c) of the Endangered Species Act, to provide a list of threatened and endangered species upon request for federal actions and NEPA compliance.

I look forward to working with you as a participating agency on this Project. If you have any questions please contact me at the number below.

Thank you,
Jennifer Spegon

Jennifer Spegon
Ecological Services
Anchorage Fish and Wildlife Field Office
U.S. Fish and Wildlife Service
4700 BLM Road
Anchorage, AK 99507
Phone: (907) 271-2768
FAX: (907) 271-2786
jennifer_j_spegon@fws.gov

To expedite requests for U.S. Fish and Wildlife Service consultations and project reviews, send new requests to our central mailbox at: ak_fisheries@fws.gov and copy douglass_cooper@fws.gov

U.S. Fish & Wildlife Service Region 7

Timing Recommendations for Land Disturbance & Vegetation Clearing

Planning Ahead to Protect Nesting Birds

Nesting Seasons by Habitat Type and Region:
Recommended Times to Avoid Land Disturbance & Vegetation Clearing

HABITAT TYPE→ / REGION ↓	Forest or Woodland *(i.e., trees present)*	Shrub or Open *(i.e., shrub cover or marsh, pond, tundra, gravel, or other treeless/shrubless ground habitat)*	Seabird Colonies *(including cliff and burrow colonies)*	Eagles [e]
Southeast	April 15-July 15[a]	May 1-July 15[a, b]	May 1-September 15	March 1-August 31
Kodiak Archipelago			April 15-September 7	
Southcentral *(Lake Illiamna to Copper River Delta; north to Talkeetna)*	May 1-July 15[a, b]			
Bristol Bay/AK Peninsula *(north to Lake Illiamna)*	May 1-July 15[a, b, c]		May 10-September 15	
Interior *(north of Talkeetna to south slope Brooks Range; west to treeline)*	May 1-July 15[a, b]		May 1-July 20[d]	
Aleutian Islands		April 25-July 15[a]	May 1-September 15	
Yukon-Kuskokwim Delta	May 1-July 15	May 5-July 25[a, b, c]	May 20-September 15	
Seward Peninsula	May 1-July 15	May 10-July 20[a, c]		
Northern *(includes northern foothills of Brooks Range)*		June 1-July 31[a, c]		
Pribilof and Bering Sea Islands		May 15-July 15[a]	May 15-September 15	

[a] Raptors may nest two or more months earlier than other birds.
[b] Canada geese and swans begin nesting April 20.
[c] Black scoter are known to nest through August 10.
[d] Seabird colonies in Interior refer to terns and gulls.
[e] Eagles and eagle nests have additional protections under the Eagle Act, and a permit may be required to conduct activities near an eagle nest. You should contact the U.S. Fish and Wildlife Service's Alaska Region Eagle Permit Program (https://www.fws.gov/alaska/eaglepermit/) for further information if an eagle or eagle nest is located in your project area.

USFWS May 2017

FISH PASSAGE DESIGN GUIDELINES October 16, 2018

U.S. Fish and Wildlife Service Alaska Fish Passage Program

Whenever possible, the USFWS supports minimizing the degradation of the ecological continuity of stream corridors and wetlands by choosing transportation routes that avoid the stream crossing altogether or by using longer span structures that do not impact the floodplain. The information provided below describe the basic culvert design guidelines preferred by the U.S. Fish and Wildlife Service (USFWS) Alaska Fish Passage Program when a culvert has been chosen as the stream crossing structure in a fish bearing stream. The Alaska Fish Passage Program, is a voluntary, non-regulatory initiative in the USFWS to provide funding and technical assistance to reconnect aquatic habitats. These guidelines are a modified version of the USDA Forest Service guidelines for Aquatic Organism Passage, or Stream Simulation method.

Users Note: The ability of a structure to pass fish, water and debris is highly dependent on local hydrology, species, life stage, geomorphic setting and other site-specific considerations. The guidelines herein provided, while based on national, state and local experience and studies, are not universally applicable and should not replace site-specific recommendations, limitations or protocols. The guidelines are not intended as an alternative to active consultation with USFWS and application of these guidelines in the absence of consultation does not imply approval by USFWS or other agencies. This document will be updated on a periodic basis to address new research, comments or questions. Please submit comments or questions to heather_hanson@fws.gov or william_rice@fws.gov.

Hydrologic Functioning

- All stream crossing structures in alluvial systems should be designed using an approach that mimics the natural stream characteristics to the greatest extent possible. The USFWS Alaska Fish Passage Program has adopted the United States Forest Service stream simulation approach with the modifications outlined in this document (USFS, 2008). An example design procedure for stable, alluvial channels is also attached as Appendix A. The stream simulation approach is recommended for stable channels, Rosgen type A, B, C or E channels (Rosgen, 1996). Bridges should be used for type D channels if the flow is actively moving between braids. For crossings of relic channels, sloughs, or wetland complexes, design modifications are described below under "Special Conditions."
- Culvert crossings in systems that are actively degrading such as Rosgen F or G channels, should be avoided (Rosgen, 1996). If they cannot be avoided, these channels must be stabilized at least on a reach-length basis to prevent headcut or excessive lateral movement prior to the construction of a new crossing structure.

- Culverts should be designed, constructed, and maintained so as to provide for *hydrologic functioning* of the water body they are crossing, including connectivity of wetlands and riparian areas adjacent to stream channels, to the greatest extent possible. A longer span structure such as a bridge that spans the entire flood plain is the ideal solution for providing hydrologic functioning. (See figure 1). If a bridge is not feasible, floodplain culverts can also be considered to reduce the alteration of wetland hydrology upstream and downstream of the crossing. (See Appendix C for information on the importance of the riparian area for stream health).
- Crossing structures should be designed to accommodate at least the *100-year flood flow*.
- The width of the primary crossing structure should not be less than 1.0 times the bankfull width of the channel.
- Crossing structures should be placed within/over the pre-development natural channel alignment when possible. Road alignment for new roads should be as close to perpendicular to the channel as possible.

Culvert Size, Slope, and Substrate

- Culvert substrate material within/under the crossing structure should remain *dynamically stable* at all flood discharges up to and including a *50-year flood flow*. For culverted crossings without an adequate upstream sediment supply, the substrate material within the crossing should be designed to resist the predicted critical shear forces up to the 100-year flood. For culverts in sand bed channels sediment retention sills may be used if necessary. For culverts with slopes 6% or greater, steps and cascade features should be sized and keyed in so not to move up to the 100 year flow event, but if necessary sills can be used to keep footer rock in place.
- *Culvert slope* should be within 25% of the natural stream slope of the selected reference reach. For example, if a reference reach is 1.0% slope, the minimum design slope of the stream simulation culvert would be .75% and the maximum design slope would be 1.25%.
- Culverts should have a minimum diameter of five feet (5'). This minimum diameter applies for small streams with a bankfull width of five feet or less. For larger streams, a longer span structure (bridge or culvert) should be used that meets the requirements of these guidelines. A bridge should also be considered for small streams in order to provide better floodplain connectivity.
- *Streambanks* are recommended inside of culverts where feasible to protect the culvert from abrasion, provide resting areas for fish, and provide for small mammal crossing. If streambanks are constructed through a crossing, the streambanks should be constructed of rock substrate designed to be stable at the 100-year flood. The streambank width should be a minimum of 2.0 times the maximum sieve size of the streambed material (D100). The crossing width should be increased to allow for the channel width plus the streambanks. Streambanks are not recommended for areas with permafrost or severe freeze-thaw issues, in wetland complexes, for areas with large amounts of sheet flow or ice flows, or in the intertidal zone. For type A or B channels, the designer should err on the side of caution to ensure the stability of banks constructed inside culverts or use a bankfull width culvert.
- Round culvert pipes should have a *minimum invert burial depth* of forty percent (40%) of the culvert diameter into the substrate and arch culvert pipes (i.e., "squash" pipes), should have a minimum invert burial depth of twenty percent (20%) of the culvert's rise into the substrate,

unless vertical adjustment potential (VAP) analysis shows less fill is acceptable. In areas where permafrost is very close to the surface a hybrid of the stream simulation and hydraulic method may be considered to reduce the culvert embed and prevent thaw of the permafrost.

- Substrate material within/under the crossing structure should incorporate a continuous *low flow channel* that simulates the reference reach to allow for adequate fish passage during minimum flows.
- The *gradation of the substrate material* within a culvert should be designed to be a dense, well graded mixture with adequate fines to ensure that the majority of the stream flows on the surface and the minimum water depth is maintained. The Fuller-Thompson equation should be used to ensure a minimum void content (USFS, 2008).
- If substrate *retention sills* must be used (for example, sand bed systems or on slopes >6%), they should have a maximum weir height of one half (0.5) of the culvert invert burial depth (i.e. 20% of diameter for round pipes and 10% of rise for arch pipes). Substrate retention sills should be spaced so that the maximum drop between weirs is four inches (4"). Sills should not be used without substrate.
- Culvert pipes and arches should be corrugated; smooth wall culverts should not be used.
- Beaver barriers, trash racks or debris interceptors should not be used because of the potential to block adult salmon without robust and regular maintenance.

Use of Reference Reach in Design

- A *Reference Reach* is defined in the Description of Terms with basic selection parameters found under the definition of *Stream Simulation Design*. Data gathered should include at a minimum: channel width at bankfull, bankfull cross-sectional area, gradient, substrate grain size key pieces, stream type, bankfull average depth, flood prone width, stream order, and watershed area. The reference reach bankfull dimensions should be determined in the field by surveying a detailed cross section at the upper 1/3 of a representative riffle.
- Under normal flow conditions, the channel in the crossing structure should not substantially differ from the reference reach condition in regards to the channel width at bankfull, bankfull cross-sectional area, gradient, stream type, and bankfull average depth.

Special Conditions:

- In low (less than 0.5%) to zero sloped stream environments at relic channels, sloughs or wetland complexes, backwatering with similar depth as the adjacent area is the preferred method for providing fish passage combined with the synthetic width method (defined below) to develop a culvert size.
- Relic channel or slough: (*Synthetic Width Method*) Should field geomorphic data show an existing stream in a relic channel (i.e. old glacial outwash) or slough, with no defining bankfull features, a synthetic width may be estimated for culvert sizing by utilizing a calculated 2-year flood event with an average cross-sectional velocity of less than 4 fps and ideally similar to adjacent water velocities and water depth, unless there is additional supporting data or other agency criteria to design otherwise. The maximum velocity of 4 fps was chosen based on the observation by Leopold (1994) that "For rivers of moderate size (2 to 100 square miles of drainage area), the flow at bankfull stage will ordinarily have a mean velocity on the order of 4 feet per second" (p. 33). Note that this method or velocity may not be applicable for all cases and the velocity would ideally be less, particularly in stream

gradients of 1% or less.

- Wetland complexes:
  1. If possible, crossing of wetlands are best avoided. If they must be crossed, the ideal crossing in a wetland complex is a backwatered crossing that emulates the low velocity and water depth of the surrounding wetland environment, yet meets flood standards on its own or with additional floodplain culverts. To develop initial widths for such a crossing, the following situational methods could be applied:
     - Method A: The designer may use a reference reach upstream or downstream in a single thread portion of the creek to size the proposed crossing. Recommendations for choosing a reference reach may be found under *Stream Simulation Design* in the Description of Terms section below.
     - Method B: If no reference reach is available on the same stream or if the crossing slope needs to be steeper than any reference reach due to constraints such as road height or maintaining upstream water levels, crossing stream types should be selected using an appropriate geomorphic analog primarily based on slope (see figure 5) in conjunction with the *synthetic width method* to develop the crossing structure dimensions. If possible, the designed crossing should have a slope of 1% or less to maximize success in these environments and minimize beaver issues.
  2. For both Method A and Method B, flood plain culverts should be provided as conditions permit to allow for wetland continuity across the flood plain area and to minimize flow constriction at flood levels. Flood plain culverts should be placed in the flood plain outside of the primary channel and at a higher elevation to insure a minimum depth will be maintained in the primary crossing structure for fish passage at low flows.

DESCRIPTION OF TERMS

100-Year Flood Flow: The stream discharge that has a reoccurrence interval of 100 years, or a 1 in 100 chance of occurring in a given year. If the crossing structure is not designed to accommodate the 100-year flow, a route must be established to safely convey flows exceeding the design flow without causing damage to property, endangering human life or public health, or causing significant environmental damage. In cases of crossings within high entrenchment ratio environments (flood prone width/bankfull width >2) then floodplain overflow culverts may be beneficial to floodplain connectivity and can be used to pass the 100-year flood, but minimum width requirements for the primary culvert still apply.

50-Year Flood Flow: The stream discharge that has a reoccurrence interval of 50 years, or a 1 in 50 chance of occurring in a given year

Bankfull: For non-entrenched stream types (C, D, DA and E), bankfull is the height on the streambanks where water flow fills the channel and begins to spread out onto the flood plain. (See Figure 3). For entrenched stream types(A, B, F and G), other indicators are required to identify the bankfull elevation such as the highest active depositional feature, slope breaks, change in particle size distribution, small benches, staining of rock, lichens, and certain riparian vegetation species (Rosgen, 1996). (See figure 4). Use multiple indicators wherever possible to determine a common bankfull stage elevation. Where possible, calibrate field-determined bankfull stage elevation and corresponding bankfull channel dimensions to known recurrence interval discharges at gage stations. Bankfull features are typically wider than the *ordinary high water mark*.

Bankfull width: The surface width of the stream measured at bankfull. (See figure 2 for an example of bankfull width on a small stream).

Bankfull Cross sectional Area: The sum of products of unit width and depth at the bankfull stage elevation in a riffle cross section.

Bankfull discharge: A frequently occurring peak flow whose stage represents the incipient point of flooding. The bankfull discharge is expressed as the momentary maximum of instantaneous peak flows rather than the mean daily discharge. It is often associated with a return period of 1-2 years, with an average of 1.5 years (Rosgen, 1996).

Dynamically Stable: Dynamic stability means that channel dimensions, slope and planform do not change radically even though they adjust to changing inputs of water, sediment and debris.

Entrenchment Ratio: The vertical containment of a river, obtained by dividing the flood-prone width by the bankfull width at a reference riffle (Rosgen, 1996).

Flood-prone Area and Width: The area adjacent to the watercourse constructed by the watercourse in the present climate and inundated during periods of high flow. The flood-prone width is the width of the flood plain at an elevation two times (2X) the maximum bankfull depth (Rosgen, 1996).

Hydraulic Methods: A culvert designed with the hydraulic method is designed to maintain flow velocities to be less than the swimming abilities for the weakest swimming fish at the high fish passage flow predicted with hydrologic modeling. Due to the limitations of hydrologic modeling accuracy and the limited data on fish swimming abilities, the hydraulic method should be avoided if possible.

Hydrologic Functioning: A crossing is considered to be hydrologically functioning for fish passage if it allows for hydraulic conveyance, debris conveyance and fish passage in the channel and flood plain during flows ranging from low flows during dry periods up to a 100-year flood flow. Sediment transport should remain in equilibrium throughout the range of flows so that no aggradation or degradation will result.

Low Flow Channel: A low flow channel is intended to provide fish passage at minimum flows. The low flow channel should mimic the reference reach where possible. If the low flow channel dimensions are not discernable from the reference reach, the low flow channel should have a cross section sectional area of 15-30% of the bankfull cross sectional area and a minimum depth of four inches (4") for small streams up to twelve inches (12") for larger streams. The low flow channel should be defined by rock features that will resist critical shear forces up to the 100-year flood. (See figure 2 for an example of a low flow channel on a small stream).

Ordinary High Water Mark (OHWM): OHWM is a legal, non-geomorphic term defined by Alaska statute §41.17.950 (15) which states the "ordinary high water mark means the mark along the bank or shore up to which the presence and action of tidal or non-tidal water are so common and usual, and so long continued in all ordinary years, as to leave a natural line impressed on the bank or shore and indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics" (Alaska Legal Resource Center, 2008). Reference http://www.adfg.alaska.gov/index.cfm?adfg=uselicense.faqs#howdoiknow for more information on identifying the OWHM. Also, see figure 2 for an example of the OHWM on a small stream.

Reference Reach: A portion of a stream that represents a stable channel (dimension, pattern, profile) within the geomorphic context that exists in that segment and can represent a natural or a stable, modified condition. A reference reach should be a minimum 20 times the reference bankfull width and no less than 200 feet in length for creeks less than 10 feet in bankfull width. See the definition for Stream Simulation Design for further reference reach selection recommendations.

Retention Sills: Metal or wood plates welded into a culvert with a height of no more than one half of the embedment depth. Retention sills are intended to hold substrate in place in culverts greater than 6% slope. Retention sills should not protrude into the flow.

Slope ratio: The ratio of the culvert bed slope to the upstream reach or reference reach channel slope. The slope of the reference reach should be calculated using the water surface elevations from head of reference reach riffle at the top of the reach to head of riffle at the bottom of the reach assuming the reach slope is consistent.

Stream Simulation Design: Stream simulation means that the crossing is designed using reference data from a representative section (reference reach) of the specific water body being

crossed. Stream simulation is a crossing design technique that attempts to replicate the natural stream channel conditions found upstream and downstream of the crossing. Sediment transport, flood and debris conveyance, and fish passage function much as they do in the natural channel if designed correctly. Stream simulation uses bankfull channel dimensions to size the crossing structure and channel. If there are no suitable reference reaches on the specific body of water being crossed, a reference reach may be chosen from another water body with similar geomorphic and hydrologic characteristics. We recommend following the criteria outlined in the River Morphology and Applications workshop by Wildland Hydrology for selecting a reference reach:

- The reference reach bankfull width should be at least one half, but not more than two times the water body being crossed
- The reference reach bankfull discharge should be at least one half and no more than one and one half times the bankfull discharge of the water body being crossed
- The stream order of the reference reach should be within one stream order of the water body being crossed
- The reference reach should be within 25% of the crossing gradient as noted in the guidelines above.

The crossing design channel width, area and other features should be scaled to the reference reach using ratios to the bankfull conditions.

Streambanks: The streambanks correspond to the bankfull elevation of a natural channel. Streambanks inside a culvert may be simulated with large rock designed to be stable up to the 100-year flood flow.

Substrate Grain Size: A particle size distribution based on a particle count taken in the reference reach of at least 100 particles. Refer to Bunte and Abt (2001) for recommended sampling methods.

Synthetic Width Method: A method of calculating culvert width dimensions when the current flow regime does not coincided with the geomorphic bankfull indicators such as in a relic channel or slough or no defining bankfull features exist (See *bankfull* definition).

Figure 1: Range of crossing ecological objectives and examples of corresponding design approaches (USFS, 2008).

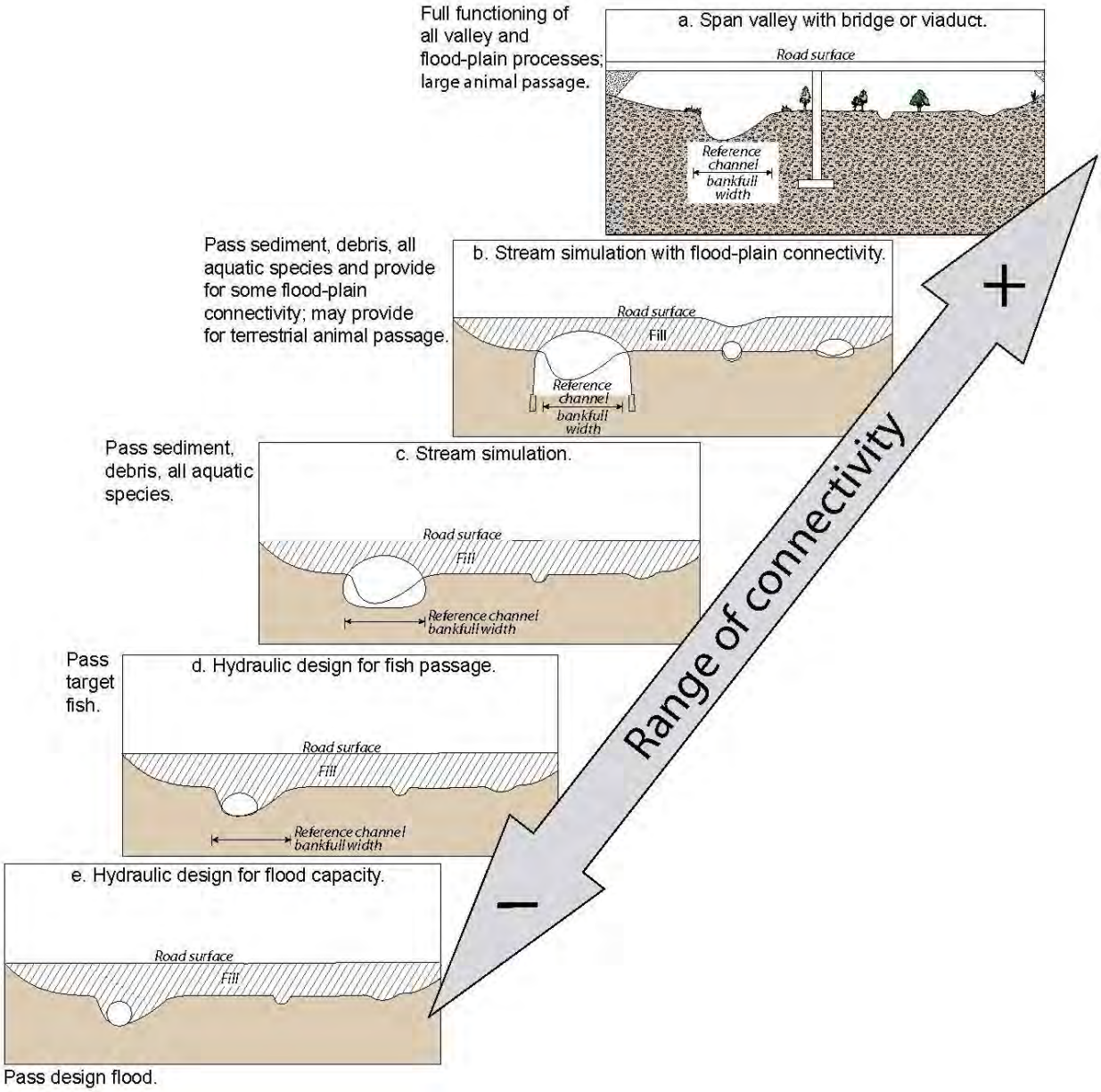


Figure 2: Bankfull width, OHWM and a low flow channel on an E3b stream type

Figure 3. Typical channel features for a non-entrenched channel (Rosgen, 1996).

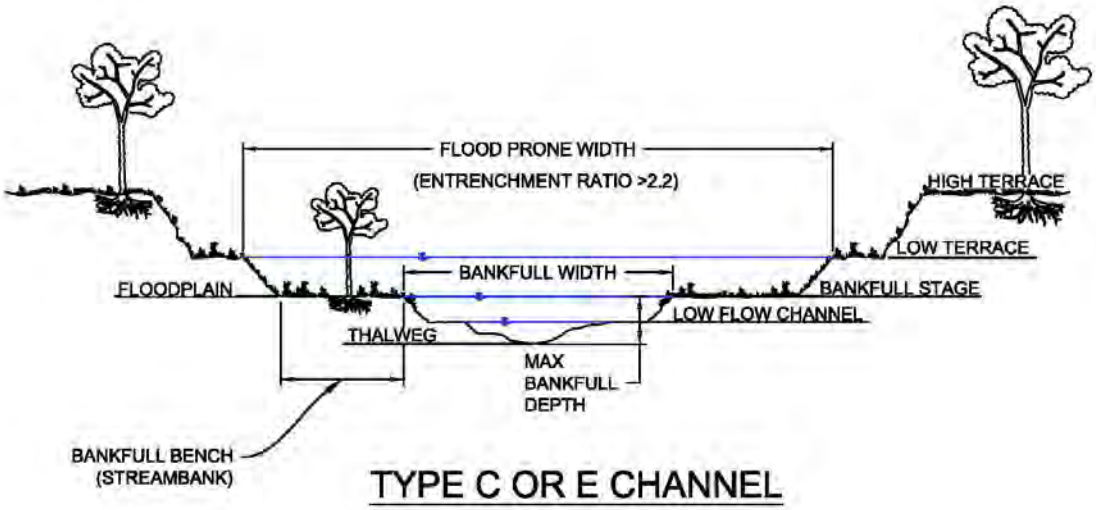


Figure 4. Typical channel features for an entrenched channel (Rosgen, 1996).

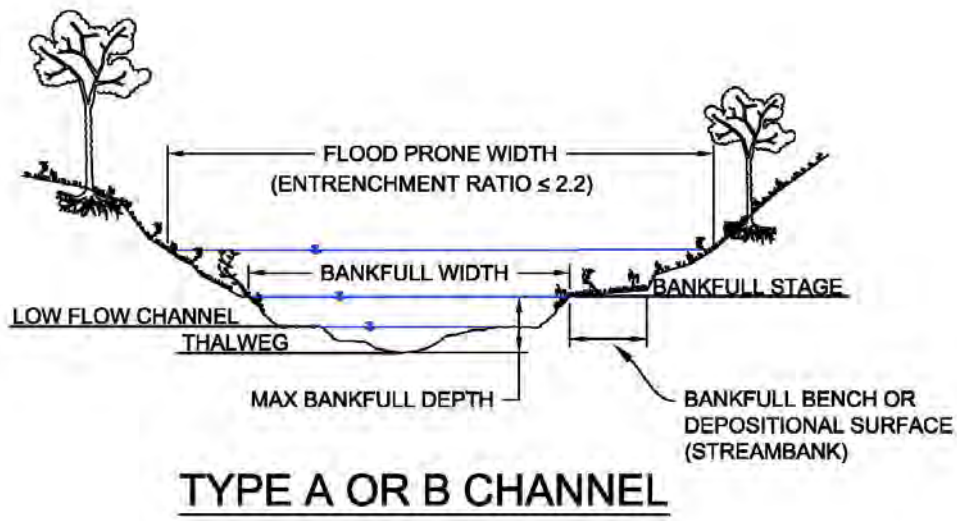
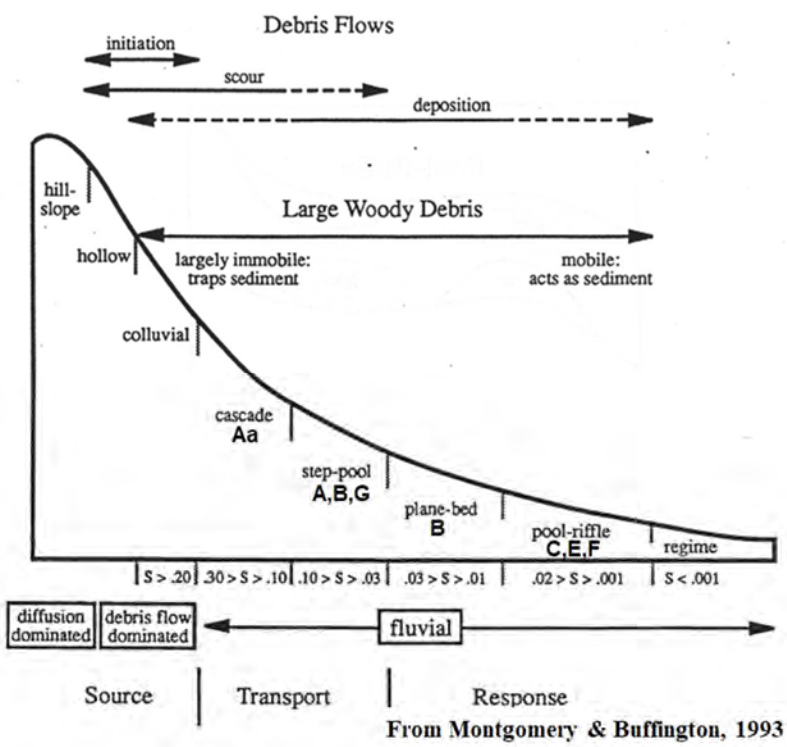


Figure 5. Geomorphic processes and stream types relative to channel slope (Montgomery and Buffington, 1993).



APPENDIX A

EXAMPLE DESIGN PROCEDURE FOR FISH PASSAGE CULVERTS

U.S. Fish and Wildlife Service
Alaska Fish Passage Program

This step by step guide is intended as a companion to the "Fish Passage Design Guidelines." The following list sequentially describes a procedure used by the USFWS Alaska Fish Passage program for Fish Passage Culvert Design in alluvial channels but it is not intended to preclude other design approaches. We recommend consultation with the local Alaska Department of Fish and Game habitat permitting office early in the design process.

1. Complete a hydrology report. If site is un-gaged try multiple flood frequency estimation methods (USGS equations, Manning's Equation, TR-55, etc.).
2. Complete survey at the crossing site including channel cross sections and a detailed longitudinal profile at least 20 times the bankfull width both upstream and downstream of the crossing and channel cross sections, more if there is any indications of instability or other information needs like headcut potential, debris jams, etc. Use channel survey data and site observations to determine the channel type and valley type using the Rosgen classification system (Rosgen, 1996).
3. Determine the design approach and the location of the reference reach for the given channel type and site geomorphology. The length of the reference reach survey should be at least 20 times the bankfull width and at least 200 feet for streams 10 feet bankfull width or less.
4. Perform pebble count at the reference reach and upload survey data and pebble count data to Rivermorph, CAD, or excel spreadsheet. Refer to Bunte and Abt (2001) for recommended pebble count sampling methods.
5. Plot long profile and cross sections and determine bankfull width (Wbkf) of the reference cross section (typically a representative riffle).
6. Determine valley slope from CAD or field measurements.
7. Determine reference reach slope from long pro - use the water surface head of riffle to head of riffle. Compare with bankfull slope and adjust bankfull calls if necessary. (Bankfull slope should match water surface slope. If it doesn't this may indicate the bankfull calls made in the field were incorrect or that channel evolution is occurring). Make sure Wbkf of reference cross section makes sense with the other bankfull calls along the profile. (Use Rivermorph or CAD for this task).

8. Determine new culvert alignment, slope, vertical adjustment potential (VAP) lines, tie in points to the existing stream bed and draw this in on the long pro in Rivermorph, CAD or Excel. See U.S. Forest Service (USFS, 2008) Stream Simulation Manual, chapter 6, for considerations in choosing tie in points and VAP lines. Also, see Figure 1 in Appendix B for further VAP line guidance from the USFS. Make sure new culvert design slope is within 25% of reference reach slope. Expect there may be sediment deposition upstream and/or downstream at the culvert that may need to be removed. Check actual length of culvert in CAD based on tie in points to existing thalweg, embedment depth, minimum cover depth, road width and embankment slope.
9. Fill out reference reach stream classification page in Rivermorph or by hand – "River Stability Field Guide" WS2-3 (See Figure 2, Appendix B) (Rosgen, 2008). See Figures 10-13 in Appendix B for guidance on the Rosgen channel classification system (Rosgen, 2007).
10. Determine bankfull discharge and velocity for the reference cross section in Rivermorph or using a simple cross section program (WinXS Pro is free online) based on reference cross section, bankfull slope, and Manning's or other open channel equations. Manning's n should be estimated from D84 of riffle pebble count, stream type, tables, etc. and compare results of different methods. ("River Stability Field Guide" WS2-2, Figure 3, Appendix B) (Rosgen, 2008). Check that average bankfull velocity is between 2.5 to 5 fps for fish streams. Check that bankfull discharge is relatively close to the 1-2 year storm predicted by hydrology or gage.
11. Create model of the existing crossing in HY8 so the existing flood capacity can be compared with the new crossing design capacity. (Note: Other hydraulic analysis software such as HEC-RAS or Culvert Master may be used in lieu of HY8 throughout the design).
12. Model new culvert in HY8. Design flow should be Q100. Check the bankfull flow and high fish flows as well to see if the elevation is as expected. Create tail water cross section with bankfull channel, floodplain, and low flow channel. (See Fish Passage Culvert Design Guidelines for guidance on low flow channel dimensions and step 22 for guidance on flood plain width). Model the channel cross section inside the culvert by choosing an appropriate average embedment depth that accounts for the area blocked by fill. Or use a user generated culvert cross section to model the bankfull channel and low flow channel shape directly. Choose a culvert that passes Q100 with HW/D =0.8. Culvert should either be bankfull width or if streambanks are necessary or desired a minimum bankfull width + 4xD100. Designer should assume D100 and check it in next step (iterate as needed). Banks are desirable for fish Passage and small mammals if feasible. We don't want culvert wider than 1.4x Wbkf for culverts less than 12 feet or 1.2xWbkf for culverts greater than 12 feet or aggradation may result. Desired bank widths are 2-3 feet per side unless you are using class 3 (D100=30") or larger rip rap to construct the banks.
13. Size coarse material using Corps of Engineers equation for rip rap design found in FHWA "River Engineering for Highway Encroachments", page 6.25 to 6.30 (Richardson, Simons and Lagasse 2001). FWS has developed the "Streambed Material Sizing Analyzer.xlsx" spreadsheet to use this method (See Figure 4, Appendix B for example). Input the design flood velocity in culvert (use average velocity at a given cross section) and model flow height to determine the D30 size of the coarse material required for stability. Use HY8 water surface profile to find where the max average velocity is; which may be inlet or outlet. Determine coarse and fine aggregate gradation using Fuller Thompson equation as a target (compare in the Streambed

Material Sizing Analyzer spreadsheet). The spreadsheet is set up to use the AKDOT rip rap sizes or to use a custom coarse aggregate gradation. Note, AKDOT rip rap gradations are very uniform and will need to be mixed (i.e. 33% Type I + 33% Type II + 34% Fine Aggregate) in order to achieve a well graded combined gradation. For a copy of the spreadsheet send an e-mail to heather_hanson@fws.gov. Note: The FHWA HEC No. 23 circular titled "Bridge Scour and Stream Instability Countermeasures: Experience, Selection and Design Guidance" provides alternative methods for rip rap design.

14. Determine if there is adequate upstream sediment supply to move through the culvert. You will not have adequate sediment if the culvert is at a lake outlet, you have a wetland upstream, or a stream with a silty substrate. If there is adequate sediment supply design the culvert substrate for Q50. If sediment supply is not adequate, design culvert substrate for Q100. Check design substrate size against the upstream reach wide pebble count (Q50) and key pieces count (Q100). If the pebble counts are showing larger material than the sizes calculated, your hydrologic estimate may be low. However, in a relic channel you may have a larger pebble count in the system than would be mobilized by the current flow regime. (Note: the USFS stream simulation method relies on sediment moving through the culvert to replenish scoured sections inside the culvert. In contrast, the U.S. Fish and Wildlife Service modified approach is to have a minimum stability for the coarse sediment in the culvert corresponding to the Q50 flow recognizing that mobility will only occur for the fine fraction of the sediment or at flows higher than Q50. See the U.S. Forest Service Stream Simulation Design Manual, Appendix E for further discussion of the USFS approach) (USFS, 2008).
15. Design immobile key pieces and stream bank material inside the culvert for Q100. Use either rock clusters or rock bands to define the low flow channel and design for Q100. Check Q100 size against key pieces count data. See Figures 5-7 in Appendix B for rock clusters size, spacing and design guidance.
16. Check embed of culvert is 2xD100 and allows for potential scour (lower VAP, Figure 1, Appendix B). Typical embedment depths range from 25-40% of culvert height. Also check culvert width is adequate to construct banks of 2xD100 per side if using banks. Will likely need to iterate to find a solution.
17. Check culvert capacity for potential aggradation- upper VAP. This would be head of riffle to head of riffle and this could reduce capacity if there is a concave slope change. If there's potential for debris flows use bankfull elevation for upper VAP instead of head of riffle.
18. Consider floodplain relief culverts where entrenchment ratio is greater than 2.0 and / or obvious side channels exist. (See Figure 8-9 in Appendix B and USFS (2008), chapter 5 for guidance). Flood plain relief allows water on the floodplain to drain more quickly during flows greater than bankfull and helps to prevent aggradation of the floodplain that is common in large flood events. Floodplain relief culverts should be placed with their flow line at bankfull elevation at a minimum. (Rock stable to the Q100 may be used to infill the culvert and set the elevation of the flow line). They should not be placed at the same elevation as the thalweg of the main culvert to eliminate chance of capturing creek. Allow enough space between culverts to construct stable banks for the main culvert and not reduce the competence of the main culvert fill compaction. Use a higher Manning's n for the floodplain relief culvert in HY8 assuming brush and grass will

grow on the floodplain (Reference Arcement and Schneider (1989) for guidance on Manning's n for floodplains).

19. Transfer design to CAD. Double check alignment, slope and tail water cross section for final culvert design and iterate if necessary.
20. Continue culvert substrate upstream and downstream of inlet and outlet for approximately 50% of Wbkf. Design substrate in constructed channel outside of culvert for Q50 or pebble count, depending on scour mitigation as flow transitions from culvert to natural channel and floodplain. If streambanks are designed in the culvert, extend rock banks outside of culvert a minimum of 2 times the D100 rock size to transition to natural or bioengineered banks, depending on length of channel disturbance.
21. Design stream banks to withstand predicted velocities using appropriate bioengineering techniques. (See Fischenich (2001) for design guidance and ADF&G's Streambank Revegetation and Protection guide (Walter, Hughes, Moore and Inoue, 2005) for details commonly used in Alaska).
22. Construct cross section for reconstruction of disturbed stream upstream and downstream of the culvert. The cross section should include the low flow channel, bankfull channel and bankfull bench dimensions as well as bioengineering details. See Table 1 for bankfull bench width recommendations and Figures 2 and 3 for an illustration of typical channel, floodplain and terrace features for different types of channels. Also look at floodplain width in the reference reach for guidance. If the contractor is able to disturb less streambank than anticipated we will typically preserve undisturbed stable streambanks if possible.

Table 1. Recommended bankfull bench widths as a function of percent of bankfull channel width from Wildland Hydrology 2017 Level IV River Restoration and Natural Channel Design Workshop.

Bankfull Channel Width (ft)	Recommended Bankfull Bench Width (% of Channel Width)
<20 ft	75%
20-50 ft	50%
>50 ft	25%

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APPENDIX B

Slides, Forms, and Examples

FIGURE 1: LOWER VAP LINE RECOMMENDATIONS FOR VARIOUS CHANNEL TYPES

Newbury Creek, longitudinal profile assessment

12) Delineate the lower vertical adjustment potential (scour) line.

- Choose deepest pool along channel not influenced by the undersized culvert.
- Adjust line to reflect scour/fill processes that occur during floods. Recommended criteria:

o 1.00 x Pool Max Depth (PMD): Step-pool channels, S > 5%, boulder-cobble boundaries.
o 1.25 x PMD: Step-pool channels with S < 5%, cobble-gravel boundaries.
o 1.50 x PMD: Steep riffles with ribs, cobble-gravel boundaries.
o 1.75 x PMD: Riffles, gravel-cobble boundaries.
o 2.00 x PMD: Rffles, sand-fine gravel boundaries.
o No adjustment for bedrock.

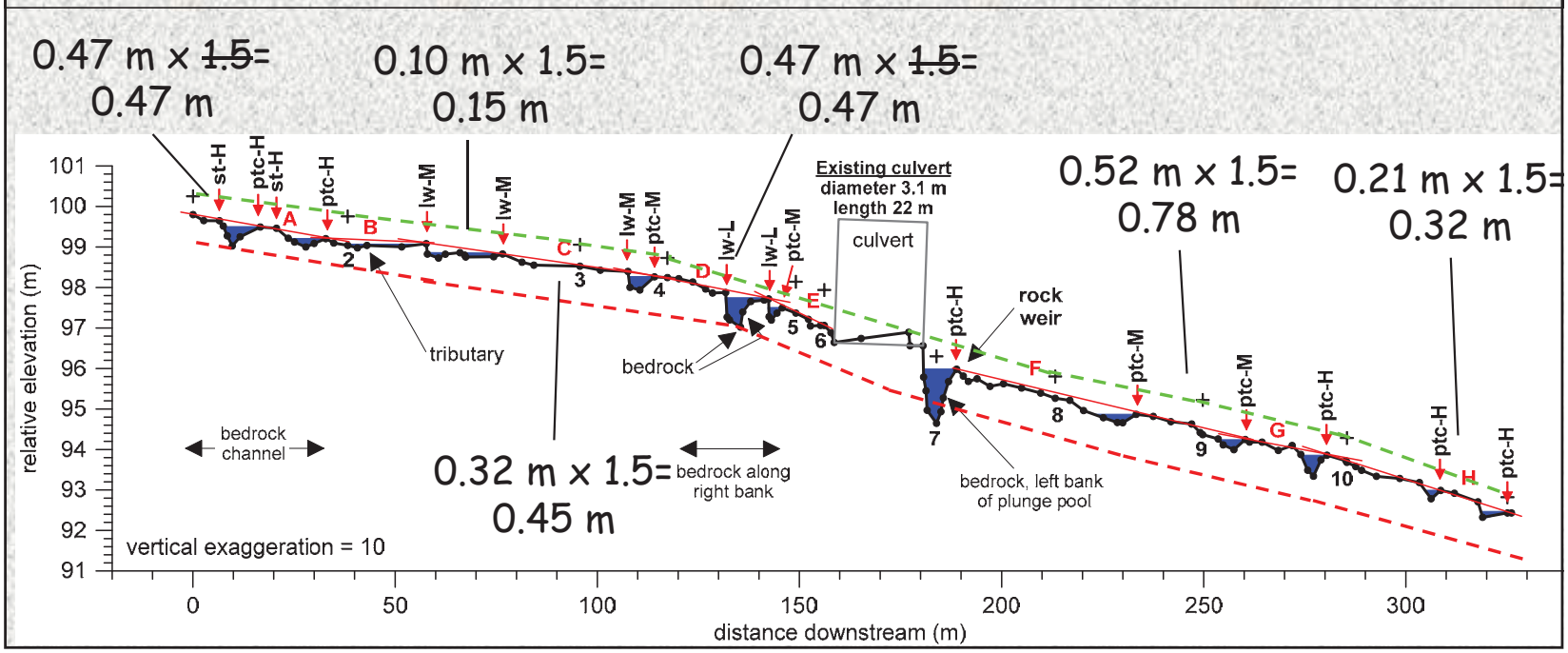

FIGURE 2: STREAM CLASSIFICATION WORKSHEET

Worksheet 2-3. Field form for *Level II* stream classification.

Stream:			
Basin:	Drainage Area:	acres	mi^2
Location:			
Twp.&Rge:	Sec.&Qtr.:		
Cross-Section Monuments (Lat./Long.):		Date:	
Observers:		Landscape Type:	

Bankfull Width (W_{bkf}) The surface width of the stream at bankfull stage elevation, in a riffle section.		ft
Bankfull Mean Depth (d_{bkf}) Mean depth of the stream channel cross-section, at bankfull stage elevation, in a riffle section ($d_{bkf} = A_{bkf} / W_{bkf}$).		ft
Bankfull Cross-Sectional Area (A_{bkf}) Area of the stream channel cross-section, at bankfull stage elevation, in a riffle section.		ft^2
Width/Depth Ratio (W_{bkf} / d_{bkf}) *Bankfull Width* divided by *Bankfull Mean Depth*, in a riffle section.		ft/ft
Bankfull Maximum Depth (d_{max}) Maximum depth of the bankfull channel cross-section, or distance between the bankfull stage and Thalweg elevations, in a riffle section.		ft
Flood-Prone Area Width (W_{fpa}) Width of the channel at an elevation that is twice the *Bankfull Maximum Depth*, measured perpendicular to the fall line of the valley in a riffle section.		ft
Entrenchment Ratio (ER) The *Flood-Prone Area Width* divided by *Bankfull Width* (W_{fpa} / W_{bkf}), in a riffle section.		ft/ft
Channel Materials (Particle Size Index D_{50}) The D_{50} particle size index represents the median or dominant diameter of channel materials, as sampled proportionately from the channel surface between the bankfull stage and Thalweg elevations.		mm
Average Water Surface Slope (S) The elevation difference of water surface measurements over the stream length between two similar bed features (e.g., start of riffle to start of last riffle) for several riffle–pool or step–pool sequences, representing channel gradient.		ft/ft
Channel Sinuosity (k) An index of channel pattern determined from stream length divided by valley length (SL / VL), or from valley slope divided by average water surface slope (S_{val} / S).		ft/ft

Stream Type → [ ] ← **See Classification Key (Figure 2-35)**

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FIGURE 3: BANKFULL DISCHARGE WORKSHEET

Worksheet 2-2. Computations of bankfull mean velocity and bankfull discharge using various methods.

Bankfull VELOCITY & DISCHARGE Estimates

Stream:				Location:	
Date:		Stream Type:		Landscape Type:	
Observers:				HUC:	_ _ _ _ _ _ _ _ _ _ _ _

INPUT VARIABLES			OUTPUT VARIABLES		
Bankfull Riffle Cross-Sectional Area		A_{bkf} (ft^2)	Bankfull Riffle Mean Depth		d_{bkf} (ft)
Bankfull Riffle Width		W_{bkf} (ft)	Wetted Perimeter $\approx (2 * d_{bkf}) + W_{bkf}$		W_p (ft)
D_{84} Particle Size at Riffle		D_{84} (mm)	D_{84} Particle Size in Feet D_{84} (mm) / 304.8		D_{84} (ft)
Bankfull Slope		S_{bkf} (ft / ft)	Hydraulic Radius A_{bkf} / W_p		R (ft)
Gravitational Acceleration	32.2	g (ft / sec^2)	Relative Roughness R (ft) / D_{84} (ft)		R / D_{84} (ft / ft)
Drainage Area		DA (mi^2)	Shear Velocity $u^* = (gRS)^{½}$		u* (ft / sec)

ESTIMATION METHODS	Bankfull VELOCITY		Bankfull DISCHARGE	
1. Friction Factor / Relative Roughness $\bar{u} = [\,2.83 + 5.66 * Log\{R / D_{84}\}\,]\,u^*$		ft / sec		cfs
2. Roughness Coefficient: a) Manning's *n* from Friction Factor/Relative Roughness (Figs. 2-29, 2-30) $\bar{u} = 1.49*R^{2/3}*S^{1/2}/n$ $n =$		ft / sec		cfs
2. Roughness Coefficient: b) Manning's *n* from Stream Type (Fig. 2-31) $\bar{u} = 1.49*R^{2/3}*S^{1/2}/n$ $n =$		ft / sec		cfs
2. Roughness Coefficient: c) Manning's *n* from Jarrett (USGS): $\bar{u} = 1.49*R^{2/3}*S^{1/2}/n$ $n = 0.39*S^{0.38}*R^{-0.16}$ **Note:** This equation is applicable to **steep, step/pool, high boundary roughness, cobble- and boulder-dominated stream systems**; i.e., for Stream Types A1, A2, A3, B1, B2, B3, C2 & E3 $n =$		ft / sec		cfs
3. Other Methods (Hey, Darcy-Weisbach, Chezy C, etc.)		ft / sec		cfs
3. Other Methods (Hey, Darcy-Weisbach, Chezy C, etc.)		ft / sec		cfs
4. Continuity Equations: a) USGS Gage Data $\bar{u} = Q / A$ **Return Period for Bankfull Q** Q = ____ **year**		ft / sec		cfs
4. Continuity Equations: b) Regional Curves $\bar{u} = Q / A$		ft / sec		cfs

Protrusion Height Options for the D_{84} Term in the Relative Roughness Relation (R/D_{84}) – Estimation Method 1

Option 1.	For **sand-bed** channels: Measure 100 **"protrusion heights"** of sand dunes from the downstream side of feature to the top of feature. Substitute the D_{84} sand dune protrusion height in ft for the D_{84} term in method 1.
Option 2.	For **boulder-dominated** channels: Measure 100 **"protrusion heights"** of boulders on the sides from the bed elevation to the top of the rock on that side. Substitute the D_{84} boulder protrusion height in ft for the D_{84} term in method 1.
Option 3.	For **bedrock-dominated** channels: Measure 100 **"protrusion heights"** of rock separations, steps, joints or uplifted surfaces above channel bed elevation. Substitute the D_{84} bedrock protrusion height in ft for the D_{84} term in method 1.
Option 4.	For **log-influenced** channels: Measure **"protrusion heights"** proportionate to channel width of log diameters or the height of the log on upstream side if embedded. Substitute the D_{84} protrusion height in ft for the D_{84} term in method 1.

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FIGURE 4: SAMPLE STREAMBED MATERIAL SIZING

New Stream Channel Design (Culvert, Rock Ramp)

Using Corps of Engineers Equations - FHWA Circular on Development in the River System - Page 6.25.
FHWA NHI 01-004; River Engineering for Highway Encroachments, 2001
http://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=8&id=20

YELLOW ARE INPUTS

Safety Factor	**1.5**		
Stability Coefficient for Incipient Failure	0.3	(0.36 round rock, 0.3 angular rock)	
Vertical Velocity Distribution Coeff	1.00	(1.0 for straight channels)	
Blanket Thickness Coeff	1	(1xD100 or 1.5 or D50 max, whichever is greater)	
Local depth of flow	2.5	ft for 100 year event	
Unit Weight of water	62.4	lb/ft^3	assumed
Unit weight of rock	165	lb/ft^3	assumed
Local depth-average velocity	9.8	ft/s from 100-year event avg. velocity in pipe	
Side Slope correction factor	1		
Gravitational Acceleration	32.2	ft/s^2	
D85/D15	3.8	(1.7-5.2)	
D50/D30	2		

Note: This method is based on the minimum D30 size

Riprap Design Method - Selecting Proper Gradation, Page 131.
Design Hydrology and Sedimentology for Small Catchments, Haan, Barfield and Hayes, 1981.

D15	0.5	ft	7.0	inches	
D30	0.8	ft	10.0	inches	
D50	1.2	ft	15.0	inches	Coarse
D85	2.0	ft	24.0	inches	
D100	2.4	ft	29.0	inches	

Using D50 size, used FHWA circular for Rip Rap design to spec out D100, D85 and D15.
D100 = 2.0D50

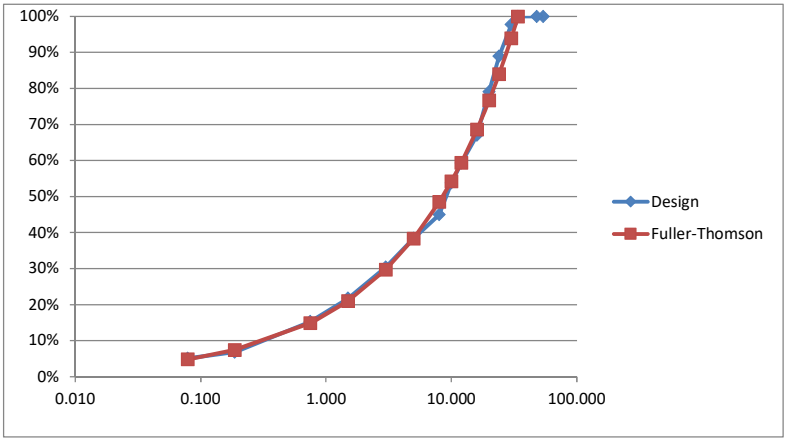
Fuller-Thompson Estimating for Maximum Density:
Method Adapted from US Forest Service Stream Simulation Guidelines

D100 (inches) 34 input designed D100 from table below
D30 10.0 Stability (D30) OK
D30 Req'd 10.0

YELLOW ARE INPUTS

		COARSE MATERIAL					FINES
		Custom	Type IV Rip Rap	Type III Rip	Type II Rip R	Type I Rip Rap	FA
	relative %	0	0	0.22	0.2200	0.2200	0.3400
Size (inches)	Sieve Size	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing
54	54"	0.00	1.00	1.00	1.00	1.00	1.00
48	48"	0.00	0.90	1.00	1.00	1.00	1.00
34	34"	0.00	0.50	1.00	1.00	1.00	1.00
30	30"	0.00	0.35	0.90	1.00	1.00	1.00
24	24"	0.00	0.25	0.50	1.00	1.00	1.00
20	20"	0.00	0.15	0.15	0.90	1.00	1.00
16	16"	0.00	0.00	0.00	0.50	1.00	1.00
12	12"	0.00	0.00	0.00	0.15	1.00	1.00
10	10"	0.00	0.00	0.00	0.00	0.90	1.00
8	8"	0.00	0.00	0.00	0.00	0.50	1.000
5	5"	0.00	0.00	0.00	0.00	0.20	1.000
3	3"	0.00	0.00	0.00	0.00	0.10	0.830
1.5	1.5"	0.00	0.00	0.00	0.00	0.00	0.640
0.75	.75"	0.00	0.00	0.00	0.00	0.00	0.450
0.187	#4	0.00	0.00	0.00	0.00	0.00	0.200
0.0787	#10 Sand	0.00	0.00	0.00	0.00	0.00	0.150

Gradation values should be within +/-5% of this gradation (Rice)
AND we need to have at least 5% sand size (#10) or smaller (Forest Service) in the combined gradation



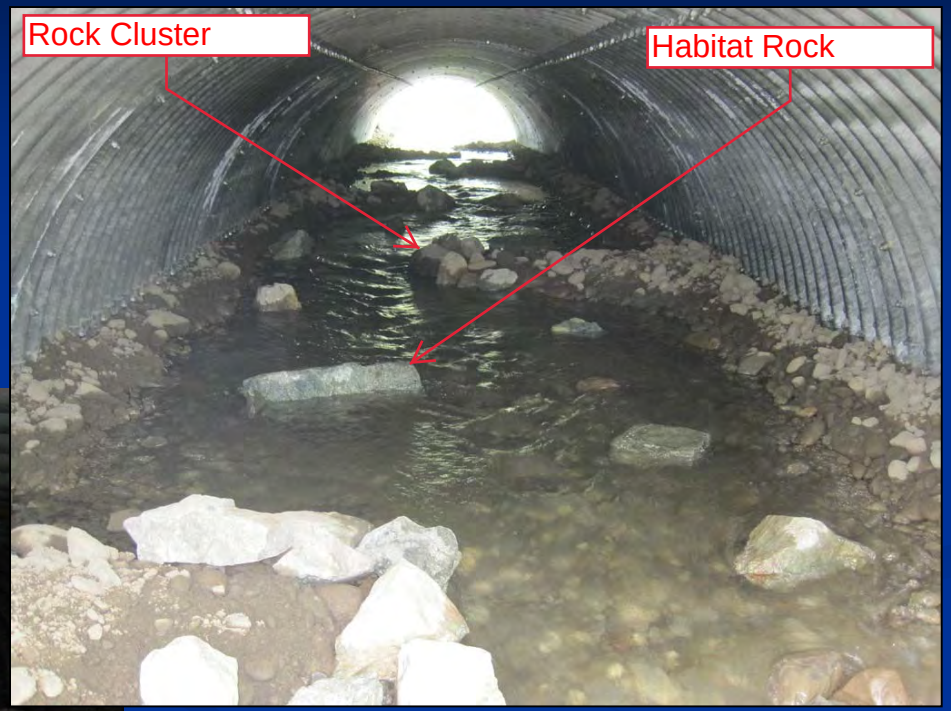
DATA for Graph & Fuller-Thomson Eqn

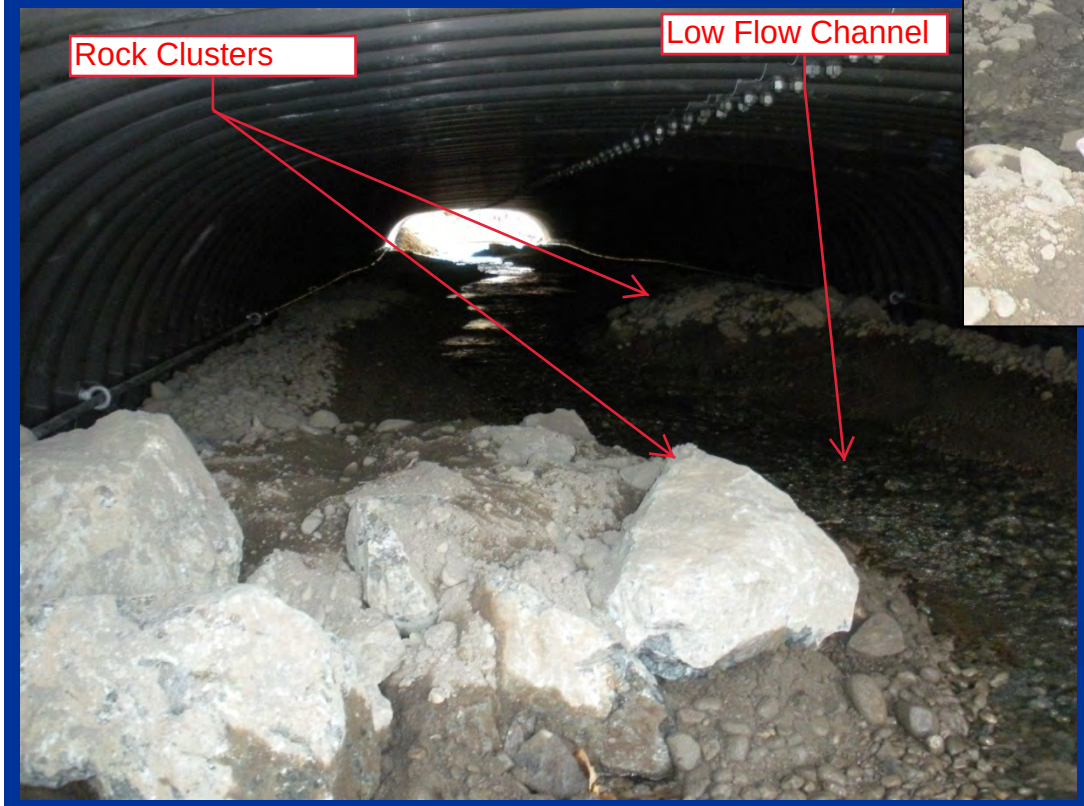
Size (in)	Combined % pa	F-T equation
54.000	100%	126%
48.000	100%	119%
34.000	100%	100%
30.000	98%	94%
24.000	89%	84%
20.000	79%	77%
16.000	67%	69%
12.000	59%	59%
10.000	54%	54%
8.000	45%	49%
5.000	38%	38%
3.000	30%	30%
1.500	22%	21%
0.750	15%	15%
0.187	7%	7%
0.079	5%	5%

FIGURE 5: ROCK CLUSTERS

Rock Clusters as Low Flow Barbs

Crocker Creek, Mat-Su





Diamond Hook Road

Little Campbell Creek, Anchorage

FIGURE 6: ROCK CLUSTER SPACING GUIDANCE

Rock Clusters

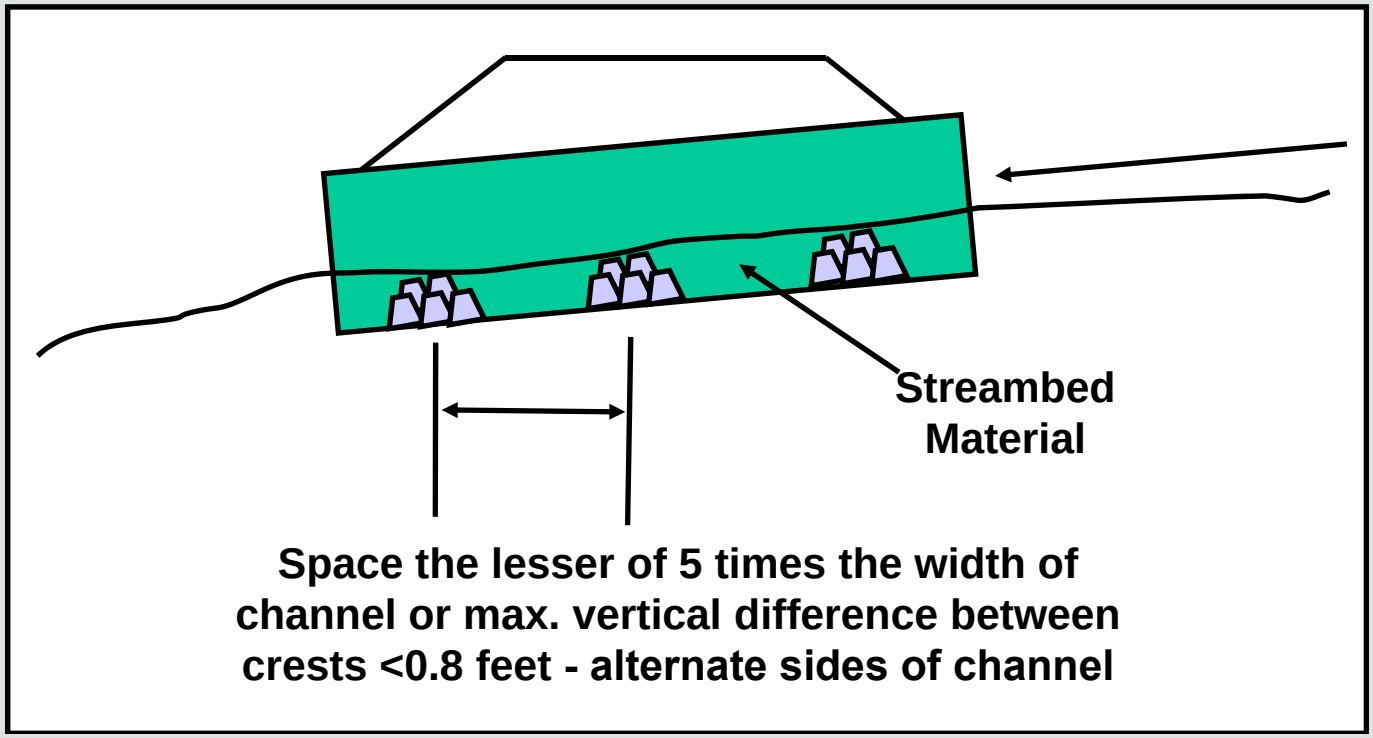


FIGURE 7: ROCK CLUSTER EXAMPLE - BANKFULL WIDTH CULVERT

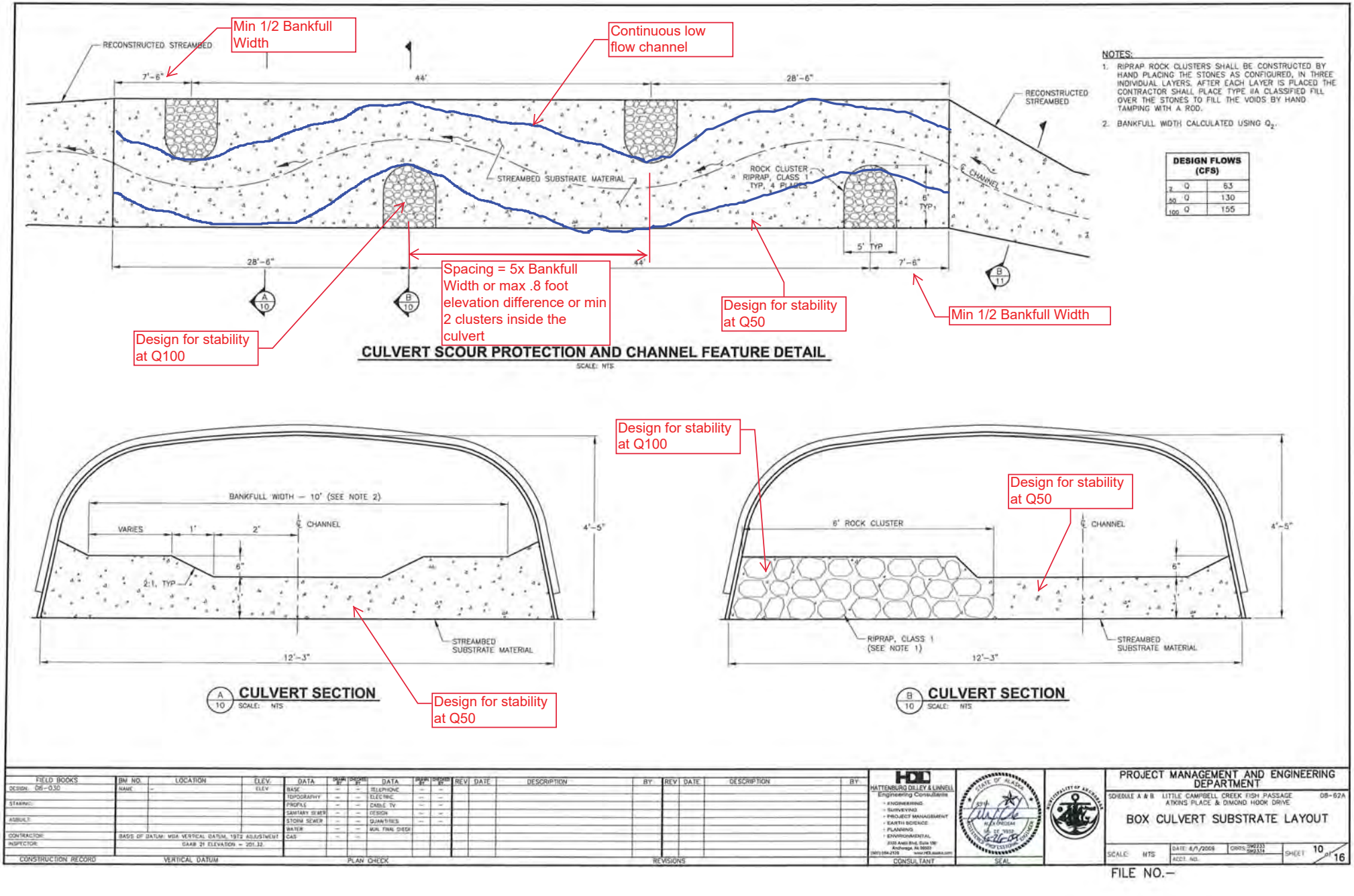


FIGURE 8: FLOODPLAIN CULVERTS

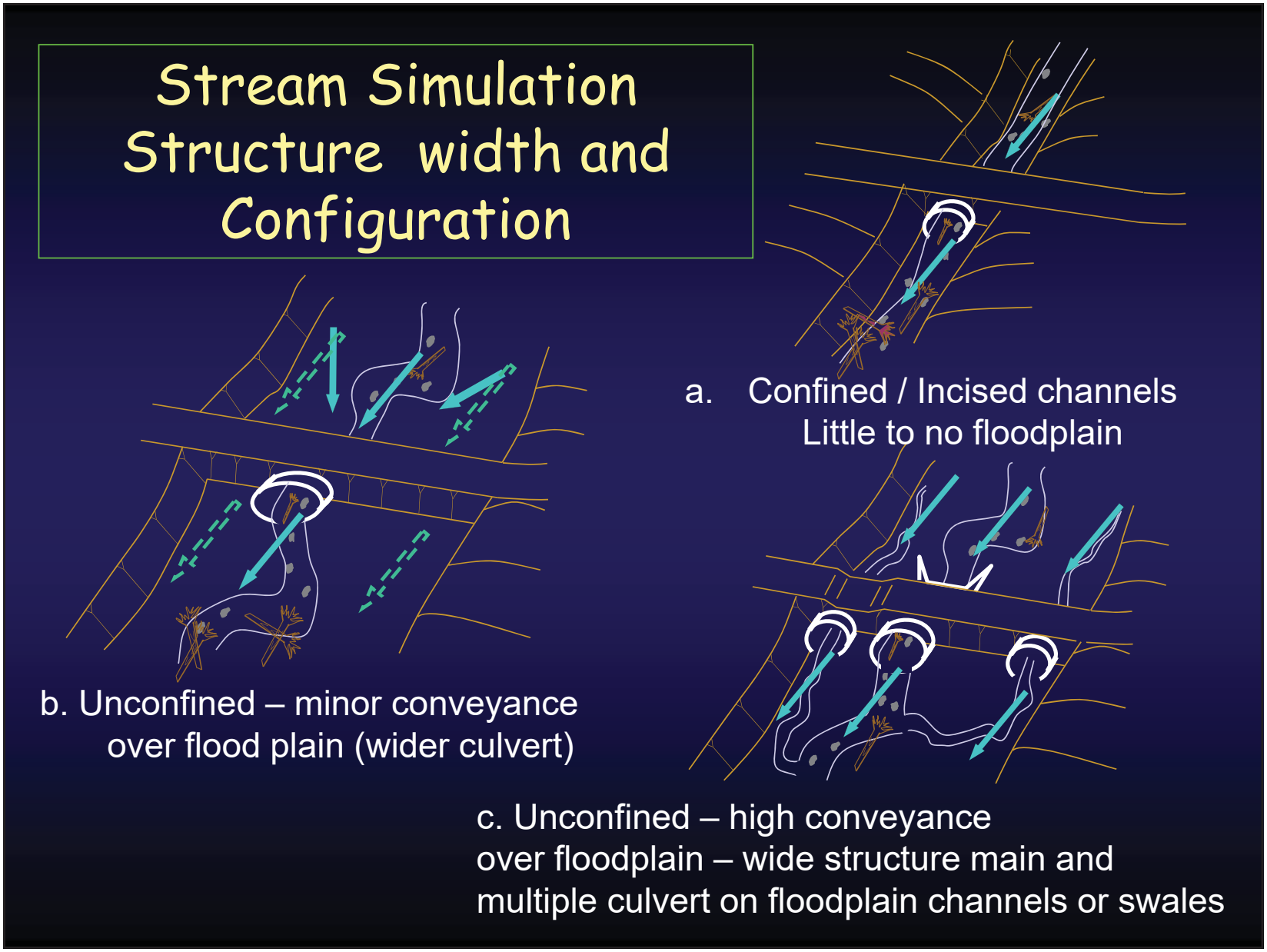


FIGURE 9: FLOODPLAIN CULVERT GUIDANCE

Unconfined channel - Requirements

- Hydraulic analysis to determine floodplain conveyance (high or low) Use common sense depending on site conditions and risk as to the level of analysis required
- Check mobility / stability against the reference reach main channel only!
- Add floodplain culverts in streams with high floodplain conveyance or with defined channels on floodplains (Rule of thumb is: when entrenchment ratio is 2 or greater be concerned with floodplain conveyance confirm with hydraulic model)
- Add road dips and armor embankment
- If channel is backwatered during high water, HW/D clearance may be an issue

!!!!GO TO THE SITE DURING FLOODING TO SEE CONVEYANCE ON THE FLOODPLAIN!!!!!

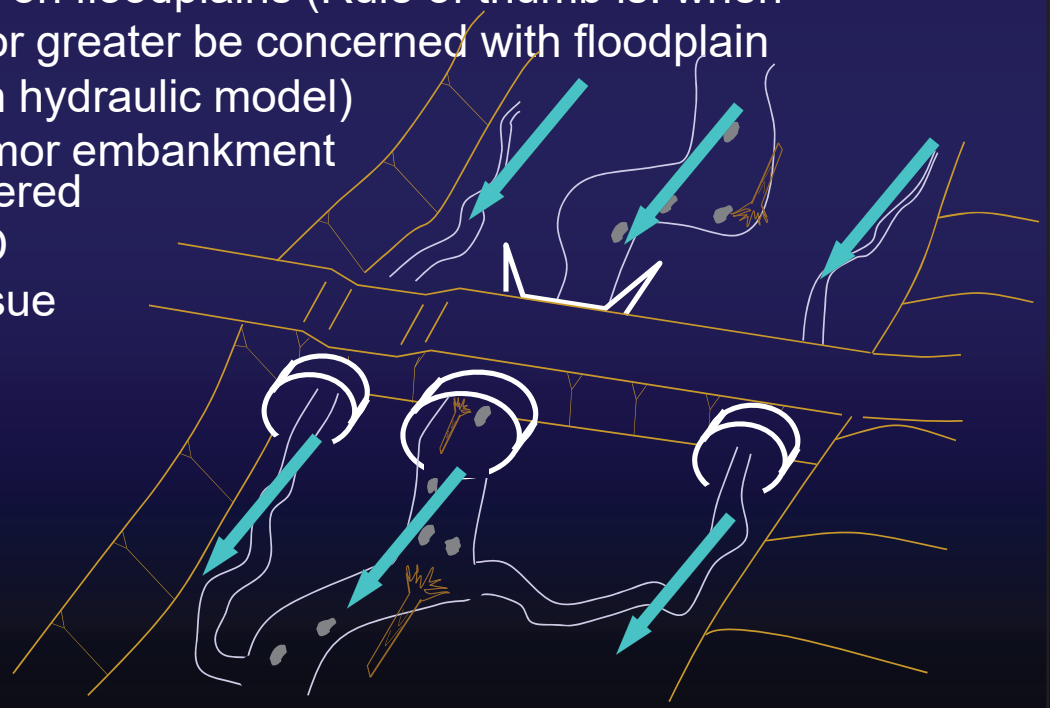


FIGURE 10: ROSGEN STREAM TYPES

Figure 11–2 Broad-level stream classification delineation showing longitudinal, cross-sectional, and plan views of major stream types

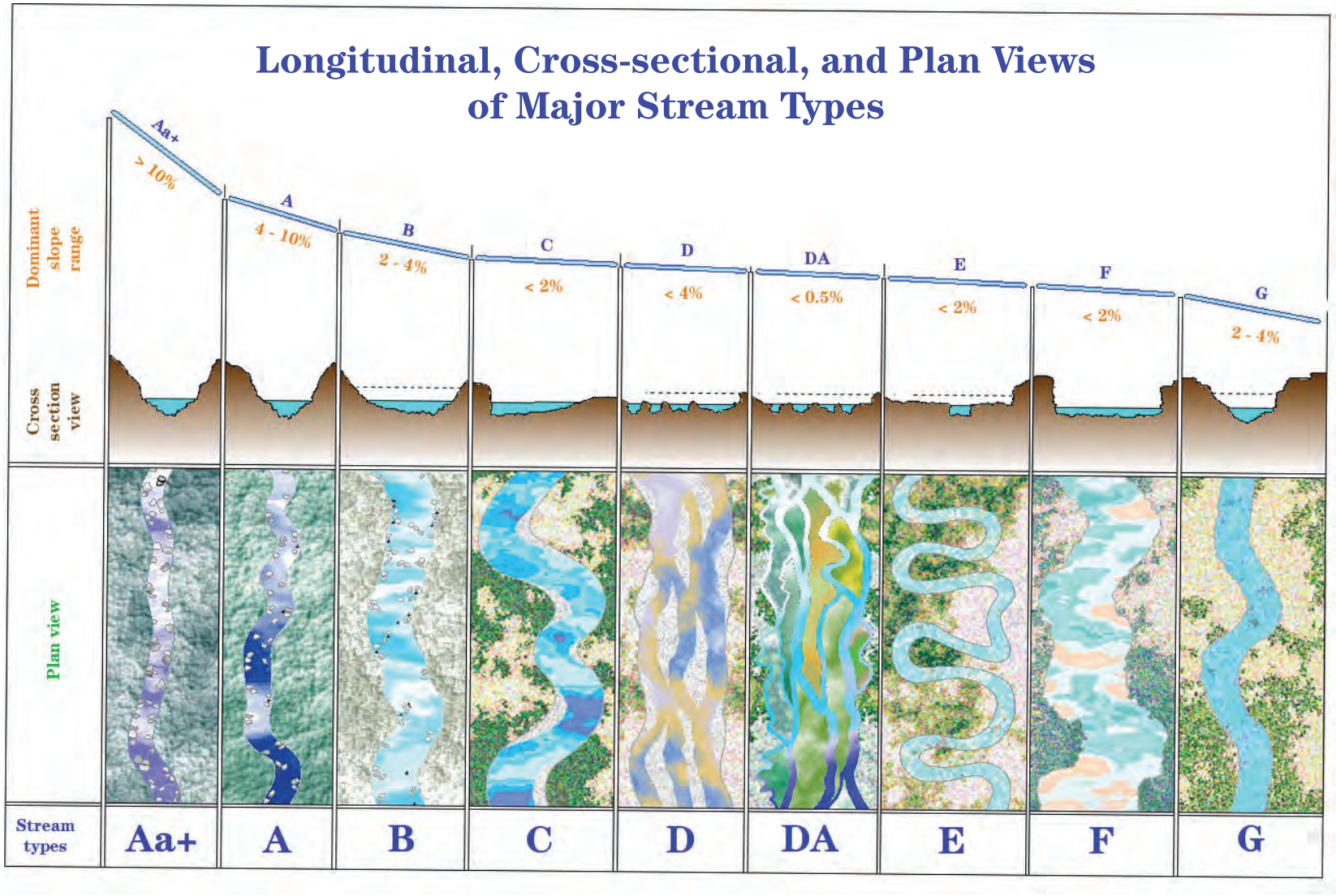
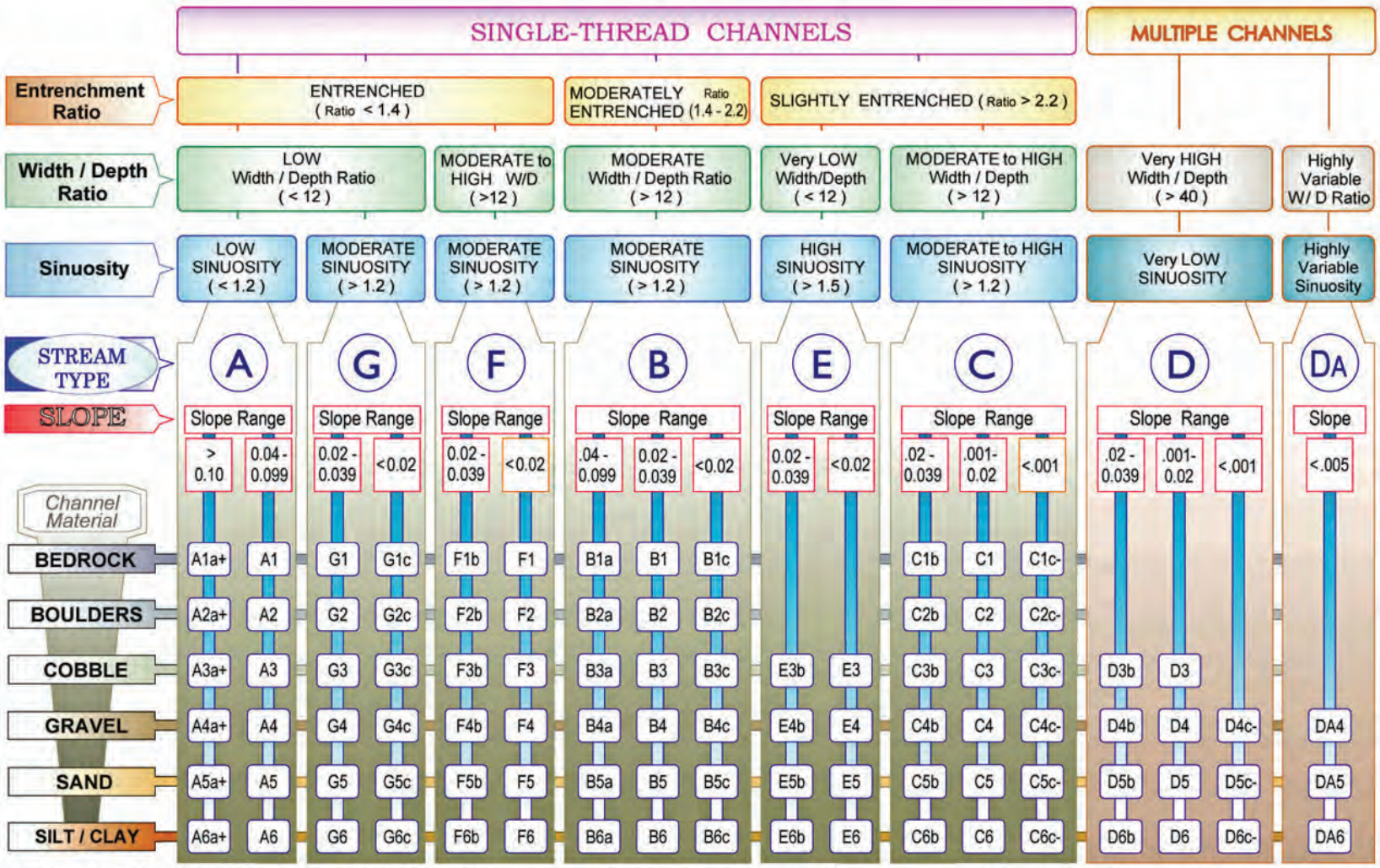


FIGURE 11: ROSGEN CLASSIFICATION KEY

Figure 11–3 Classification key for natural rivers



KEY to the *ROSGEN* CLASSIFICATION of NATURAL RIVERS. As a function of the *"continuum of physical variables"* within stream reaches, values of ***Entrenchment*** and ***Sinuosity*** ratios can vary by +/- 0.2 units; while values for ***Width / Depth*** ratios can vary by +/- 2.0 units.

FIGURE 12: DESCRIPTIONS OF ROSGEN STREAMS TYPES

Table 11–2 General stream type descriptions and delineative criteria for broad-level classification (level 1)

Stream type	General description	Entrenchment ratio	W/d ratio	Sinuosity	Slope	Landform/ soils/features
Aa+	Very steep, deeply entrenched, debris transport, torrent streams	<1.4	<12	1.0 to 1.1	>.10	Very high relief. Erosional, bedrock, or depositional features; debris flow potential. Deeply entrenched streams. Vertical steps with deep scour pools; waterfalls
A	Steep, entrenched, cascading, step-pool streams. High energy/ debris transport associated with depositional soils. Very stable if bedrock or boulder-dominated channel	<1.4	<12	1.0 to 1.2	.04 to .10	High relief. Erosional or depositional and bedrock forms. Entrenched and confined streams with cascading reaches. Frequently spaced, deep pools in associated step-pool bed morphology
B	Moderately entrenched, moderate gradient, riffle dominated channel with infrequently spaced pools. Very stable plan and profile. Stable banks	1.4 to 2.2	>12	>1.2	.02 to .039	Moderate relief, colluvial deposition and/or structural. Moderate entrenchment and width-to-depth ratio. Narrow, gently sloping valleys. Rapids predominate with scour pools
C	Low gradient, meandering, point bar, riffle/pool, alluvial channels with broad, well-defined flood plains	>2.2	>12	>1.2	<.02	Broad valleys with terraces, in association with flood plains, alluvial soils. Slightly entrenched with well-defined meandering channels. Riffle/ pool bed morphology
D	Braided channel with longitudinal and transverse bars. Very wide channel with eroding banks	n/a	>40	n/a	<.04	Broad valleys with alluvium, steeper fans. Glacial debris and depositional features. Active lateral adjustment with abundance of sediment supply. Convergence/divergence bed features, aggradational processes, high bed load and bank erosion
DA	Anastomizing (multiple channels) narrow and deep with extensive, well-vegetated flood plains and associated wetlands. Very gentle relief with highly variable sinuosities and width-to-depth ratios. Very stable streambanks	>2.2	Highly variable	Highly variable	<.005	Broad, low-gradient valleys with fine alluvium and/or lacustrine soils. Anastomized (multiple channel) geologic control creating fine deposition with well-vegetated bars that are laterally stable with broad wetland flood plains. Very low bed-load, high wash load sediment
E	Low gradient, meandering riffle/pool stream with low width-to-depth ratio and little deposition. Very efficient and stable. High meander width ratio	>2.2	<12	>1.5	<.02	Broad valley/meadows. Alluvial materials with flood plains. Highly sinuous with stable, well-vegetated banks. Riffle/pool morphology with very low width-to-depth ratios
F	Entrenched meandering riffle/pool channel on low gradients with high width-to-depth ratio	<1.4	>12	>1.2	<.02	Entrenched in highly weathered material. Gentle gradients with a high width-to-depth ratio. Meandering, laterally unstable with high bank erosion rates. Riffle/pool morphology
G	Entrenched gully step-pool and low width-to-depth ratio on moderate gradients	<1.4	<12	>1.2	.02 to .039	Gullies, step-pool morphology with moderate slopes and low width-to-depth ratio. Narrow valleys, or deeply incised in alluvial or colluvial materials (fans or deltas). Unstable, with grade control problems and high bank erosion rates

FIGURE 13: REFERENCE REACH DATA SUMMARY FORM

Table 11–3 Reference reach summary data form

River Reach Summary Data

Channel dimension

Mean riffle depth (d_{bkf})		ft	Riffle width (W_{bkf})		ft	Riffle area (A_{bkf})		ft^2
Mean pool depth (d_{bkfp})		ft	Pool width (W_{bkfp})		ft	Pool area (A_{bkfp})		ft^2
Mean pool depth/mean riffle depth		d_{bkfp}/ (d_{bkf})	Pool width/riffle width		W_{bkfp} /W_{bkf}	Pool area/riffle area		A_{bkfp}/ A_{bkf}
Max riffle depth (d_{mbkf})		ft	Max pool depth (d_{mbkfp})		ft	Max riffle depth/mean riffle depth		
Max pool depth/mean riffle depth						Point bar slope		
Streamflow: estimated mean velocity at bankfull stage (u_{bkf})					ft/s	Estimation method		
Streamflow: estimated discharge at bankfull stage (Q_{bkf})					ft^3/s	Drainage area		mi^2

Channel pattern

Geometry	Mean	Min.	Max.		Dimensionless geometry ratios	Mean	Min.	Max.
Meander length (Lm)				ft	Meander length ratio (Lm/W_{bkf})			
Radius of curvature (Rc)				ft	Radius of curvature/riffle width (Rc/W_{bkf})			
Belt width (W_{blt})				ft	Meander width ratio (W_{blt}/W_{bkf})			
Individual pool length				ft	Pool length/riffle width			
Pool to pool spacing				ft	Pool to pool spacing/riffle width			

Channel profile

Valley slope (VS)			ft/ft	Average water surface slope (S)			ft/ft	Sinuosity (VS/S)		
Stream length (SL)			ft	Valley length (VL)			ft	Sinuosity (SL/VL)		
Low bank height (LBH)	start		ft	Max riffle depth	start		ft	Bank height ratio (LBH/max riffle depth)	start	
	end		ft		end		ft		end	

Facet slopes	Mean	Min.	Max.		Dimensionless geometry ratios	Mean	Min.	Max.
Riffle slope (S_{rif})				ft/ft	Riffle slope/average water surface slope (S_{rif}/S)			
Run slope (S_{run})				ft/ft	Run slope/average water surface slope (S_{run}/S)			
Pool slope (S_p)				ft/ft	Pool slope/average water surface slope (S_p/S)			
Glide slope (S_g)				ft/ft	Glide slope/average water surface slope (S_g/S)			

Feature midpoint[a/]	Mean	Min.	Max.		Dimensionless geometry ratios	Mean	Min.	Max.
Riffle depth (d_{rif})				ft	Riffle depth/mean riffle depth (d_{rif}/d_{bkf})			
Run depth (d_{run})				ft	Run depth/mean riffle depth (d_{run}/d_{bkf})			
Pool depth (d_p)				ft	Pool depth/mean riffle depth (d_p/d_{bkf})			
Glide depth (d_g)				ft	Glide depth/mean riffle depth (d_g/d_{bkf})			

Channel materials

Geometry		Reach[b/]	Riffle[c/]	Bar		Reach[b/]	Riffle[c/]	Bar	
% Silt/clay					D_{16}				mm
% Sand					D_{35}				mm
% Gravel					D_{50}				mm
% Cobble					D_{84}				mm
% Boulder					D_{95}				mm
% Bedrock					D_{100}				mm

a/ Minimum, maximum, mean depths are the average midpoint values except pools which are taken at deepest part of pool
b/ Composite sample of riffles and pools within the designated reach
c/ Active bed of a riffle

APPENDIX C

Riparian Connectivity and Stream Health

U.S. Fish & Wildlife Service

RIPARIAN CONNECTIVITY AND STREAM HEALTH

It is the USFWS mission to work with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Service strives to maintain riparian connectivity and the Service's Conservation Planning Assistance (CPA) Branch works with project sponsors to identify project alternatives that avoid and minimize impacts to aquatic and riparian habitats.

Beyond Fish Passage: A healthy and productive stream provides a variety of habitats for fish and other aquatic life, as well as riparian habitat and movement corridors for terrestrial wildlife. The connectivity of habitats within a watershed sustains fish and wildlife populations.

Moose cow and calf using riparian corridor. Photo: USFWS

Brown bear using riparian corridor, Southwest Alaska Photo: USFWS

Fish Creek's healthy riparian habitat supports five species of Pacific salmon as well as other anadromous and resident species. Photo: USFWS

The four types of stream connectivity:

Longitudinal Connectivity is the linear connectivity between the upstream and downstream sections of a river. Structures within the floodplain or that cross the stream (e.g., roads) can interrupt longitudinal connectivity.

Vertical Connectivity consists of the interaction between surface and groundwater and includes flow through the hyporheic zone (mixing zone between surface and groundwater) and up- and down-welling through the stream bed.

Lateral Connectivity refers to the connectivity of the stream with its floodplain. Floodplain width may be narrow at a stream's headwaters and wider in downstream reaches due to more active channel meanders and larger floods. Channel incision due to channel straightening or increased discharge disconnects the channel from its floodplain, resulting in increased flood damage and the loss of floodplain habitats.

Temporal Connectivity refers to the physical, chemical, and biological interactions over time, during multi-year, annual and seasonal timeframes. Alterations to a stream's flow can isolate portions of the channel or associated habitats (e.g., side channels, oxbows), severing temporal connectivity.

Stream-floodplain-riparian corridor Donlin Creek area. Photo: USFWS

Riparian Connectivity, the key to stream health: Aquatic and riparian habitats are established and maintained by riparian and floodplain processes such as the transport of sediment and bed material, the conveyance of debris and flood flows, and the assimilation of nutrient inputs from the watershed. Nutrient inputs include marine derived nutrients from anadromous fish such as salmon, eulachon and some lamprey species. Full functioning of these riparian and floodplain processes requires connectivity from a stream's headwaters to its mouth.

Fluvial debris and sediment transport, McNeil River State Game Refuge. Photo: ADFG

Bridge and Culvert Designs: Stream crossing design criteria should focus on protecting stream health by maintaining riparian and floodplain processes. The USFWS supports use of design criteria for stream crossings that maintain normative physical processes within the stream-floodplain-riparian corridor by: **1)** promoting natural sediment transport patterns, **2)** providing unaltered fluvial debris movement, and **3)** maintaining or restoring functional continuity and connectivity of the stream-floodplain-riparian corridor.

Spawning sockeye pair, (Onchorynchus nerka) Southwest Alaska Photo:USFWS

Avoidance and Minimization: All crossings should consist of a bridge or culvert that spans the floodplain, provides for long-term dynamic channel stability, retains existing spawning habitats, maintains food (benthic invertebrate) production, and minimizes risk of failure. All crossing designs should be based on site-specific information such as: estimates of peak discharge, flow velocities and patterns; channel stability; sediment and bed load transport; flooding regime (50-year to 100-year flood frequency and magnitude); cross-section profiles of channel morphology and water surface elevations.

Avoiding a fragmented landscape: Riparian connectivity should be considered when planning or evaluating projects that could affect a stream's channel, floodplain, or riparian corridor. Land use activities that don't maintain riparian connectivity have the potential to fragment and alter habitats beyond their capacity to function ecologically.

Pacific lamprey (Lampetra tridentata), Rainbow Lake, Mat-Su Borough. Photo: EPA

For more information contact:
U.S. Fish & Wildlife Service
Anchorage Fish and Wildlife Conservation Office
4700 BLM Road
Anchorage, AK 99507
(907) 271-2888
http://alaska.fws.gov/fisheries/fieldoffice/anchorage/environmental.htm

U.S. Fish & Wildlife Service
1 800/344/WILD
http://www.fws.gov

December 2017

From:	Hogan, Melissa J (FHWA)
To:	Heather A. Campfield
Cc:	Johnson, Reuben (FHWA); Gray Rand
Subject:	FW: Anton Larsen Bay Road Extension: ADEC CSP response
Date:	Friday, April 05, 2019 3:33:58 PM

Additional project comment below…

From: Hogan, Melissa J (FHWA)
Sent: Friday, April 05, 2019 4:32 PM
To: 'Lidren, Grant M (DEC)' <grant.lidren@alaska.gov>
Subject: RE: Anton Larsen Bay Road Extension: ADEC CSP response

Dear Mr. Lidren,

Thank you for this helpful information!

Sincerely,
Melissa

Melissa J. Hogan
Environmental Specialist
FHWA Western Federal Lands
610 East Fifth Street
Vancouver, WA 98661

360-619-7735

From: Lidren, Grant M (DEC) [mailto:grant.lidren@alaska.gov]
Sent: Thursday, March 28, 2019 5:06 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Bay Road Extension: ADEC CSP response

Melissa, I received your letter regarding the Anton Larsen Bay Road Extension on March 22, 2019. The letter discusses constructing a 2-mile gravel road at the end of the existing road as well as constructing a parking area, boat launch ramp and float.

Based on my limited review, there are no known contaminated sites adjacent to the construction project. Therefore, I have no objections to the project. However, (and as stated in your letter) if contamination is encountered, ADEC must be contacted.

Thanks, Grant

Grant Lidren
Environmental Program Specialist – State Sites Coordinator
Alaska Department of Environmental Conservation
Contaminated Sites Program
(907) 269-8685

THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Natural Resources

Division of Parks and Outdoor Recreation
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501-3561
Main: 907.269.8694

March 26, 2019

Scott Smithline, Environmental Manager
Federal Highway Administration
Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661

Re: HFL-17, Project # AK TR OUZI 2017 (1)
Anton Larsen Bay Road Extension

Dear Mr. Smithline:

Thank you for the opportunity to review the proposed plans to extend Anton Larsen Bay Road and develop a parking area and boat launch near Crag Point on Kodiak Island. In response to this inquiry, I have reviewed our listing of parks and outdoor recreation facilities which have been assisted with grants from the Land and Water Conservation Fund (LWCF).

Our records show that since 1972 the City of Kodiak has invested seven LWCF grants in four recreational properties, and the Kodiak Island Borough has used one grant in a separate site. As you may know, properties assisted with LWCF are dedicated to public outdoor recreation in perpetuity, in accordance with section 6(f) of the federal LWCF Act of 1965. However, none of these protected properties are in the area of your proposed project.

Therefore, based on information provided, I determine that no property protected under the Land and Water Conservation Act will be converted to other than public outdoor recreation use.

If future plans or development result in a significant change to this project, please contact me again to review the 6(f) determination. You may e-mail me at jean.ayers@alaska.gov or call 907-269-8694.

Sincerely,

Jean Ayers
LWCF Alternate State Liaison Officer

From:	Hogan, Melissa J (FHWA)
To:	Heather A. Campfield
Cc:	Gray Rand; Johnson, Reuben (FHWA)
Subject:	FW: NOAA point of contact
Date:	Tuesday, April 02, 2019 3:50:38 PM
Attachments:	scan199834.pdf

Hi Heather,

This is just FYI related to the scoping spreadsheet list of contacts. I received a call back from Matt Eagleton at NOAA and so I don't think we need to send another letter is lieu of this one sent back. Matt does not anticipate NMFS having any issues. He thinks the road is a good thing because several vehicles have tried to drive beyond the end of the road and gotten themselves stuck!

Thanks,
Melissa

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
610 EAST 5TH STREET
VANCOUVER, WA 98661-3801

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Gretchen Harrington
NOAA National Marine Fisheries Service
Alaska Regional Office
PO Box 21767
Juneau AK 99802

Person not known

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ATTEMPTED - NOT KNOWN
UNABLE TO FORWARD
BC: 98661389399 *2304-00792-19-45

~~99802-176767~~ ANK
98661>3893

Heather A. Campfield

From: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Sent: Friday, April 12, 2019 11:55 AM
To: Heather A. Campfield
Cc: Johnson, Reuben (FHWA); Gray Rand
Subject: FW: Anton Larsen Bay Road Extension, AK TR OUZI 2017(1)

FYI – project comment & response below…

From: Hogan, Melissa J (FHWA)
Sent: Friday, April 12, 2019 12:54 PM
To: Rollins, Mark W (DNR) <mark.rollins@alaska.gov>
Cc: Johnson, Reuben (FHWA) <Reuben.Johnson@dot.gov>
Subject: RE: Anton Larsen Bay Road Extension, AK TR OUZI 2017(1)

Dear Mr. Rollins,

Thank you for taking the time to research and comment on this project!

Sincerely,
Melissa

Melissa J. Hogan
Environmental Specialist
FHWA Western Federal Lands
610 East Fifth Street
Vancouver, WA 98661

360-619-7735

From: Rollins, Mark W (DNR) [mailto:mark.rollins@alaska.gov]
Sent: Monday, April 08, 2019 4:46 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Cc: Johnson, Reuben (FHWA) <Reuben.Johnson@dot.gov>
Subject: Anton Larsen Bay Road Extension, AK TR OUZI 2017(1)

3130-1R WFLHD
RevComp ID# 2019-00352

Hi Melissa,
The Alaska State Historic Preservation Office (AK SHPO) received the subject project for review (dated March 19, 2019) on March 21, 2019. Following our review of the documentation provided, we recommend establishing the area of potential effects (APE). The APE, as defined at *36 CFR § 800.16 (d)*, should encompass the geographic area within which an undertaking may directly or indirectly affect historic properties. Following the establishment of the APE, varying levels of identification may be appropriate depending on the nature, scale, and scope of the proposed project. It appears that two surveys have been completed for the project based on the cultural resources section and references of the *Preliminary Environmental Research* document. As such, we look forward to receiving the results of the cultural resources surveys conducted by DOT&PF (2014 & 2018), as well as future consultation pursuant to Section 106 of the

National Historic Preservation Act. The AK SHPO has no additional information regarding cultural resources (historic, prehistoric, and archaeological sites, locations, remains, or objects) at this time for the subject project.

Thank you for sending a request for comments letter to our office. Please let me know if we can be of further assistance.
-Mark

Mark W. Rollins
Archaeologist II
Alaska State Historic Preservation Office/ Office of History and Archaeology
550 W 7th Ave., Suite 1310
Anchorage, AK 99501

(907) 269-8722

APPENDIX A

Meeting Advertisement and Flyer

AFFP

Federal Highway Administration

Affidavit of Publication

STATE OF ALASKA }
COUNTY OF KODIAK ISLAND BOROUGH } SS

Sara Schaefer, being duly sworn, says:

That she is Publisher of the Kodiak Daily Mirror, a daily newspaper of general circulation, printed and published in Kodiak, Kodiak Island Borough County, Alaska; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

October 05, 2018, October 10, 2018, October 19, 2018, October 24, 2018

That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Sara Schaefer

Publisher

Subscribed to and sworn to me this 24th day of October 2018.

Janet S Baker

Janet S. Baker, Notary Public, Kodiak Island Borough County, Alaska

My commission expires: March 17, 2021

JANET S. BAKER
Commission # 170317001
NOTARY PUBLIC
My Commission Expires 03-17-2021
STATE OF ALASKA

00006554 00057323

Heather Campfield
Hattenburg Dilly and Linnell HDL
202 West Elmwood Ave
Palmer, AK 99645

Federal Highway Administration

Notice of Public Meeting
for
Anton Larsen Bay Road Extension
Project No. AK TR OUZI 2017(1)

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, invites you to attend an Open House Public Meeting to discuss the proposed extension of Anton Larsen Bay Road on Kodiak Island, approximately 11 miles northwest of Kodiak, Alaska. The project scope includes constructing approximately two-miles of gravel road extending the existing 11.7 mile Anton Larsen Bay Road. About half of the proposed project closely follows an existing, private, all-terrain vehicle trail. The remaining project continues northwest through undeveloped wilderness. The project would terminate with a parking lot and boat launch ramp near Crag Point.

The project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA plans to complete an Environmental Assessment as part of the National Environmental Policy Act process, which considers the beneficial and adverse effects of federal, federally-funded, and/or federally-permitted projects on the quality of the human environment. Construction funding has not been secured.

Scheduled Meeting Locations

Wednesday, October 24, 2018
Kodiak Public Library Multipurpose Room
612 Egan Way
Kodiak, Alaska
3:00 PM – 6:00 PM

Thursday, October 25, 2018
Ouzinkie Tribal Community Hall
10:00 AM – 11:30 AM
Native Village of Port Lions Tribal Hall
1:00 PM – 2:30 PM

FHWA requests information and comments on resources in the study area that may be affected. The following executive orders apply:

Executive order 11990, Notice of Wetland Involvement;
Executive Order 12898, Environmental Justice;
Executive Order 11593, Protection and Enhancement of Cultural Environment;
Executive Order 11988, Floodplain Management;
Executive Order 13112, Invasive Species.

For more information, or if you would like to submit comments outside the public meeting, please contact:

Melissa Hogan, FHWA Environmental Specialist
Email: Melissa.j.hogan@dot.gov
Telephone: (360) 619-7735
Project Website: https://flh.fhwa.dot.gov/projects/ak/anton-larsen/

The deadline for submitting comments is November 26, 2018. If you require special accommodations in order to participate in this meeting, please call in advance so arrangements can be made to assist you.

Federal Highway Administration

Notice of Public Meeting
for
Anton Larsen Bay Road Extension
Project No. AK TR OUZI 2017(1)

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For more information, or if you would like to submit comments outside the public meeting, please contact:

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The deadline for submitting comments is November 26, 2018. If you require special accommodations in order to participate in this meeting, please call in advance so arrangements can be made to assist you.

STATUS: Active

AK DOT&PF Southcoast Region Notice of Intent to Begin Engineering & Environmental Studies: Anton Larsen Bay Rd Extension State Proj Z-68420-0000

****

The Alaska Department of Transportation and Public Facilities (DOT&PF) proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska.

The project would

Construct two miles of gravel road starting at the end of the existing Anton Larsen Bay road, following an existing ATV trail, and continues north as the trail heads east. The road would end at the beach near Crag Point with a parking area and boat launch ramp. The proposed route crosses multiple streams which would require culverts and drainage features along the road.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). The Department is providing engineering services to SIDCO under agreement.

Construction funding has not yet been secured.

Possible affected resources include wetlands and waters of the U.S., essential fish habitat, eagles, and cultural or historic properties.

The project would comply with these authorities:

- National Historic Preservation Act – Sect.106
- Clean Air & Clean Water Acts
- Bald & Gold Eagle Protection Act
- Alaska Statute 41.35.070 Historic Preservation
- Endangered Species Act
- Floodplain Protection (E.O. 11988)

Comments on the proposal from interested persons will assist us in completing the project design and preparing the project's environmental documentation.

Please submit your written comments to:

Jill Taylor, Project Environmental Coordinator
DOT&PF, South-coast Region Phone: 907-465-1826
P.O. Box 112506 FAX: 907-465-3506
Juneau AK 99811-2506 E-mail: jill.taylor@alaska.gov

Also more information can be found on the following DOT &PF Website

http://dot.alaska.gov/sereg/projects/kodiak_anton_larsen_bay/index.shtml

If you or someone you represent requires special accommodations in order to respond to this public notice, please call or email the project coordinator listed above or call Alaska Relay at

(800) 770-8973 for TTY (800) 770-8255 for voice

(800) 770-3919 for ASCII (866) 355-6198 for STS

Ask the communications assistant to call the project coordinator listed above so arrangements can be made to assist you.

COMMENTS ARE REQUESTED BY February 12, 2016.

Attachments, History, Details

Attachments
None

Revision History
Created 1/8/2016 5:55:08 PM by kldirks
Modified 1/8/2016 5:57:49 PM by kldirks [Details]
Modified 1/8/2016 5:59:05 PM by kldirks [Details]
Modified 1/8/2016 6:04:15 PM by kldirks [Details]
Modified 1/8/2016 6:08:44 PM by kldirks [Details]

Details

Department:	Transportation and Public Facilities
Category:	Public Notices
Sub-Category:	
Location(s):	Kodiak
Project/Regulation #:	
Publish Date:	1/8/2016
Archive Date:	2/13/2016
Events/Deadlines:	

PUBLIC OPEN HOUSE

Anton Larsen Bay Road Extension

Wednesday,
October 24, 2018
3 pm – 6 pm
Kodiak
Public Library
Kodiak, AK

Thursday,
October 25, 2018
10 am – 11:30 am
Community Hall
Ouzinkie, AK

Thursday,
October 25, 2018
1 pm – 2:30 pm
Tribal Hall
Port Lions, AK

Project Overview

The Western Federal Lands Highway Division of the Federal Highway Administration *(FHWA)*, in partnership with the Native Village of Ouzinkie *(NVO)* proposes to extend the Anton Larsen Bay Road for approximately two-miles to a planned parking area and boat launch near Crag Point. The road extension and boat launch would provide better access to goods and services, including emergency services, offered in Kodiak to those in remote locations including Ouzinkie, Port Lions, and remote logging camps.

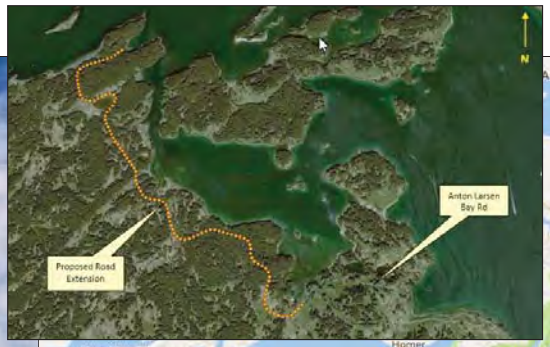
The purpose of this public scoping meeting is to inform the public and interested stakeholders of the environmental assessment process being undertaken and for the project team to gain a better understanding of the range of issues to be addressed and the extent of their effect on the human environment.

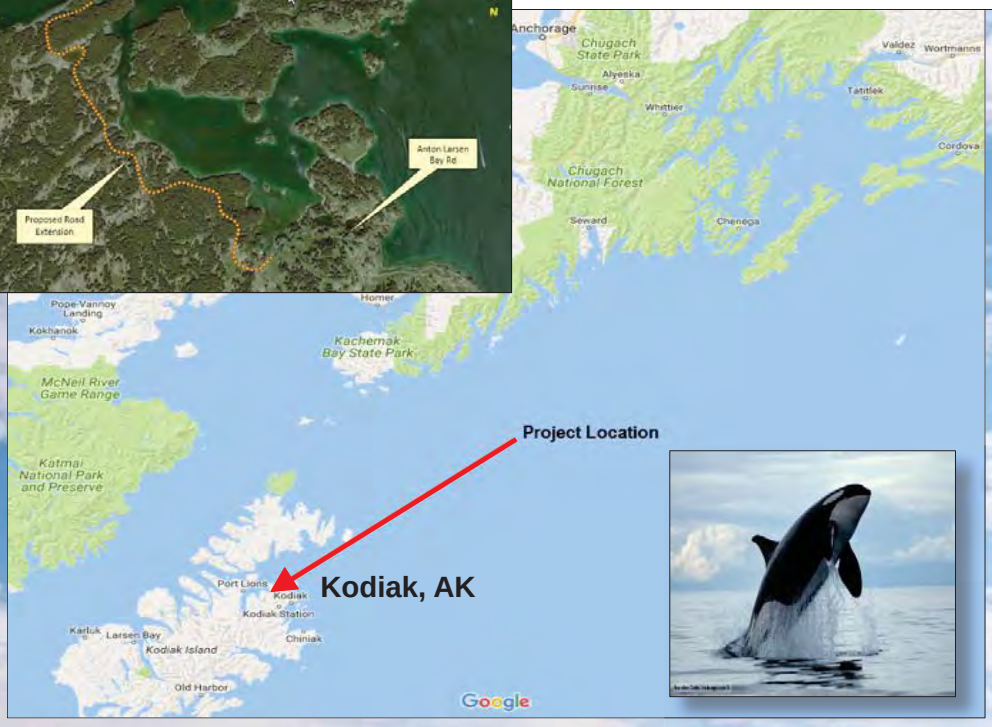
Project Purpose and Need

- Provide a safer and more reliable year-round transportation link between Kodiak and outlying communities;
- Support economic development through efficient access;
- Improve access to recreation and subsistence activities.

Maintained ATV trail at creek crossing.

Typical small creek crossed by an ATV trail.





Comments and Contact Information

Questions or comments can be sent via mail or email to:

Melissa J. Hogan
Phone: 360-619-7735
Environmental Specialist
Melissa.J.Hogan@dot.gov

FHWA Western Federal Lands Highway Division
610 East Fifth Street
Vancouver, WA 98661-3801

Visit the project website for more information: https://flh.fhwa.dot.gov/projects/ak/anton-larsen/

ANTON LARSEN BAY ROAD EXTENSION

APPENDIX B

Meeting Materials

Please fold here and tape at bottom for mailing.

APPLY
POSTAGE
HERE

Melissa Hogan, FHWA Environmental Specialist
Federal Highway Administration Western Federal
Lands Highway Division 610 East Fifth Street
Vancouver, WA 98661-3801

U.S. Department of Transportation
Federal Highway Administration

ANTON LARSEN BAY ROAD EXTENSION

Kodiak, Alaska

Please share your comments.

Comments can also be e-mailed to melissa.j.hogan@dot.gov. For more project information, visit: www.wfl.fhwa.dot.gov/projects/ak/anton-larsen/

Name: _____

E-mail: _____

Address: _____

City: _____ State: _____ Zip: _____

Please add me to the project e-mail list. ☐

ANTON LARSEN BAY ROAD EXTENSION

Project Overview

The Western Federal Lands Highway Division of the Federal Highway Administration *(FHWA)*, in partnership with the Native Village of Ouzinkie *(NVO)*, proposes to extend the Anton Larsen Bay Road for approximately two-miles to a planned parking area and boat launch near Crag Point. The road extension and boat launch would provide better access to goods and services, including emergency services, offered in Kodiak to those in remote locations including Ouzinkie, Port Lions, and remote logging camps.

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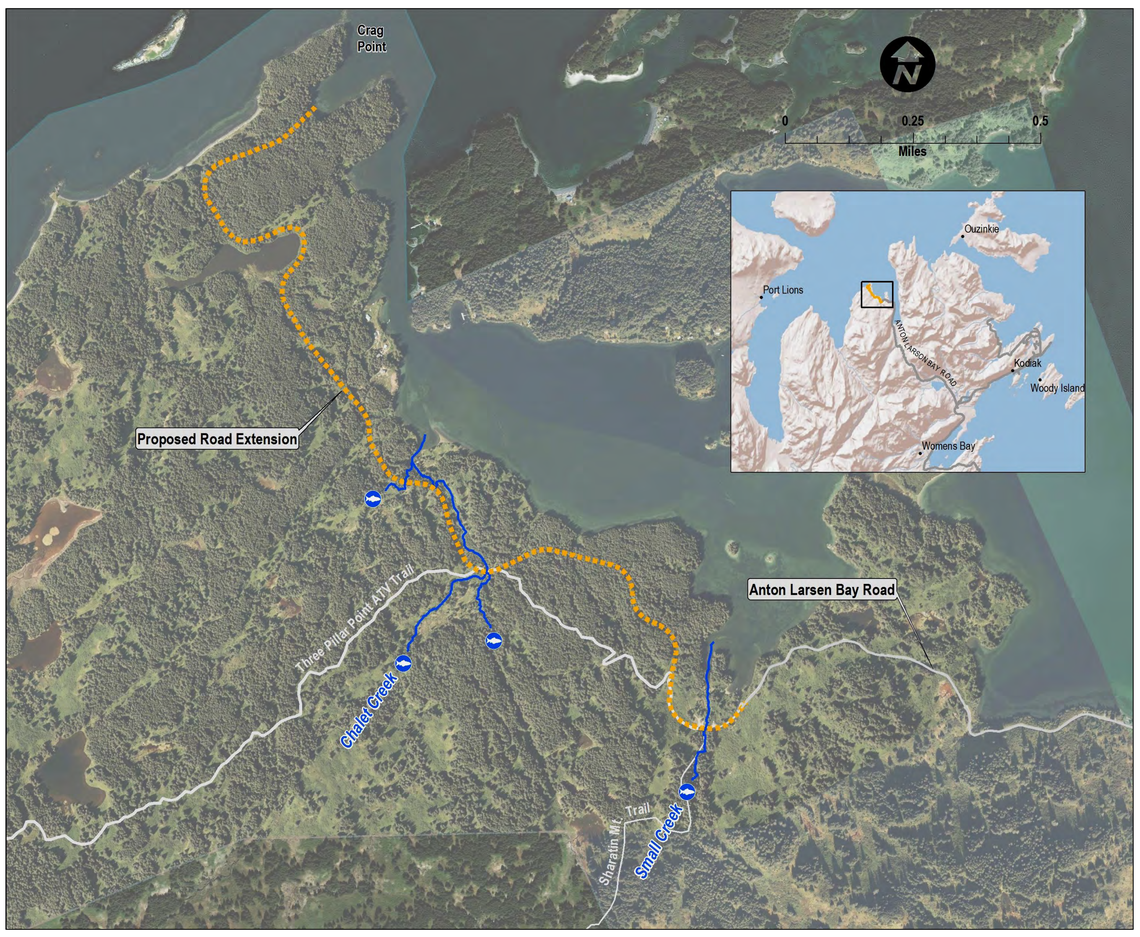


Project Purpose and Need

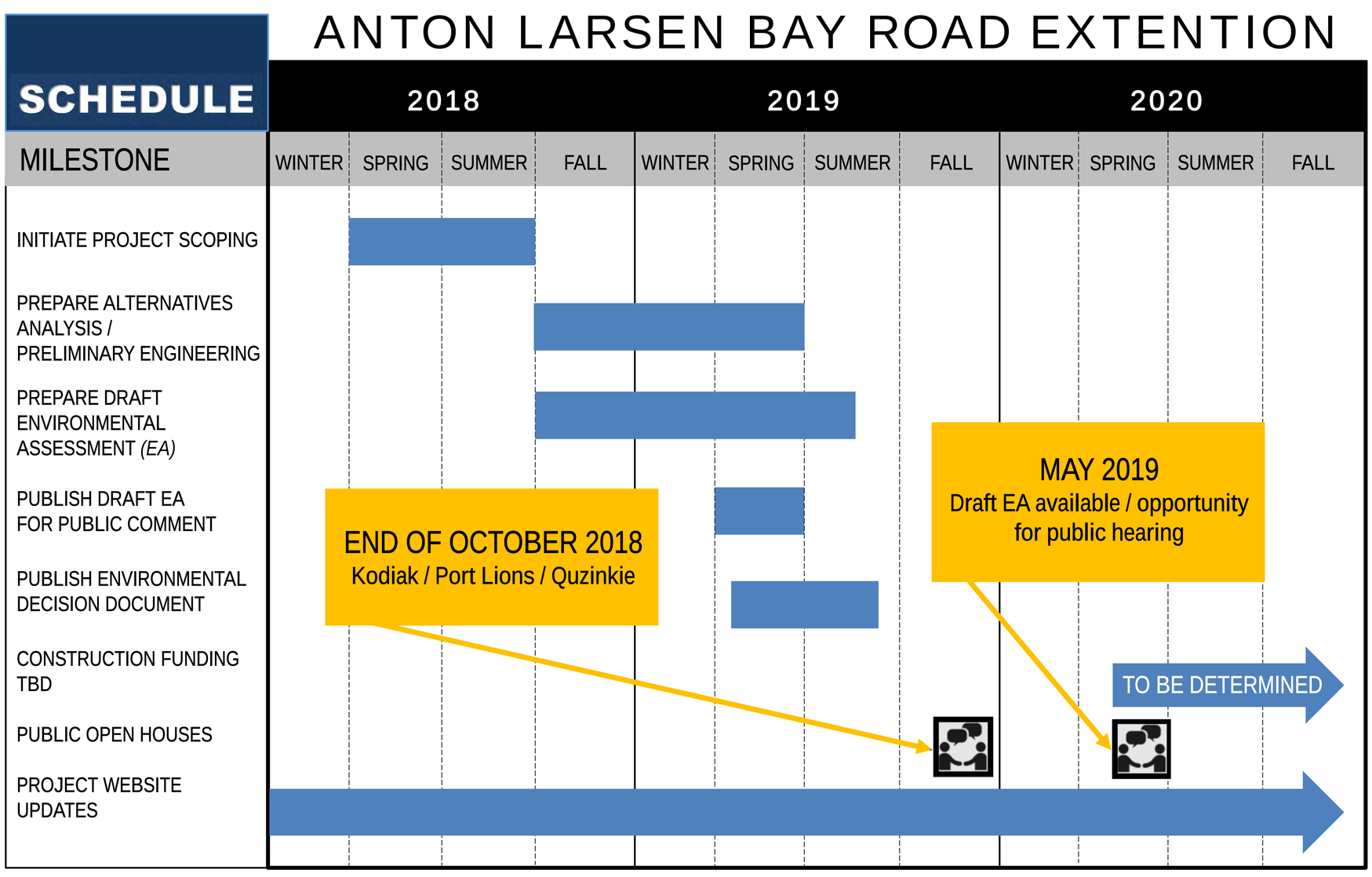
- Provide a safer and more reliable year-round transportation link between Kodiak and outlying communities;
- Support economic development through efficient access;
- Improve access to recreation and subsistence activities.

Potential Environmental Issues:

- **Historic & Cultural Resources**
- **Migratory Birds / Bald & Golden Eagles**
- **Threatened & Endangered Species**
- **Rivers, Streams, & Lakes**
- **Alaska Maritime National Wildlife Refuge**

Studies Completed to Date:

- Draft Cultural Resource Reconnaissance Report *(June 2014)*
- Alaska Department of Fish & Game Stream Survey *(December 2015)*
- Project Scoping by State of Alaska Department of Transportation & Public Facilities *(January 2016)*
- Invasive Species Inventory *(June 2016)*
- Wetland Delineation Report and Mapping *(June 2016)*
- Preliminary Geotechnical Reconnaissance Memo



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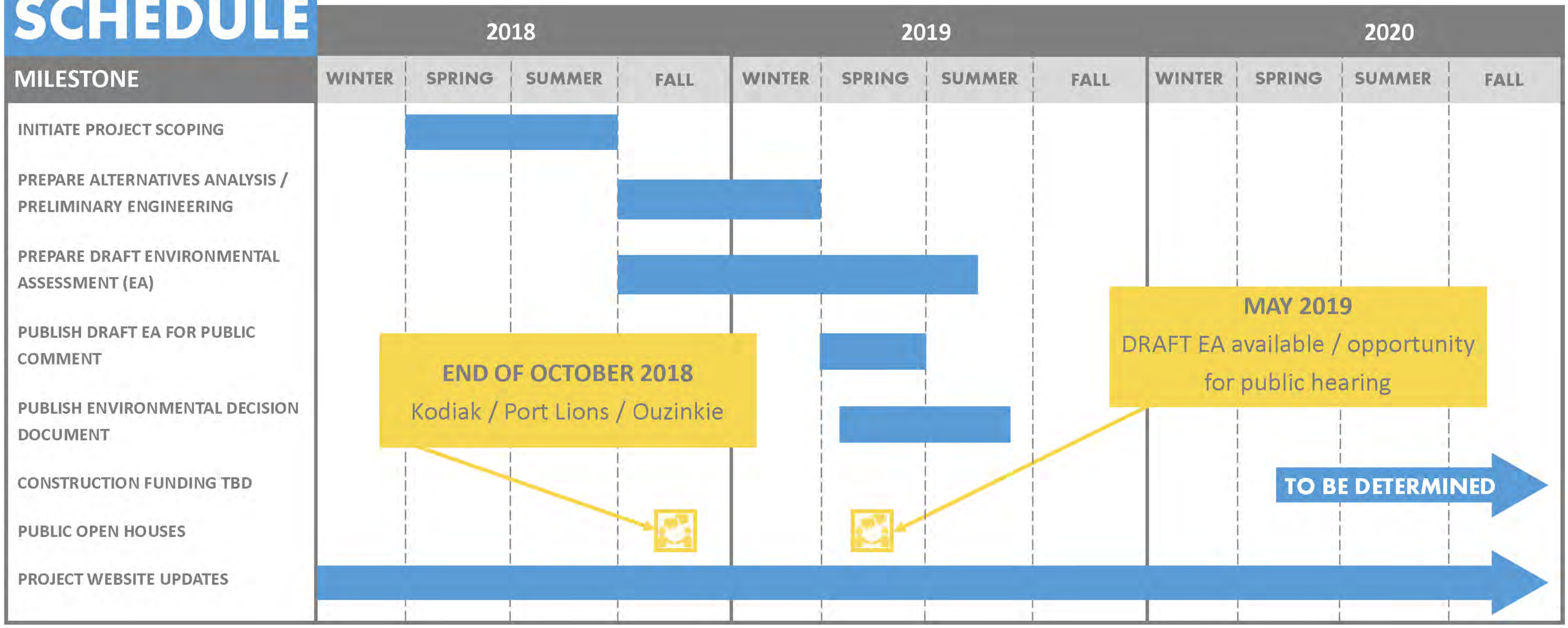
Melissa J. Hogan
Phone: 360-619-7735
Environmental Specialist
Melissa.J.Hogan@dot.gov

FHWA Western Federal Lands Highway Division
610 East Fifth Street
Vancouver, WA 98661-3801

Website: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/

ANTON LARSEN BAY ROAD EXTENSION

SCHEDULE



PROJECT WEBSITE

For more project specific information or to provide comments please go to our project website at:

https://flh.fhwa.dot.gov/projects/ak/anton-larsen/

PROJECT CONTACT INFORMATION

FEDERAL HIGHWAY ADMINISTRATION WESTERN FEDERAL LANDS HIGHWAY DIVISION

Reuben Johnson
Phone: (360) 619-7995
Email: Reuben.Johnson@dot.gov

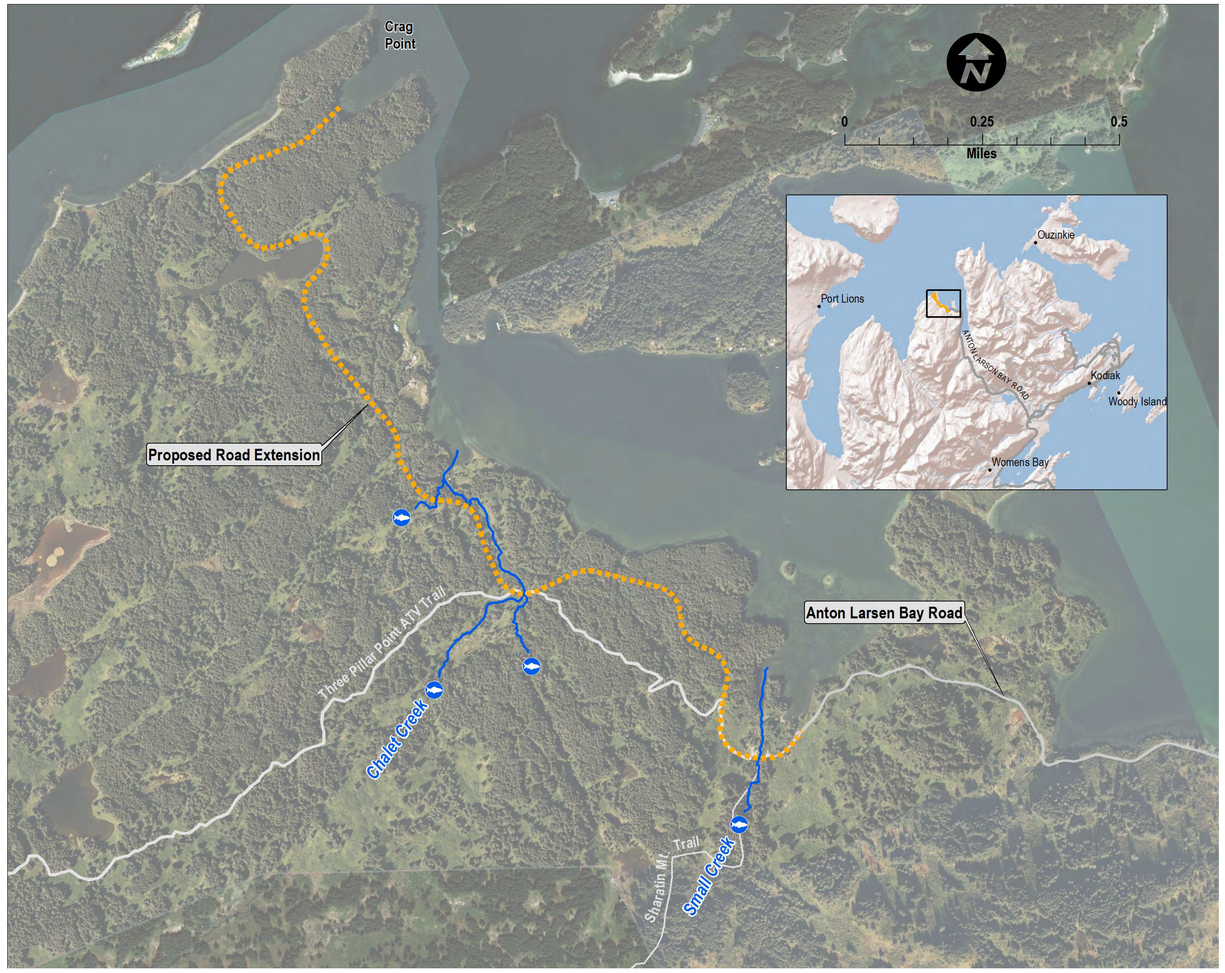
610 East Fifth Street
Vancouver, Washington
98661

Melissa J. Hogan
Phone: (360) 619-7735
Email: Melissa.J.Hogan@dot.gov

610 East Fifth Street
Vancouver, Washington
98661

ANTON LARSEN BAY ROAD EXTENSION

PROJECT LOCATION



PROJECT SCOPE

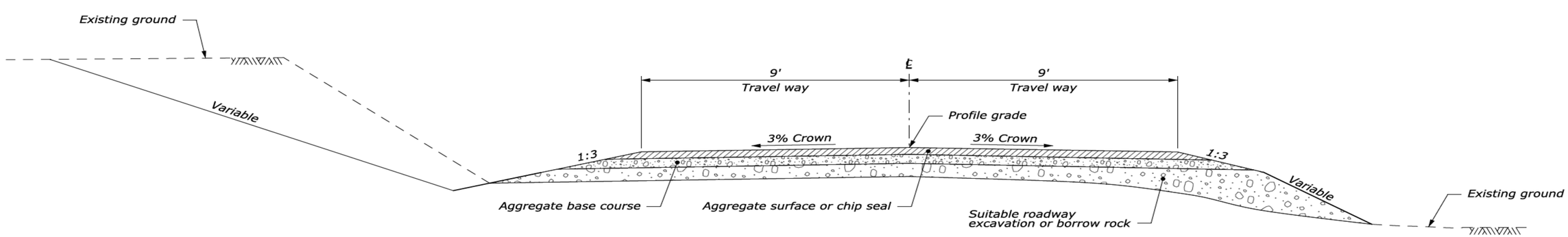
The Western Federal Lands Highway Division of the Federal Highway Administration, in cooperation with the Native Village of Ouzinkie, proposes to extend Anton Larsen Bay Road for approximately two miles to a planned parking area and boat launch near Crag Point.

PROJECT PURPOSE & NEED

The purpose of the project is to provide a safer and more reliable year-round transportation link between Kodiak and outlying communities. Safer and more reliable access to Kodiak fulfills the following needs:

- Improved access to emergency services offered in Kodiak
- Improved safety and reliability for those traveling to Kodiak from remote locations
- Improved access to recreation and subsistence activities
- Supports economic development of the area

TYPICAL SECTION



TYPICAL SECTION

(NTS)

ANTON LARSEN BAY ROAD EXTENSION

Environmental Considerations & Consultation Requirements

Historic & Cultural Resources

The National Historic Preservation Act of 1966 (as amended) governs the protection/preservation of cultural resources.

A reconnaissance level cultural resource survey identified the presence of cultural/historic resources in the area of the proposed road extension. Consultation with the Alaska Department of Natural Resources State Historic Preservation Office, Tribes, and Other Interested Parties regarding impacts to resources will be completed.

Migratory Birds/Bald & Golden Eagles

Protected by the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act of 1940 (as amended)

Known eagle nest within 0.5 miles of proposed project

Migratory bird habitat within project area

Threatened & Endangered Species

The Endangered Species Act of 1973 was designated to protect critically compromised species from extinction, including fish, wildlife, and plants that are listed as Endangered or Threatened. The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) are the primary federal agencies monitoring Threatened and Endangered species and their habitats. Consultation with the USFWS and NMFS under the Endangered Species Act and Marine Mammal Protection Act will be completed regarding the following species:

- **USFWS Jurisdiction**
  - Northern Sea Otter and its Designated Critical Habitat Area
  - Short-tailed Albatross
- **NMFS Jurisdiction**
  - Steller Sea Lion
  - Northern Pacific Right Whale
  - Sperm Whale
  - Humpback Whale
  - Fin Whale
  - Gray Whale
  - Dolphins
  - Seals

Rivers, Streams, & Lakes

Salmon habitat is of particular importance because they sustain fish populations crucial to subsistence based communities. Per the Magnuson-Stevens Fishery Conservation and Management Act, work conducted within a stream may require the following consultations:

U.S. Army Corps of Engineers – Waters of the U.S.

National Marine Fisheries Service – Essential Fish Habitat Assessment

Alaska Department of Fish & Game - Title 16 Fish Habitat Permit

Alaska Maritime National Wildlife Refuge

Established as a conservation measure for marine mammals, seabirds, and other migratory birds as well as the marine resources they rely upon. Designated lands are located at the entrance to Anton Larsen Bay and will be considered in the development of the proposed project.

Studies Completed to Date:

- Draft Cultural Resource Reconnaissance Report (June 2014)
- Alaska Department of Fish & Game Stream Survey (December 2015)
- Project Scoping by State of Alaska Department of Transportation & Public Facilities (January 2016)
- Invasive Species Inventory (June 2016)
- Wetland Delineation Report and Mapping (June 2016)
- Preliminary Geotechnical Reconnaissance Memo

ANTON LARSEN BAY ROAD EXTENSION
Anton Larsen Bay
Marine Waters:
Stellar Sea Lion
Designated Critical Habitat
Crag
Point
Proposed Parking Lot
and Boat Launch
Anton Larsen Bay Road
Proposed Road Extension
Small Creek
Chalet Creek
Three Pillar Point ATV Trail
Sharatin Mt. Trail
0
0.25
0.5
Miles
Road Extension Proposed Alignment
Sharatin Mt Trail
Three Pillar Point ATV Trail
Wetlands (National Wetland Inventory)
Anadromous Fish Streams
Northern Sea Otter Designated Critical Habitat
Alaska Maritime National Wildlife Refuge Boundaries

APPENDIX C

Meeting Sign-in Sheets

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Mariel Ellingson	brfish.dehart@outlook.com	Y	819 Lower Mill Bay Road	Kodiak, AK	99615
Cindy Armstrong	dcarmstrong45@gmail	y	Anton Larsen Istand	Kodiak AK	99615
Midge Short	dog-girl22@hotmail.com	Y	Anton Larsen Island.	Kodiak AK	99615
Natasha Hayden	nhayden@afognak.com	Y	305 Nera Way	Kodiak	99615
Nina Gronn	nina@afognak.org	Y	115 Mill Bay Rd	Kodiak	99615
Will Frost	WdFrost56@Gmail.com	Y	225 E. 11th Ave Anchorage, AK 99501	ANC	99501
Jan Axell	janaxell@yahoo.com		Anton Larsen Istand	Kodiak	99615
JEFF & MARGARET STEWART					

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Maggie Slife	mslife@kodiakak.us	Y	710 Mill Bay Rd	Kodiak	99615
Don Dumm	sourdoughsolar@gmail.com	Y	Anton Larsen Island	Kodiak, AK	99615
Susan Payne	" "	"	Anton Larsen Island	"	"
Molly Odell	odellmolly@gmail.com	N	3395 Tugidak Ct	"	"
Nancy Nelson	nancy@afognak.org	Y	Box 88163 Kodiak	"	"
Bob Brodie	66brodie@alaskan.com	Y	Box 296	"	"
Rob Baer	KODIAKROB@GMAIL	Y	2847 LAKEVIEW	"	"
Julie Kavanaugh	sylstar@acsalaska.net	Y	1533 Sawmill	Kodiak AK	"

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Ted Panamarioff	tedpan2@gmail.com	Y	1912 Millberg #3	99615	
Lila Schwantes		Y	Box 1911, Kodiak, AK	99615	
Dan Armstrong	dcarmstrong45@gmail	Y	PO Box 8793 Kodiak AK	Kodiak	99615
GINA JOHNSON	ginaj@ptialaska.net	Y	PO BOX 2885 KODIAK AK		99615
A. GARDINER	al@kodiakdailymirror.com	Y	2578 METROKIN WAY	Kodiak AK	99615
Crystal Boskofsky	cboskofsky@ouzinkie.com	N	1101 Fred Circle Anch. AK 99515		
Coral Chernoff	coralchernoff@hotmail	N	224 W. Rezanof Dr	Kodiak, AK	99615
Joseph Pelgado	jdelroad@gmail.com	Y	Box 61 Ouzinkie	AK	99644

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Kodiak Public Library
Kodiak, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
(Transportation Coordinator)					
Randy Boskofsky	rboskofsky@sunag.org				
Tom Schwantes	Thomas_Schwantes@hotmail.com		180 Otter Ave	AK	99615
Bruce Short	ootuks@gmail.com		Anton Larsen Rd.	Kodiak	99615
Darren Muller	dmuller@ouzinkie.com		Ouzinkie, AK		
Petrina Peterson	kodiak_kid@msn.com	Y	PO Box 170 Anton Larsen Bay	Kodiak	99615
Andy Peterson	"	"	"	"	"
Duncan Fields	dfields@gtialaska.net	Y	4022 Cliffside, Kodiak, AK	"	99615

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Tribal Hall
Kodiak ~~Port Lions,~~ AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
John Stella	captains200@yahoo	Y	PO Box 8895	Kodiak	99615
Leslie Stella	rivershore1507@yahoo.com	Y	PO BOX 8895	Kodiak	99615
Ryan Cross	ryanscross@gmail.com	Y	3395 Tagidak Ct	Kodiak	99615
Brian Himelbloom	kayakadg@gmail.com	Y	PO Box 1866	Kodiak	99615
Mike Milligan	mikemilligan74gmail.com	Y	12056 Gara Dr.	Kodiak	99615

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Tribal Hall

Kodiak ~~Port Lions~~, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Daniel MF		N			
Vanel Day	jday@kodiakak.us	Yes			
CRAIG DeHART	kodiakdehart@gmail.com	Y	819 Lower Mill Bay Rd	Kodiak, AK	99615
stosh Anderson	stosh_a@hotmail.com	Y	Box 310	Kodiak AK	98615
GEOFF SMITH	68gsmith@gmail	Y	PO BOX 2364 Kodiak, AK 99615		
Neil Moomey	neil@neilmoomey.com	Y	1769 Three Sisters Way	Kodiak	99615
Deb Houlden-Engvall			1112 East Rezanof	Kodiak	99615
Eric Engvall		N	1112 E. Rezanof Dr.	Kodiak	99615

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Ouzinkie, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Peter M. Shanagin Sr	Otcadmin@Ouzinkie.org	Y	P.O. Box 101	Ouzinkie, AK	99644
Larissa Boskofsky	lkpan@hotmail.com	Y	PO Box 1	Ouzinkie, AK	99644
James Skonberg	james.skonberg@gmail.com	Y	Box 70	"	"
Jill Boskofsky	jillboskofsky977@yahoo	Y	P.O Box 118	Ouzinkie AK	99644
Randy Boskofsky					
fred Shanagin	fshanagin@gmail.com	Y	Box 86 Ouzinkie, AK	Ouzinkie, AK	99644
Love C Panamarioff	Dakota_Love0a@hot	Y	Box 15	Ouzinkie, AK	99644
Peter Shanagin Sr	biggerbub60@Yahoo.com	Y	Box 101	Ouzinkie AK	99644

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Ouzinkie, AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Sofia Chyu		N	#50 spruce street	Ouzinkie AK	99644
[illegible]		N		Ouzinkie AK	99644
Sophia Clarion		N	# 5 5th Street	Ouzinkie	99644
Robert Boskofsky		N	11 C Street	Ouzinkie AK	99644
Linda Getz		N	1.5 mi East of Ouzinkie	Ouzinkie, AK	99644
Joseph [illegible]	jdelroads@gmail.com	Y			
Gene Anderson	Ouzinkie			Ouzinkie	99644
Dan Clarion	dcwokman@yahoo.com	Y	3rd and C street Box 71 Ouzinkie AK 99644	Ouzinkie Alaska	99644

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Ouzinkie, AK

Please Sign In.

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DARREN MULLER	dmuller@ouzinkie.com	Y	OUZINKIE	AK	

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Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall

Port Lions [redacted], AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
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Kevin Adkins	kwa@gci.net	Y	400 Main St. Port Lions 99550	Port Lions	99550
GEORGE WEAVER	WEAVERGW@YAHOO.COM	Y	P.O. Box 46 PORT LIONS, AK 99550	PORT LIONS	99550
Charlea Kewan	charleajoyk@gmail.com	Y	216 Malina Street / Box 65 Portlions, Ak 99550		99550
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Susan Boskofsky	sboskofsky@yahoo.com	Y	308 Hillside Dr Port Lions AK 99550		
Becky & Daryl Serjeant	dserjeant22@gmail	Y	Box 28 Port Lions, AK 99550		
LaToya Hartley	lrlukin@gmail.com	Y	Box 116 Port Lions AK 99550		

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Anton Larsen Bay Road Extension Project

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Port lions [redacted], AK

Please Sign In.

Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
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Judith Clayton	anrari31@live.com	Y	139 Kizhuyak Dr.	Port Lions AK	99550
Lukas Serjeant	lserjeant@gmail.com	N	103 Birch Dr	Port Lions	99550
Yvonne Mullan	administrator@portlionstribe.org	Y	P.O. Box 69	Port Lions	99550
Denise May	denise@camai.com	Y	P.O. Box 90	Port Lions	99550
MARTY SHURAVLOFF	MSHURAVLOFF@OUTLOOK.COM	Y	P O BOX 115	PORT LIONS	99550
WAYNE LUKIN		Y	PO BOX 72	PORT LIONS	99550

U.S. Department of Transportation
Federal Highway Administration

Anton Larsen Bay Road Extension Project

Community Hall
Port Lions ~~Ouzinkie~~, AK

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Name (Please print)	E-mail	Join the mailing list! Y or N	Street Address	City, State	ZIP Code
Lester Lukin, Sr.	sugarbug-79@yahoo.com	Y	POBOX 67	Port Lions, AK	99550
Willie Nelson				Port Lions AK	99550

APPENDIX D

Public Comments

NAME	DATE	TOPIC	COMMENT
Shawna Hegna, President, Koniag	11/19/2018	Access Emergency Service Safety	Koniag is a regional Alaska Native Corporation formed under the terms of the Alaska Native Claims Settlement Act of 1971. Part of Koniag's mission is to support the six village communities on Kodiak Island. As part of your effort, Koniag has been on record supporting the Anton Larsen Bay Road Extension. As part of your Environmental Assessment process, Koniag again affirms its support for the extension of Anton Larsen Bay road to year-round ice-free ocean access. Koniag Shareholders in the communities of Ouzinkie and Port Lions are unable to utilize the boat ramp and road in Anton Larsen Bay in the winter due to the bay freezing. This increases their cost of goods procured in Kodiak or inhibits their ability to get to Kodiak for medical attention as they either have to fly to Kodiak or traverse by boat around Spruce Cape, which not only increases fuel consumption by boats, but also exposes them to the oftentimes dangerous seas around Spruce Cape. A road extension to ice-free waters would remedy this issue. In addition, Koniag also owns a granite quarry located at Shakmanof Cove, approximately 3 miles from the outlet of Anton Larsen Bay. The Anton Larsen Bay road extension could provide Koniag with a more economic means of access to and from our quarry.
Will Dumm	11/20/2018	Maintenance Environmental Emergency Service Remote Lifestyle	I am a resident of Anton Larsen Island, and I oppose this road extension. The existing road is minimally maintained despite extremely heavy use. The road often is left impassable for multiple days after winter storms, even when the bay is ice-free and the existing dock is accessible to travelers from Port Lions and Ouzinkie. Significant improvement to road system access via the Anton Larsen Bay road could be achieved by increased funding for road maintenance to the recently rebuilt Anton Larsen Bay dock. Necessary funding for road construction, a new dock, parking area, and breakwater would be far out of proportion to the project's benefits. The road extension would replace a popular ATV and hiking trail, threaten archaeological sites, and extensively develop an area which Kodiak residents currently enjoy largely untouched. Rural residents certainly have a right to accessible emergency services and medical, care, within practical limits. For rural Northwest Kodiak Island, these needs are already well met. Residents of Ouzinkie and Port lions seeking access to Kodiak have an exceptional set of options, including a short skiff ride directly to town, multiple daily scheduled commercial flights, and ferry service to Port Lions. Supporters of this road extension rightly claim it will make travel cheaper and more convenient, but only minimally so. Residents seeking urgent medical care already have access to town, except in the most extreme winter weather. For less urgent access, waiting for weather to allow boat travel to town is a minor inconvenience during the increasingly infrequent winters when bay ice makes the existing Anton Larsen Bay dock inaccessible. Realistically, this road extension would provide significant benefit only during the few days during years when Anton Larsen Bay is frozen, on which extreme weather makes flying, ferry travel, and boating directly to Kodiak impossible. Even on these days, weather must still allow Ouzinkie and Port Lions residents to travel by boat to Anton Larsen Bay. I do personally understand the benefits of this project. When the bay is frozen, my family walks the existing ATV trail from ice-free water to the road. When the entire road was impassable, we have skied from Anton Larsen to town to catch flights. We've had medical emergencies while the bay was frozen. However, there's misconception that rural residents are unjustly underserved, and entitled to improved access to services available on the road system. In reality, we all gladly accepted these inevitable shortcomings in service when we chose to live remotely. To demand drastic expansion of services is to deprive ourselves and our neighbors on Northwest Kodiak of the right to choose a rural way of life. We all have the cheaper, safer option to live on a reliably maintained part of the road system. This road extension would have significant impacts, and would not be worth its high cost. Please know that support is far from unanimous among those whose access to Kodiak would be improved by the project.
Brenda Schwantes	10.24.18	General support	I am a home owner on Anton Larsen Island and support extending the road to Crag Point.
Darron Scott	11.5.18	Year-round access to electric services	Kodiak Electric Association, Inc. (KEA) is the local electric cooperative serving the communities of Kodiak, Port Lions, USCG Base Kodiak, Chiniak, and Pasagshak. KEA provides basically 100% renewable

		Continued electric service to communities	energy to these communities by two means: the Pillar Mountain Wind Project and the Terror Lake Hydroelectric Project. Terror Lake Hydro is the main supply and the backbone of the electric grid. It is accessed by a road at the head of Kizhuyak Bay. Good access is critically important for the operations and maintenance of Terror Lake Hydro. One route to Kizhuyak Bay is through Anton Larsen. Improving this access as presented in this plan will be positive for KEA and its access to Terror Lake Hydro. This project would reduce our cost of operations, especially allowing for year-round access. This will provide significantly more flexibility to transportation logistics in the future; particularly in winter.
William Powers	11.8.18	Resolution No. FY2019-11 Borough Planning	The Kodiak Island Borough is the regional government of the Kodiak Archipelago in Alaska. The Kodiak Island Borough Assembly adopted Resolution No. FY2019-11 identifying local capital improvement project priorities on November 1, 2018. Included in this list of eight projects was the Anton Larsen Bay Road Extension project.
John Sturgeon	10.24.18	Alternate ice free access for use in supplying existing logging operation	Koncor Forest Products Co. has been logging on Afognak Island since the early 70's. We have a camp of approximately 70 workers in a camp near Danger Bay. We are very much in favor of the Anton Larsen Road Extension. It would provide an alternative ice-free port to supply our logging operation and for workers to and from Kodiak.
John Stella	10.25.18	Access Emergency Services Recreational Resources	I am opposed to the Anton Larsen Bay Road Extension. This is a cynical attempt by a small number of people to financially benefit at the expense of the taxpayer. It will take millions of dollars to do this project that has essentially no economic benefit. Some of the proponents claim that the road is necessary for access to emergency medical services. Right now those emergencies are flown into Kodiak by the Coast Guard. The approach to Larsen Bay by boat is not substantially improved as opposed to the West marine approach around Spruce Island. There is also an existing launch already at the end of the road, which was recently improved at the urging of the same people who now want the new road. The natives on Kodiak opposed the enlargement of the airport which would make it safer for all weather flights. They weren't worried about evacuations then and used the airport expansion to extort a land exchange with the state and FAA to the natives. This was reported by the local newspaper. The new road will also be built over an excellent existing hiking trail, which runs from the current road end to a secluded cove at Kizhuyak Bay. The trail is 4 miles each way and 400-500 ft. elevation gain each way. There are few other gradual trails like this on an island that is mostly mountains. There is a salmon stream with associated bears, deer, and foxes not as commonly seen elsewhere on the island's road system. I hiked this trail at least twenty times this summer and saw some of the above mentioned animals every time that I went. The project as proposed will significantly shorten this hiking trail. This is a very expensive project benefitting a very small number of people using taxpayer money. This project will also damage/replace a great hiking trail. It should be rejected as necessary. Tribal avarice knows no bounds. In summary this project will be, an unnecessary, little used, financial boondoggle, paid for by the taxpayer.
Leslie Stella	10.25.18	Access Existing Emergency Transport System Emergency Services Recreational Resources Secondary Development	Thank you for your very helpful open house at the Kodiak Library. I have lived in Kodiak for 7 years, and personally enjoy the hike/walk to Three Pillar Point. I've hiked that route at least 20 times, in spring, summer, and fall. With only a ~400' elevation gain/loss, it is a delight. With the geotrack, it doesn't get very muddy-so really all weather trail. It is lightly used, with more foot traffic using it at salmonberry picking season. People in Kodiak don't actually "recreationally" use ATV's, rather ride them to support either fishing or hunting, so **ATV use on this trail is pretty much limited to hunting season.** I don't see an extension really changing this, except, an extension of Anton Larsen Bay Road would require making a new staging area for ATV's and hiking parking. The existing Anton Larsen Bay Road is poorly maintained during the winter-last priority for any version of snow removal. As noted in your teams tour of the area, about a mile short of the current end point, there is a newly improved boat ramp as well as trailer storage and space for parking for "town cars" belonging to remote residents. Drive time to Kodiak City is roughly an hour without snow or ice. I would guess the extension would reduce "boat time" by about 10 minutes, and add about 10 minutes to the drive. So, whether using the current ramp/dock or the proposed ramp/dock, you are talking

			about arriving an hour away from the nearest services – the hospital is in Kodiak City, and if you were ill/injured it would be a pretty long, unpleasant ride into town. The water route from Ouzinkie to Kodiak is less than an hour. And, then, you are in town. Yes, there is a stretch of open water. However, to get from Ouzinkie to Anton Larsen Bay requires going through the Ouzinkie Narrows Passage, which is winding and shallow, so no picnic either. There is a better case for all weather access to Anton Larsen Bay from Port Lions (or Raspberry Is.), as that is a long haul in bad weather. Consulting a map, there is absolutely no reason to use Anton Larsen Bay as a route to Kodiak City from Afognak Island. Currently, Port Lions and Ouzinkie are served by daily air services (Island Air $64 each way) from Kodiak City. Island Air allows for people to pay for and bring additional cargo. Additionally, Ouzinkie is served by the AK Marine Highway twice weekly-with the option of 20' vehicle + driver of $104 each way. Fare for Port Lions is $119. The ferry services is oriented toward serving the needs of rural residents, usually staying in Kodiak City for about 8 hours to facilitate trips to the doctor, dentist, hair salon as well as grocery/pharmacy before making the return voyage. While the air service is weather dependent, the ferry service is almost never effected. In the overview paragraph, I noticed a reference to "remote logging camps." Presently, the only logging is on Afognak Island, and if you consult a map, you can see that they would not use the Crag Point launch, really for any reason. It is way out of the way. Coast Guard provides medevac service to Kodiak City, which drops the injured at the CG Base for 15 minute transfer to the hospital. For emergency medical service from either Port Lions or Ouzinkie, how would that work? Certainly, a patient would be better off being transported directly to Kodiak City, where the hospital is, rather than to be taken by boat to an unattended boat ramp? Then private car for an hour? For "supporting economic development through efficient access", we need to realize that "if we build it they will come" doesn't always work. There are a number of remote lodges on Raspberry Island, Afognak Island and one in Port Lions. All are open for fishing and hunting season only, as there isn't really any demand for winter tourism here. The lodge in Port Lions uses the existing dock at Anton Larsen Bay, but the others all use facilities in town, the more far flung using float planes but the close using a seamless, pick them up at the airport, drive to the harbor at Near Island, load on a launch, which will also ferry over groceries/supplies. It just came over with departing guests and garbage. I don't see this extension changing this paradigm. If we are talking new development, it should be noted that all the land in that area of the island is owned by Ouzinkie, so we are talking about using Federal dollars to aid specifically one group. For "improving access to recreation and subsistence activities", the reference must be to making an overland route to a launch to take advantage of netting the red salmon run in the Port Lions area. This is done during June, so it is not dependent on an extension which provides an ice free boat ramp/bay. For berry picking, there are tons of locations available. On the one hand, I would like to see the road system on Island grow. On the other hand, I just don't see this project as being good stewardship of Federal dollars. Or State dollars. Or Borough dollars.
Susan and Don Dumm	11.25.18	Access Road Maintenance Economic Development Emergency Services Recreational Resources Alternative Options	Our comments are for the Anton Larsen Bay Road Extension Project and the Environmental Assessment process. We are residents of Anton Larsen Island and find this road extension to be unnecessary. Because DOT does not currently maintain the road adequately in any season and likely will not in the future, the project purposes and needs are flawed. Most subsistence and recreation activities occur in the ice-free spring/summer/fall so access to ice free water is unnecessary most of the year. We would like to hear of the various ways this project will bring economic development, who will benefit, and for how long? What additional infrastructure needs will there be: breakwater, dock, dredging, gravel pits, lodge? What Kodiak Island Borough codes must be adhered to and permits obtained? These should be identified and prices for the public, especially adjacent property owners, before the road expenditure is made.

			We understand that Ouzinkie Native Corporation as a private land owner has the right to develop as they wish within existing codes, but not at public expense and not without review by the Kodiak Island Borough Planning and Zoning process. In order to assess and provide comments on the impacts of this project, we need to know the full extent of development before construct begins. In the past, Anton Larsen residents have requested a comprehensive plan for the area and this is why that process is important. Right-of-ways, easement, and maintenance agreements need to be finalized before a rock is turned and dollars are dedicated, if the project is publicly funded. Public dollars should not be given for a private road. These agreements should include easement to ice free water for Anton Larsen Island residents. The fish surveys, invasive species inventory, and wetland delineation for this project are at least two years old and now outdated. In the last two years, we have seen dramatic climate change impacts. Extending road access expands the reach of invasive species like rats, which are a major concern for nesting birds. The small island around Anton Larsen and in Kizhuyak are major breeding areas for many seabirds. Not considered in the original DOT scoping phase are two better options closer to Kodiak: an extension of the White Sands Road to a point across from Ouzinkie and the Fort Abercrombie boat launch site. Both options would be more protected from the northeast winds, provide access to ice free water, and are closer to emergency and clear winter road infrastructure. The option that ends across from Ouzinkie would allow Kodiak Electric Association to extend electricity to Ouzinkie providing economic benefits to that community.
Kyle Crow (kylecrow@yahoo.com) posted to the online map		Access Maintenance Need	This road extension is necessary to allow the residents of all the rural cities and villages located on the north side of Kodiak Island (Ouzinkie, Port Lions, and Larsen Bay) with year round access to Kodiak's road system and the services that are only provided and available on the road system, including: emergency and scheduled medical care providers, educational opportunities, library, arts, and entertainment opportunities, access to government representatives and meetings, family and friends, expanded social opportunities, grocery and hardware stores and a lumber yard, contractors and tradesmen, and general commerce. Currently access is only available during summer months when Anton Larsen Bay is ice free and the road is not impassable due to ice and snow. The road is not currently maintained during winter months because there isn't much point in it with the Bay being frozen over. However, with a road extension to ice free water there would be a need to maintain the road as people would be regularly suing it.
Daniel Foster (Daniel.mckenna.foster@gmail.com) posted to the online map		Use/Capacity Cost Purpose & Need	I bike and hike out here – more road miles is good for me. But I have a few questions about this: 1. How many people are expected to use this road on a daily, weekly, or monthly bases? 2. How much might this road cost to build, and how much might it cost in annual maintenance (and who will be paying to maintain it)? 3. How many people are expected to directly benefit from this road? Are there any other projects in Kodiak which might benefit a greater number of Borough citizens? 4. What data shows a demonstrable need for this road? 5. What if in the future winters Anton Larsen Bay doesn't ice over anymore?
Jeff Wadle (kodjaws@gmail.com) posted to the online map		Purpose and Need	I support this road extension for many reasons that were brought up in previous comments. I personally use this road almost every weekend if weather permits and if Anton Larsen is ice free during the summer and winter months. This is an important and less expensive means for people from the village to get into town. It is important to remember this is an environmental assessment only and not a scope for funding.
Gina (ginaj@ptialaska.net) posted to the online map		Access	I have lived in Kodiak for almost 46 years. Am a life long Alaskan and understand being isolated and living in a remote area. I feel this road extension is long over due. Despite Port Lions and Ouzinkie having ferry service, it's all weather permitting. There have been numerous times the ferry has had to bypass the villages. The weather may not be safe enough to fly. Or to travel to Kodiak by water. This is another option for safer and quicker access to Kodiak. Not only for people from the village, but Island wide, as well as Afognak, Raspberry and Shuyak Islands. This fall a local airways had to fly in and out of Anton Larsen Bay due to the City of Kodiak being fogged in. They could still

			safely conduct business. And had a fuel truck staged in Anton Larsen Bay. As for safely traveling on this road in winter time. If need be a snow machine could be used or ATV if the road is not passable. If the weather is such, maybe no one should be traveling on it. If the road is extended, it will be used. Maybe the Anton Larsen Bay road would be utilized more so since the extension would allow more traffic if the bay is iced up. Ice in the bay can stay literally for months. Days get short and this would save valuable time to travel to and from destinations much more safely. Some people don't like change and will resist. But overall this would be a positive changes. It is being planned out in a respectful, well thought out way.
Stosh Anderson (dictated to Heather Campfield at Kodiak public meeting)		General support	The proposed road extension to ice free areas would benefit rural communities and residence of Kodiak and support the fishing industry. Design should provide space for a dock, a boom truck, and for freighters.
Andy & Petrina Peterson		General support	I am requesting a driveway be installed along with the road project to both lots that will be adjacent to the road right-of-way. Lots 1 & 2.

U.S. Department of Transportation
Federal Highway Administration

ANTON LARSEN BAY ROAD EXTENSION

Kodiak, Alaska

Please share your comments. Comments can also be e-mailed to **melissa.j.hogan@dot.gov**. For more project information, visit: **www.wfl.fhwa.dot.gov/projects/ak/anton-larsen/**

This is a very expensive project benefittin a very small # of people using taxpayer money. This project will also damage / replace a great hiking trail. It should be rejected. as unessesary. Tribal avarice knows no bounds.

Name: John Stella

E-mail: captains200@yahoo.com

Address: P.O. Box 8895

City: Kodiak State: AK Zip: 99615

Please add me to the project e-mail list. ☒

U.S. Department of Transportation
Federal Highway Administration

ANTON LARSEN BAY ROAD EXTENSION

Kodiak, Alaska

Please share your comments. Comments can also be e-mailed to **melissa.j.hogan@dot.gov**. For more project information, visit: **www.wfl.fhwa.dot.gov/projects/ak/anton-larsen/**

I am requesting a driveway be installed along with the road project to both lots that will be adjacent to the road right of way.

Lots 1 & 2

Andy & Petrina Peterson

Name: _____

E-mail: _____

Address: _____

City: _____ State: _____ Zip: _____

Please add me to the project e-mail list. ☐

Heather A. Campfield

Subject: FW: Anton Larsen Bay Road Extension Project--Kodiak City

From: Leslie Stella [mailto:rivershore1507@yahoo.com]
Sent: Thursday, October 25, 2018 7:46 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Bay Road Extension Project--Kodiak City

Dear Ms. Hogan;

Thank you for your very helpful open house at the Kodiak Library.

I have lived in Kodiak City for 7 years, and personally enjoy the hike/walk to Three Pillar Point. I've hiked that route at least 20 times, in spring, summer and fall. With only a ~400' elevation gain/loss, it is a delight. With the geotrack, it doesn't get very muddy-so really all weather trail. It is lightly used, with more foot traffic using it at salmonberry picking season. People in Kodiak don't actually "recreationally" use ATV's, rather ride them to support either fishing or hunting, so ATV use on this trail is pretty much limited to hunting season. I son't see an extension really changing this, except, an extension of Anton Larson Bay Road would require making a new staging area for ATV's and hiking parking.

The existing Anton Larson Bay Road is poorly maintained during the winter-last priority for any version of snow removal. As noted in your teams tour of the area, about a mile short of the current end point, there is a newly improved boat ramp as well as trailer storage and space for parking for "town cars" belonging to remote residents. Drive time to Kodiak City is roughly an hour, without snow or ice. I would guess the extension would reduce "boat time" by about 10 minutes, and add about 10 minutes to the drive. So, whether using the current ramp/dock or the proposed ramp/dock, you are talking about arriving an hour away from the nearest services-the hospital is in Kodiak City, and if you were ill/injured it would be a pretty long, unpleasant ride in to town.

The water route from Ouzinke to Kodiak City is less than an hour. And, then, you are in town. Yes, there is a stretch of open water. However, to get form Ouzinke to Anton Larson bay requires going through the Ouzinke Narrows Passage, which is winding and shallow, so no picnic either. There is a better case for all weather access to Anton Larson Bay from Port Lions (Or Raspberry Is), as that is a long haul in bad weather. Consulting a map, there is absolutely no reason to use Anton Larson Bay as a route to Kodiak City from Afognak Is.

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In the overview paragraph, I noticed a reference to "remote logging camps." Presently, the only logging is on Afognak Island, and if you consult a map, you can see that they would not use the Crag Point launch, really for any reason. It is way out of the way. Coast Guard provides medevac service to Kodiak City, which drops the injured at the CG base for 15 minute transfer to the hospital.

For emergency medical service from either Port Lions or Ouzinke, how would that work? Certainly, a patient would be better off being transported directly to Kodiak City, where the hospital is, rather than to be taken by boat to an unattended boat ramp? Then private car for an hour?

For "supporting economic development through efficient access", we need to realize that "if we build it they will come" doesn't always work. There are a number of remote lodges on Raspberry Is, Afognak Is and one in Port Lions. All are open for fishing & hunting season only, as there isn't really any demand for winter tourism here. The lodge in Port Lions uses the existing dock at Anton Larson Bay, but the others all use facilities in town, the more far flung using float planes but the closer using a seamless, pick them up at the airport, drive to the harbor at Near Island, load on a launch, which will also ferry over groceries/supplies. It just came over with departing guests and garbage. I don't see this extension changing this paradigm.

If we are talking new development, it should be noted that all the land in that area of the island is owned by Ouzinke, so we are talking about using Federal dollars to aid specifically one group.

For "improving access to recreation and subsistence activities", the reference must be to making an overland route to a launch to take advantage of netting the red salmon run in the Port Lions area. This is done during June, so it is not dependent on an extension which provides an ice free boat ramp/bay. For berry picking, there are tons of locations available.

On the one hand, I would like to see the road system on Island grow. On the other hand, I just don't see this project as being good stewardship of Federal dollars. Or State dollars. Or Borough dollars.

Thank you for your time and your consideration,
Leslie Stella
PO BOX 8895
Kodiak, AK 99615

Heather A. Campfield

Subject: FW: Anton Larsen Bay road extension

From: john stella [mailto:captains200@yahoo.com]
Sent: Thursday, October 25, 2018 4:12 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Bay road extension

Dear Ms. Hogan,

I am opposed to the Anton Larsen Road extension. This is a cynical attempt by a small number of people to financially benefit at the expense of the taxpayer. It will take millions of dollars to do this project that has essentially no economic benefit.

Some of the proponents claim that the road is necessary for access to emergency medical services. Right now those emergencies are flown into Kodiak by the Coast Guard. The approach to Larsen Bay by boat is not substantially improved as opposed to the West marine approach around Spruce Island. There is also an existing launch already at end of the road, which was recently improved at the urging of the same people who now want the new road.

The natives on Kodiak opposed the enlargement of the airport which would make it safer for all weather flights. They weren't worried about evacuations then and used the airport expansion to extort a land exchange with the state and FAA to the natives. This was reported by the local newspaper.

The new road will also be built over an excellent existing hiking trail, which runs from the current road end to a secluded cove at Kizhuyak Bay. The trail is 4 miles each way and 400-500 ft. elevation gain each way. There are few other gradual trails like this one on an island that is mostly mountains. There is a salmon stream with associated bears , deer and foxes not as commonly seen elsewhere on the island's road system. I hiked this trail at least twenty times this summer and saw some the above mentioned animals every time that I went. The project as proposed will significantly shorten this hiking trail.

In summary this project will be, an unnecessary, little used, financial boondoggle, paid for by the taxpayer.

Thank you for your consideration of this statement,

John Stella MD
PO Box 8895
Kodiak, AK 99615

captains200@yahoo.com

505-328-3905

KODIAK ELECTRIC ASSOCIATION

KODIAK ELECTRIC ASSOCIATION, INC.

P.O. BOX 787, KODIAK, AK 99615-0787
(907) 486-7700

November 5, 2018

Melissa J. Hogan
FHWA Western Federal Lands
Highway Division
610 East Fifth Street
Vancouver, WA 98661-3801

Dear Ms. Hogan,

Kodiak Electric Association, Inc. (KEA) is the local electric cooperative serving the communities of Kodiak, Port Lions, USCG Base Kodiak, Chiniak, and Pasagshak. KEA provides basically 100% renewable energy to these communities by two means: the Pillar Mountain Wind Project and the Terror Lake Hydroelectric Project. Terror Lake Hydro is the main supply and the backbone of the electric grid. It is accessed by a road at the head of the Kizhuyak Bay.

Good access is critically important for the operations and maintenance of Terror Lake Hydro. One route to Kizhuyak Bay is through Anton Larsen. Improving this access as presented in this plan will be positive for KEA and its access to Terror Lake Hydro. This project would reduce our cost of operations, especially allowing for year-round access. This will provide significantly more flexibility to transportation logistics in the future; particularly in winter.

Thank you for the opportunity to comment on this project. Please let me know if you have any questions. You can contact me at dscott@kodiak.coop or at 907-486-7739.

Sincerely,

Darron Scott
President/CEO
Kodiak Electric Association, Inc.

Heather A. Campfield

Subject: FW: Anton Larsen Road Extension

From: Will Dumm [mailto:wdumm88@gmail.com]
Sent: Tuesday, November 20, 2018 2:28 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Re: Anton Larsen Road Extension

Hi Melissa,

Thank you for your clear explanation of the process. It took me awhile to put together my comments. Here is a slightly longer version of the comments which I submitted to the map comment page. I'd appreciate confirmation of receipt when you have a chance.

I am a resident of Anton Larsen Island, and I oppose this road extension. The existing road is minimally maintained despite extremely heavy use. The road often is left impassable for multiple days after winter storms, even when the bay is ice-free and the existing dock is accessible to travelers from Port Lions and Ouzinkie. Significant improvement to road system access via the Anton Larsen Bay road could be achieved by increased funding for road maintenance to the recently rebuilt Anton Larsen Bay dock. Necessary funding for road construction, a new dock, parking area, and breakwater would be far out of proportion to the project's benefits. The road extension would replace a popular ATV and hiking trail, threaten archaeological sites, and extensively develop an area which Kodiak residents currently enjoy largely untouched.

Rural residents certainly have a right to accessible emergency services and medical care, within practical limits. For rural Northwest Kodiak Island, these needs are already well met. Residents of Ouzinkie and Port Lions seeking access to Kodiak have an exceptional set of options, including a short skiff ride directly to town, multiple daily scheduled commercial flights, and ferry service to Port Lions. Supporters of this road extension rightly claim it will make travel cheaper and more convenient, but only minimally so. Residents seeking urgent medical care already have access to town, except in the most extreme winter weather. For less urgent access, waiting for weather to allow boat travel to town is a minor inconvenience during the increasingly infrequent winters when bay ice makes the existing Anton Larsen Bay dock inaccessible. Realistically, this road extension would provide significant benefit only during the few days during years when Anton Larsen Bay is frozen, on which extreme weather makes flying, ferry travel, and boating directly to Kodiak impossible. Even on these days, weather must still allow Ouzinkie and Port Lions residents to travel by boat to Anton Larsen Bay.

I do personally understand the benefits of this project. When the bay is frozen, my family walks the existing ATV trail from ice-free water to the road. When the entire road was impassable, we have skied from Anton Larsen to town to catch flights. We've had medical emergencies while the bay was frozen. However, there’s a misconception that rural residents are unjustly underserved, and entitled to improved access to services available on the road system. In reality, we all gladly accepted these inevitable shortcomings in service when we chose to live remotely. To demand drastic expansion of services is to deprive ourselves and our neighbors on Northwest Kodiak of the right to choose a rural way of life. We all have the cheaper, safer option to live on a reliably maintained part of the road system.

This road extension would have significant impacts, and would not be worth its high cost. Please know that support is far from unanimous among those whose access to Kodiak would be improved by the project.

Thanks for taking my comments, and happy Thanksgiving!

Will

Heather A. Campfield

Subject: FW: Anton Larsen Road Extension Comments

From: Susan and Don Payne/Dumm [mailto:sourdoughsolar@gmail.com]
Sent: Sunday, November 25, 2018 8:55 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Road Extension Comments

Dear Ms. Hogan,
Please enter our comments on the Anton Larsen Road Extension Project and send us an email receipt. Thank you!

Melissa Hogan, FHWA Environmental Specialist
Email: Melissa.j.hogan@dot.gov
Phone: (360) 619-7735

November 19, 2018

Dear Ms. Hogan,

Our comments are for the Anton Larsen Road Extension Project and the Environmental Assessment process. We are residents of Anton Larsen Island and find this road extension to be unnecessary.

Because DOT does not currently maintain the road adequately in any season and likely will not in the future, the project purposes and needs are flawed. Most subsistence and recreation activities occur in the ice-free spring/summer/fall so access to ice free water is unnecessary most of the year. We would like to hear of the various ways this project will bring economic development, who will benefit, and for how long? What additional infrastructure needs will there be: breakwater, dock, dredging, gravel pits, lodge? What KiB codes must be adhered to and permits obtained? These should be identified and priced for the public, especially adjacent property owners, before the road expenditure is made.

We understand that Ouzinkie Native Corporation as a private landowner has the right to develop as they wish within existing codes, but **not at public expense** and not without review by the KIB Planning and Zoning process. In order to assess and provide comments on the impacts of this project, we need to know the full extent of the development before construction begins. In the past, Anton Larsen residents have requested a comprehensive plan for the area and this is why that process is important.

Right-of-ways, easement, and maintenance agreements need to be finalized before a rock is turned and dollars dedicated, if the project is publicly funded. Public dollars should not be given for a private road. These agreements should include easement to ice free water for Anton Larsen Island residents.

The fish surveys, invasive species inventory, and wetland delineation for this project are at least two years old and now outdated. In the last two years, we have seen dramatic climate change impacts.

Extending road access expands the reach of invasive species like rats, which are a major concern for nesting birds. The small islands around Anton Larsen and in Kizhuyak are major breeding areas for many seabirds.

Not considered in the original DOT scoping phase are two better options closer to Kodiak: an extension of the White Sands Road to a point across from Ouzinkie and the Fort Abercrombie boat launch site. Both options would be more protected from the northeast winds, provide access to ice free water, and are closer to emergency and clear winter road infrastructure. The option that ends across from Ouzinkie would allow KEA to extend electricity to Ouzinkie providing economic benefits to that community.

Thank you for considering our comments.

Sincerely,

Susan Payne, PO Box 1903, Kodiak, AK 99615
Don Dumm, PO Box 1723, Kodiak, AK 99615

Kodiak Island Borough
OFFICE of the MANAGER

710 Mill Bay Road
Kodiak, Alaska 99615
Phone (907) 486-9302 Fax (907) 486-9390
E-mail: mpowers@kodiakak.us

November 8, 2018

FHWA
Western Lands Highway Division
Attn: Melissa Hogan
610 East 5th Street
Vancouver, WA 98661

RE: Anton Larsen Bay Road Extension Project

Ms. Hogan,

The Kodiak Island Borough is the regional government of the Kodiak Archipelago in Alaska. The Kodiak Island Borough Assembly adopted Resolution No. FY2019-11 identifying local capital improvement project priorities on November 1, 2018. Included in this list of eight projects was the Anton Larsen Bay Road Extension project.

Please feel free to contact me should you wish to receive a copy of the resolution for your records.

Respectfully,

Michael Powers
Manager

MP/mkc

cc: Duncan Fields, Shoreside Consulting

Inside today!
ON PAGE 9

The 2018 HALLOWEEN SAFETY GAME

FEAR AND RISK
Word & Deed, 6

KODIAK DAILY MIRROR

VOL. 80 NO. 201 | FRIDAY, OCTOBER 26, 2018 | 50¢

LOCAL NEWS FOR ALASKA'S EMERALD ISLE

KWRCC hosts prayer vigil, dog walk to raise awareness

By ALISTAIR GARDINER
al@kodiakdailymirror.com

The Kodiak Women's Resource and Crisis Center is hosting two annual events this weekend: a prayer vigil and dinner on Friday evening and a communal dog walk to raise awareness of the link between domestic violence and animal abuse Saturday morning.

The center's prayer vigil and dinner will take place at St. James The Fisherman Episcopal Church from 5:30-7 p.m tonight. The yearly event is an opportunity for the community to remember those who have lost their lives through domestic violence, including those who died after stepping in to protect a victim of abuse.

"It's coming out in solidarity and saying this is important for us to acknowledge and we need to do something about it," said Beth Davis, an advocate for victims of domestic violence, who serves as outreach coordinator for KWRCC. "After the prayer service, everyone is welcome to stay and join us for dinner."

Following the prayer vigil and dinner, KWRCC will hold its annual membership meeting.

"The community is welcome to stay for that," Davis said, adding that various local agencies that assist victims of domestic violence will be in attendance. "That's an open public space for people to ask questions."

On Saturday, KWRCC and the Humane Society of Kodiak are collaborating for the second annual Paws for Peace Dog Walk. Davis said the idea behind the event is to raise awareness over the links between domestic abuse and animal cruelty.

"Basically, when you have someone in a home abusing humans, they think they're of little value and they treat the animals the same," Davis said. "Some people have never even thought about it, but when you talk about it, it makes sense."

Various studies conducted over the past few decades show a correlation between domestic violence and the abuse of animals. A review of almost

■ See **KWRCC,** Page 3

GET IN TOUCH

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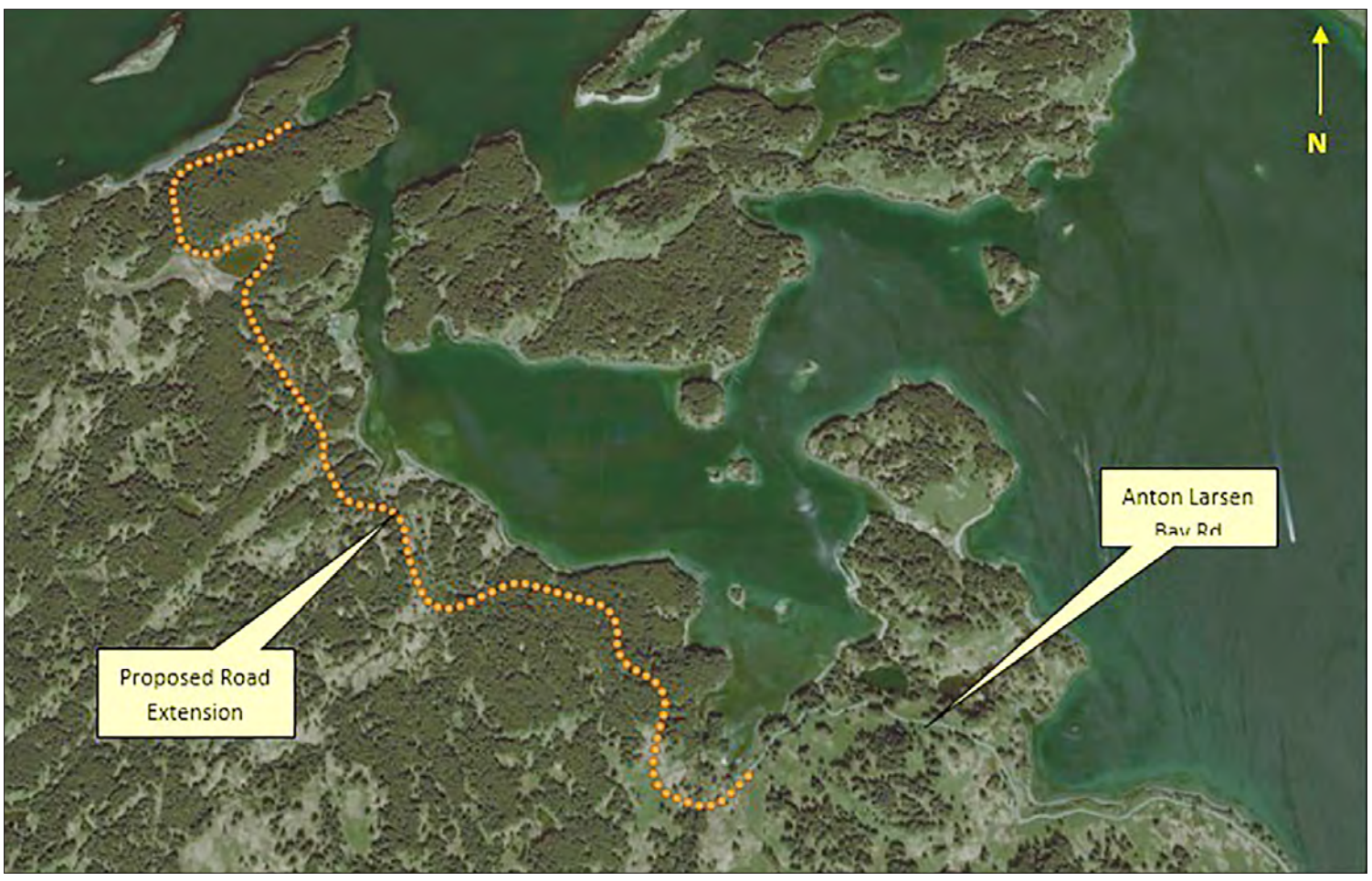
Circulation	ext. 612
Editorial	ext. 622
Online	www.kodiakdailymirror.com

Proposed road extension



Courtesy of Western Federal Lands Highway Division

A map showing a proposed two-mile extension to Anton Larsen Bay Road, which would give the communities of Port Lions and Ouzinkie access to the road system when the bay ices over during winter months.

Anton Larsen Bay Road extension project proceeds into environmental assessment phase

By ALISTAIR GARDINER
al@kodiakdailymirror.com

A project that has been discussed for a couple of decades is in the process of taking a step forward. A two-mile extension to Anton Larsen Bay Road has been proposed by the Western Federal Lands Highway Division of the Federal Highway Administration, in partnership with the Native Village of Ouzinkie.

The idea is to provide access to the road system to the villages of Port Lions and Ouzinkie, as well as remote logging camps during the winter months when sea ice prevents vessels from entering Anton Larsen Bay. The road extension will provide better access to town so that those who live more remotely can fetch supplies or deal with emergencies during the winter months.

The project would extend the existing 11.7 mile Anton Larsen Bay Road from its current termination, near the Sharatin Mountain Trailhead, to a planned parking area and boat launch near Crag Point. According to the project website, roughly half of the proposed new road closely follows an existing all-terrain vehicle trail, with the remainder passing through undeveloped wilderness. The land on which the proposed road would be built is owned by the Ouzinkie Native Corporation.

An informational forum on the project was held Wednesday at Kodiak Public Library. Among those in attendance was Joseph Delgado, the Native Village of Ouzinkie's transportation administrator.

"As long as I've been the transportation administrator, which is going on nine years now, it's been a dream to get a safe way to get people out of harm's way, from Ouzinkie, Port Lions or even a passing fishing boat," he said. "There are many times in winter now where we can't get out by plane or by boat around Spruce Cape because of the weather."

Delgado said one of the key issues is transporting people in need of urgent medical care into town. On a nearby map that showed the parameters of the project, he pointed to some beaches on the northern coast of the Anton Larsen Bay area.

"In the past, people have gotten off at these beaches here and walked to the end of the road," he said, "which isn't any good if you've got broken bones, because it's a long way."

"Right now we want to make sure everybody's on board with it," Delgado added.

So far, the only stage of the project that has been funded is the environmental assessment, which is scheduled to be completed by summer 2019. It is being paid for with a $450,000 grant from the State of Alaska Department of Commerce, Community and Economic Development.

"The strategy, on the part of Ouzinkie, was once they've got a completed environmental document, that may position them better for other federal funding," said Reuben Johnson, a project manager with the Western Federal Lands Division of the U.S. Department of Transportation Federal Highway Administration. "That's why we're called in to help out with this environmental assessment."

"Additionally, we're having this public scoping effort," he said. "That's what we're doing tonight … I've heard things tonight that I was not aware of."

Johnson explained that public scoping is a significant part of the assessment, because local knowledge can be incredibly useful. Even from listening to locals that evening, he said that the team now has doubts about the initial spot chosen for a boat launch.

"It's shallow, there's commonly a northeasterly wind, that would maybe cause the need for a breakwater to allow boats to easily access that area," he said. "It's just some concerns that were brought up today that we were not aware of."

■ See **EXTENSION,** Page 2

Hunt is on for brown bears

KDM Staff

The brown bear hunting season opened in Unit 8, Kodiak-Shelikof, on Thursday. It will remain open until Nov. 30.

According to the Alaska Department of Fish and Game, "To hunt Kodiak brown bears you need a valid Alaska hunting license, a Big Game Tag Record, a brown bear locking tag, and a registration and/or drawing permit for the area you plan to hunt. If you are not an Alaska resident, you also need proof that you will be guided by a registered guide, or a relative within the second degree of kindred. We strongly urge non-residents to make arrangements with a qualified big game guide prior to applying for any Kodiak bear hunts."

Isaac Stone Simonelli / Kodiak Daily Mirror

One of three brown bear cubs makes its way through the brambles along the edge of Anton Larsen Bay Sunday.

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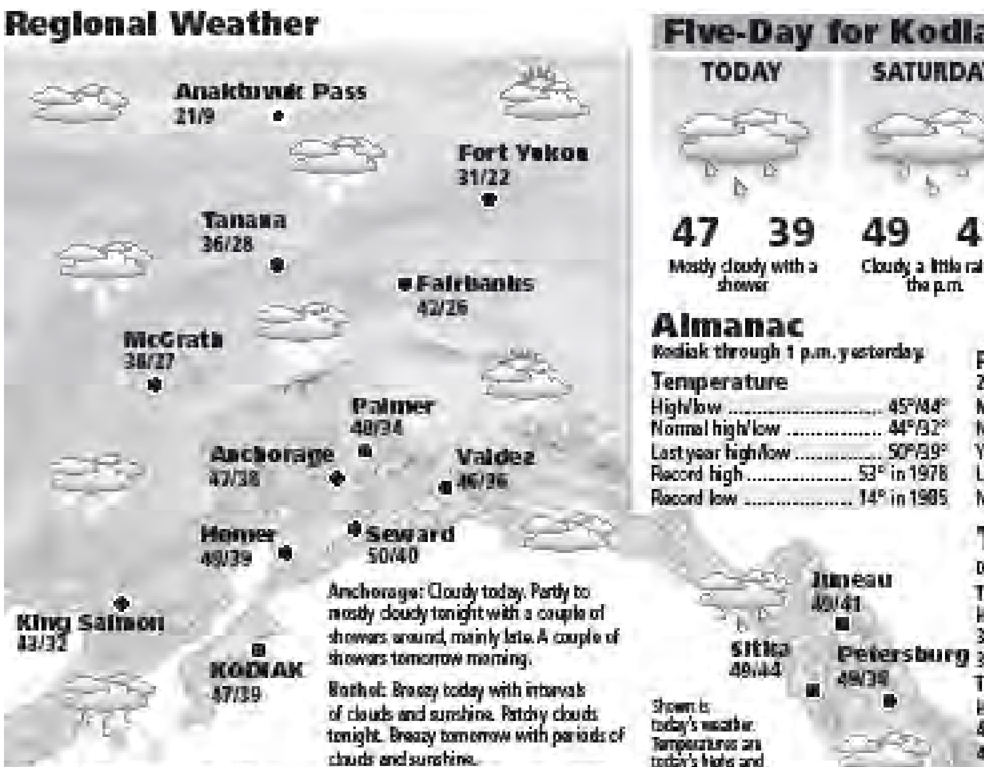

Anchorage: Cloudy today. Partly to mostly cloudy tonight with a couple of showers around, mainly late. A couple of showers tomorrow morning.

Bethel: Breezy today with intervals of clouds and sunshine. Patchy clouds tonight. Breezy tomorrow with periods of clouds and sunshine.

Fairbanks: Mostly cloudy today. Patchy clouds tonight. Mostly cloudy tomorrow. Sunday: morning flurries, then snow, accumulating 1-2 inches.

Homer: A little rain during the morning; otherwise, mostly cloudy today. Cloudy tonight with a shower in the area. A shower in spots tomorrow.

Kodiak: Mostly cloudy today with a shower. A shower in spots in the evening; otherwise, cloudy tonight. Occasional rain tomorrow afternoon.

Juneau: Cloudy today with occasional rain. Overcast tonight with showers. A little rain tomorrow morning; otherwise, mostly cloudy.

Shown is today's weather. Temperatures are today's highs and tonight's lows.

Five-Day for Kodiak

TODAY	SATURDAY	SUNDAY	MONDAY	TUESDAY
47 39	49 41	44 33	39 32	43 33
Mostly cloudy with a shower	Cloudy, a little rain in the p.m.	Partly sunny and breezy	Partly sunny	Mostly sunny

Almanac

Kodiak through 1 p.m. yesterday

Temperature

High/low	45°/44°
Normal high/low	44°/32°
Last year high/low	50°/39°
Record high	53° in 1978
Record low	14° in 1985

Precipitation

24 hours ending 1 p.m.	0.96"
Month to date	5.34"
Normal month to date	6.75"
Year to date	53.14"
Last year to date	51.81"
Normal year to date	64.89"

Tides

Data is for Womens Bay

	HIGH	FEET	LOW	FEET
TODAY	3:41 a.m.	8.3	9:19 a.m.	1.5
	3:27 p.m.	10.0	10:00 p.m.	-0.9
TOMORROW	4:23 a.m.	8.0	9:55 a.m.	1.9
	4:03 p.m.	10.0	10:42 p.m.	-0.8

Forecasts and graphics provided by AccuWeather, Inc. ©2018

Sun and Moon

Sunrise today	9:06 a.m.
Sunset tonight	6:37 p.m.
Moonrise today	8:07 p.m.
Moonset today	11:29 a.m.
Daylight loss	4 min, 47 sec

Moon Phases

Last	New	First	Full
Oct 31	Nov 7	Nov 15	Nov 22

Regional Cities

CITY	Today HI/LO/W	Sat. HI/LO/W
Anchorage	47/38/c	47/37/sh
Bethel	[illegible]	[illegible]
Bettles	34/25/sn	32/24/sf
Cold Bay	[illegible]	[illegible]
Cordova	50/39/sh	49/39/sh
Dillingham	[illegible]	[illegible]
Dutch Harbor	45/40/r	43/38/pc
Fairbanks	[illegible]	[illegible]
Fort Yukon	31/22/c	29/19/c
Gulkana	[illegible]	[illegible]
Homer	49/39/r	49/38/c
Juneau	[illegible]	[illegible]
Ketchikan	50/44/r	52/44/sh
King Salmon	[illegible]	[illegible]
Kotzebue	33/26/c	30/21/pc
McGrath	[illegible]	[illegible]
Nome	37/27/pc	33/20/pc
Northway	[illegible]	[illegible]
Palmer	48/34/c	47/33/c
Prudhoe Bay	[illegible]	[illegible]
Seward	48/40/r	46/39/sh
Skagway	[illegible]	[illegible]
Tok	38/23/pc	37/21/c
Unalakleet	[illegible]	[illegible]
Valdez	46/36/c	44/35/c
Wrangell	[illegible]	[illegible]
Yakutat	48/42/sh	50/41/r

National Cities

CITY	Today HI/LO/W	Sat. HI/LO/W
Atlanta	59/51/r	60/47/pc
Baltimore	[illegible]	[illegible]
Billings	67/48/pc	61/34/sh
Boise	[illegible]	[illegible]
Boston	50/41/pc	51/47/r
Charlotte	[illegible]	[illegible]
Chicago	53/44/c	54/42/c
Cleveland	[illegible]	[illegible]
Dallas	71/55/s	80/59/s
Denver	[illegible]	[illegible]
Des Moines	55/40/c	65/46/pc
Detroit	[illegible]	[illegible]
El Paso	75/52/s	77/52/s
Indianapolis	[illegible]	[illegible]
Kansas City	58/42/pc	68/49/s
Las Vegas	[illegible]	[illegible]
Little Rock	61/45/pc	71/52/s
Los Angeles	[illegible]	[illegible]
Louisville	55/45/r	55/45/c
Miami	[illegible]	[illegible]
Milwaukee	52/44/c	52/43/c
Minneapolis	[illegible]	[illegible]
Nashville	58/48/r	57/44/c
New Orleans	[illegible]	[illegible]
New York City	51/47/pc	54/49/r
Oklahoma City	[illegible]	[illegible]
Omaha	62/42/pc	69/47/s
Philadelphia	[illegible]	[illegible]
Phoenix	89/62/s	91/63/s
Pittsburgh	[illegible]	[illegible]
Portland, OR	64/49/sh	64/53/c
St. Louis	[illegible]	[illegible]
Salt Lake City	67/48/s	73/50/pc
San Francisco	[illegible]	[illegible]
Seattle	61/45/sh	58/50/c
Tucson	[illegible]	[illegible]
Washington, DC	53/48/r	58/48/r

Weather (W): s-sunny, pc-partly cloudy, c-cloudy, sh-showers, t-thunderstorms, r-rain, sf-snow flurries, sn-snow, i-ice

Rockin' Out

Chris Kavanaugh

Chris Kavanaugh hosts "Rockin' Out with Chris" at 12:30 p.m. Mondays on Public Radio KMXT

Calling all misfits

The Misfits are an iconic American punk rock band often recognized for their musical influences with horror films. The Misfits were born in a small town called Lodi, New Jersey 40 years ago. The name of their band came from the title of Marilyn Monroe's final movie. The Misfits wound up making history and creating a legacy that has withstood the test of time. For the Misfits, every day is Halloween!

Halloween is one of my favorite times of the year. I hope you enjoy the show.

Happy Halloween!

Here is Chris in his costume last year handing out candy to the neighborhood kiddos! He plans on being "Scream" again this year.

State's largest airport sees new high in summer passengers

By Associated Press

ANCHORAGE — Summer passenger traffic set an all-time high in 2018 at Alaska's largest airport.

Officials at Ted Stevens Anchorage International Airport say 1.53 million passengers embarked on flights from May through September.

That was an increase of 68,724 passengers, a nearly 4.5 percent jump over 2017 summer traffic of 1.46 million embarking passengers, airport manager Jim Szczesniak said Thursday. It also exceeded the previous recorded high in summer 2016.

Most of the growth at the state-owned airport was spurred by tourism. Alaska is a top-rated cruise destination and many visitors combine one-way voyages along Alaska's Panhandle and the Gulf of Alaska with bus or train trips to Denali National Park, Szczesniak said. Those trips often start or end with a flight into or out of Anchorage.

"Our market is linked with the cruise industry," Szczesniak said.

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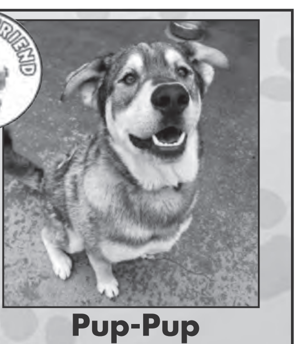
ADOPT-a-FRIEND

Timothy



Pup-Pup

Timothy is an affectionate 6-yr. old DMH male who would be a great addition to any family. While not overly interested in toys, he loves rolling around in piles of catnip and is quite the attention seeker. He's very tidy cat, does great with other kitties and some calm dogs. Timothy would be a great indoor or outdoor cat, as he can be somewhat of a door-dasher.

In the market for a super friendly & giant lug of adorable fluff? Pup-pup is a 1-yr. old husky/lab mix that's full of energy and would make a great running buddy. He knows how to sit, but he is still a puppy at heart and needs someone who can help him in the training and manners department. He can be very jumpy and sometimes mouthy. Pup-Pup seems to do well with other dogs but not so with cats and he loves kids but he needs supervision due to his enthusiasm and size. We do not recommend him for novice pet owner.

Animal Shelter managed by the **Humane Society of Kodiak**
Tues.-Fri.: Noon-6 p.m. | Sat.: 12-5 p.m. Sun.-Mon.: Closed
For more information please call **486-8077**
These wonderful pets sponsored by:
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EXTENSION

CONTINUED FROM PAGE 1

Also present at the meeting was Melissa Hogan, an environmental specialist with the FHA. She said that several potential environmental issues have been identified so far, including resources of historic/cultural significance, migratory birds and anadromous streams. With the environmental assessment far from over, a question remains over whether or not any of these issues could affect the feasibility of the project.

"These are the issues that have surfaced thus far. This meeting is to find out from locals or from anybody who has an interest: what are we missing?" she said.

The project is contentious with some of the residents of the Anton Larsen Bay area. Some are concerned about a potential increase in traffic in an area they choose to live in for its relative remoteness and privacy.

Duncan Fields, who is working as a consultant/advisor with Ouzinkie Native Corporation and the Native Village of Ouzinkie on the project, argued against this.

"There is some opposition from people who live out here. They've moved out here to be isolated, and I understand that they're concerned there'll be more traffic. Ouzinkie would contend that the cars and the boats that would launch here, they'll actually go past those people," Fields said. "So they'll actually have less boat traffic and less disruption by having the new road in place, than they do currently."

Island Trails Network executive director Andy Schroeder sent a letter to the environmental assessment team with its concerns on Oct. 18.

"Part of our mission is to maintain access to recreational trails and waterways throughout the Kodiak region," the letter states. "The proposed road extension would have a considerable impact on the recreational landscape at Anton Larsen Bay and on Kodiak as a whole."

Schroeder added that ITN will not be taking a position on whether or not the project has merit, but requested that, if the project moves forward, recreational loss be mitigated. Among the specific requests which the letter outlined are "removal and disposal of all trail hardening materials along the portion of trail to be decommissioned" and "establishment of a trailhead with parking and signage where the proposed road departs from the existing trail."

A more serious concern raised by one Anton Larsen resident, Margaret Short, is the safety of driving such a road. Short, who has lived in the area for decades, took her concerns to the Kodiak Island Borough Assembly at a work session on October 11.

"The proposed road extension will be connected to, leads up and through the steepest mountain pass on Kodiak's entire road system. It is unmaintained and treacherous and oftentimes impassable in the winter months," she said.

"Blizzards and whiteouts are a frequent occurrence. There is no cell service.

"If an emergency should arise, should someone embarking on traveling the road during the long dark of winter and not arrive when expected, the Coast Guard would no doubt be alerted and chances are a rescue mission would ensue. Essentially, more lives would then be put at risk."

Short also noted that Anton Larsen Bay does not freeze over every year and that Port Lions and Ouzinkie receive regular flights from Kodiak, providing ample opportunity to get people to Kodiak quickly in cases of emergencies.

"Instead of discouraging wintertime use of the road, this will have the reverse effect and actually encourage winter use," Short said, warning of a possible rise in fatalities if the proposed road began to see regular use.

Information on the project, as well as details on how to submit a comment, can be found at the project's website: bit.ly/2Pn1MNo

Questions or comments can be directed to Hogen, who can be contacted at (360) 619-7735 or melissa.j.hogen@dot.gov. The deadline for submitting comments is November 26.

Senior Citizens of Kodiak Menu

Monday	Tuesday	Wednesday	Thursday	Friday
Chicken Parmesan	Swiss Steak	Halloween Picnic & Costume Party	Boneless Pork Chops	Baked Fish with Dill
Buttered Pasta	Mashed Potatoes	Hamburgers & Hot Dogs	Sweet Potatoes	Roasted Red Potatoes
Italian Style Vegetables	Stewed Tomatoes	Potato Salad & Baked Beans	Applesauce	Spinach
Garlic Bread	Dessert	Cookies	Broccoli & Cauliflower	Dessert
			Dessert	
Soup & Salad Bar	Soup & Salad Bar	No Soup or Salad Bar Today	Soup & Salad Bar	Soup & Salad Bar

Week of: October 29–November 2

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APPENDIX E

Agency Comments

Anton Larsen Bay Road Road Extension

Stakeholder List

Agency	Department/Division	First Name	Last Name	Title	Street Address	City	State	Zip	Phone	Email	Website
Other											
Alutiiq Museum		Patrick	Saltonstall	Curator of Archaeology	215 Mission Road, 1st Floor	Kodiak	AK	99615	844-425-8844 Ext. 18	patrick@alutiiqmuseum.org	https://alutiiqmuseum.org/
City of Kodiak		Aimee	Kniaziowski	City Manager	710 Mill Bay Road	Kodiak	AK	99615	907-486-8640	AKniaziowski@city.kodiak.ak.us	https://www.city.kodiak.ak.us/
City of Port Lions		Kathryn	Adkins	City Clerk					907-454-2332	cityofportlions@gmail.com	
Kodiak Historical Society		Sarah	Harrington	Executive Director	101 E Marine Way	Kodiak	AK	99615	907-486-5908	director@baranovmuseum.org	http://baranovmuseum.org/
Kodiak Island Borough		Bud	Casidy	Director of Community Development	710 Mill Bay Road	Kodiak	AK	99615-6398	907-486-9363	bcassidy@kib.co.kodiak.ak.us	https://www.kodiakak.us/
Soil and Water Conservation District - Kodiak		Blythe	Brown	Project Coordinator	301 Research Court, Room 245	Kodiak	AK	99615	907-486-5574	blythe.brown@kodiaksoilandwater.org	http://www.kodiaksoilandwater.org/index.php
Resource Agencies											
Alaska Department of Commerce, Community, & Economic Development (DCCED)		Jimmy	Smith	Local Government Specialist	550 W. 7th Ave, Suite 1640	Anchorage	AK	99501	907-269-4132	jimmy.smith@alaska.gov	https://www.commerce.alaska.gov/web/
Alaska Department of Environmental Conservation (ADEC)	Division of Spill Prevention and Response, Contaminated Sites	Grant	Lidren	Environ Program Specialist	555 Cordova Street	Anchorage	AK	99501	907-269-8685	grant.lidren@alaska.gov	https://dec.alaska.gov/spar.aspx
ADEC	Division of Water, Alaska Pollutant Discharge Elimination System	James	Rypkema	Storm Water and Wetlands Manager	555 Cordova Street	Anchorage	AK	99501	907-334-2288	jim.rypkema@alaska.gov	https://dec.alaska.gov/water.aspx
ADEC	Division of Water, Wastewater Discharge Authorization, Stormwater and Wetlands	William	Ashton	Environmental Engineer	555 Cordova Street	Anchorage	AK	99501	907-269-7564	william.ashton@alaska.gov	https://dec.alaska.gov/water.aspx
ADEC	Division of Air Quality, Non-Point & Mobile Sources Program	Cindy	Heil	Program Manager	555 Cordova Street	Anchorage	AK	99501	907-269-7579	cindy.heil@alaska.gov	http://dec.alaska.gov/air.aspx
Alaska Department of Fish & Game (ADF&G)	Division of Wildlife Conservation	Larry	Van Daele	Area Biologist	P.O. Box 115526	Juneau	AK	99811-5526	907-465-4110		
ADF&G	Division of Habitat	Generic								dfg.hab.infoanc@alaska.gov	
ADF&G	Division of Habitat	William	Frost	Habitat Biologist	333 Raspberry Road	Anchorage	AK	99518	907-267-2813	william.frost@alaska.gov	
Alaska Department of Natural Resources (ADNR)	Division of Parks and Outdoor Recreation, Land and Water Conservation Fund 6(f)	Jean	Ayers	Grants Administrator	550 West 7th Avenue, Suite 1380	Anchorage	AK	99501-3561	907-269-8694	jean.ayers@alaska.gov	
ADNR	Division of Mining, Land, & Water, Southcentral Regional Office	Monica	Alvarez	Natural Resource Manager	550 West 7th Avenue, Suite 1050	Anchorage	AK	99501-3579	907-269-8145	monica.alvarez@alaska.gov	http://dnr.alaska.gov/mlw/
ADNR	Office of History and Archaeology	Judith	Bittner	Chief	550 West 7th Avenue, Suite 1310	Anchorage	AK	99501	907-269-8700	oha.revcomp@alaska.gov	http://dnr.alaska.gov/parks/oha/
National Marine Fisheries Service (NMFS)		Generic								Hcd.Anchorage@noaa.gov	https://alaskafisheries.noaa.gov/
National Oceanic and Atmospheric Administration (NOAA)	Alaska Regional Office	Gretchen	Harrington	Assistant Regional Manager	P.O. Box 21767	Juneau	AK	99802-1767	907-586-7824	gretchen.harrington@noaa.gov	https://alaskafisheries.noaa.gov/
NOAA	Protected Resources Division and Habitat Conservation	Matthew	Eagleton	Essential Fish Habitat Specialist	222 West 7th Avenue, Box 43	Anchorage	AK	99513	907-271-6354	matthew.eagleton@noaa.gov	https://alaskafisheries.noaa.gov/
U.S. Army Corps of Engineers (USACE)		Generic		Send permit applications and scoping letters						regpagemaster@usace.army.mil	http://www.poa.usace.army.mil/
U.S. Coast Guard (USCG)		James	Helfinstine	Commander, 17th Coast Guard District	P.O. Box 25517	Juneau	AK	99802-5517	907-463-2268	james.n.helfinstine@uscg.mil	https://www.pacificarea.uscg.mil/Our-Organization/District-17/
U.S. Environmental Protection Agency (USEPA)		Jennifer	Curtis	NEPA Reviewer	222 West 7th Avenue, #19 Mail Code: AOO	Anchorage	AK	99513-7588	907-271-6324	curtis.jennifer@EPAmail.epa.gov	https://www.epa.gov/aboutepa/epa-regio
U.S. Fish and Wildlife Service (USFWS)	Endangered Species	Douglass	Cooper	Branch Chief, Ecological Services	4700 BLM Road	Anchorage	AK	99507	907-271-1467	douglass_cooper@fws.gov	https://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/index.htm
USFWS		Generic								ak_fisheries@fws.gov	
Tribal Organizations											
Sun'Aq Tribe of Kodiak		Jeannine	Marsh	CEO, Tribal Administrator	312 W. Marine Way	Kodiak	AK	99614	907-486-4449	ceo@sunaq.org, tribe@ptialaska.net	http://sunaq.org/
Native Village of Port Lions		Arnold	Kewan	President	P.O. Box 69	Port Lions	AK	99550	907-454-2234	nativevillageofportlions@gmail.com	https://portlionstribe.net/
Native Village of Ouzinkie		Alex	Ambrosia	President	P.O. Box 130	Ouzinkie	AK	99644	907-680-2259	ouzclerk@starband.net	http://www.ouzinkie.org/
Afognak Native Corporation (Port Lions)		Chantelle	Bartleson	Lands Assistant	300 Alimaq Drive	Kodiak	AK	99615	907-486-6014	lands@afognak.com	https://www.afognak.com/
Ouzinkie Native Corporation (Ouzinkie)		Dave	Stephens	President	P.O. Box 89	Ouzinkie	AK	99644	907-680-2259; 907-680-2217; 680-2208		http://www.ouzinkie.com/
Natives of Kodiak, Inc. (Kodiak)		James	Erickson	President/CEO	215 Mission Rd., Suite 201	Kodiak	AK	99615	907-486-3606	info@nativesofkodiak.com	https://nativesofkodiak.com/
Koniag, Inc. (Kodiak)		Ron	Unger	Chairman and Interim CEO	194 Alimaq Drive	Kodiak	AK	99615	907-486-2530	runger@koniag.com	https://www.koniag.com/
Koniag, Inc. (Kodiak)		Tom	Panamaroff	VP External Affairs	194 Alimaq Drive	Kodiak	AK	99615		mvandaele@koniag.com	https://www.koniag.com/
Native Village of Afognak		Melissa	Borton	Administrator	115 Mill Bay Road	Kodiak	AK	99615			
Ouzinkie Native Corporation (Ouzinkie)		Crystal	Boskofsky	Board Chairman	P.O. Box 89	Ouzinkie	AK	99644			
Natives of Kodiak, Inc. (Kodiak)		David	Anderson	Vice President	215 Mission Rd., Suite 201	Kodiak	AK	99615			

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Douglass Cooper
Branch Chief Ecological Services
US Fish and Wildlife Services
4700 BLM Road
Anchorage AK 99507

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Cooper,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of Section 7 Endangered Species Act Consultation that would be required on this project. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
2. Participate in coordination meetings and joint field reviews as appropriate.
3. Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

Please respond to FHWA with an acceptance or denial of the invitation (e-mail responses are acceptable). If your agency declines, the response should state your reason for declining the invitation. Pursuant to 23 U.S.C. Section 139, any Federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

- has no jurisdiction or authority with respect to the project;
- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

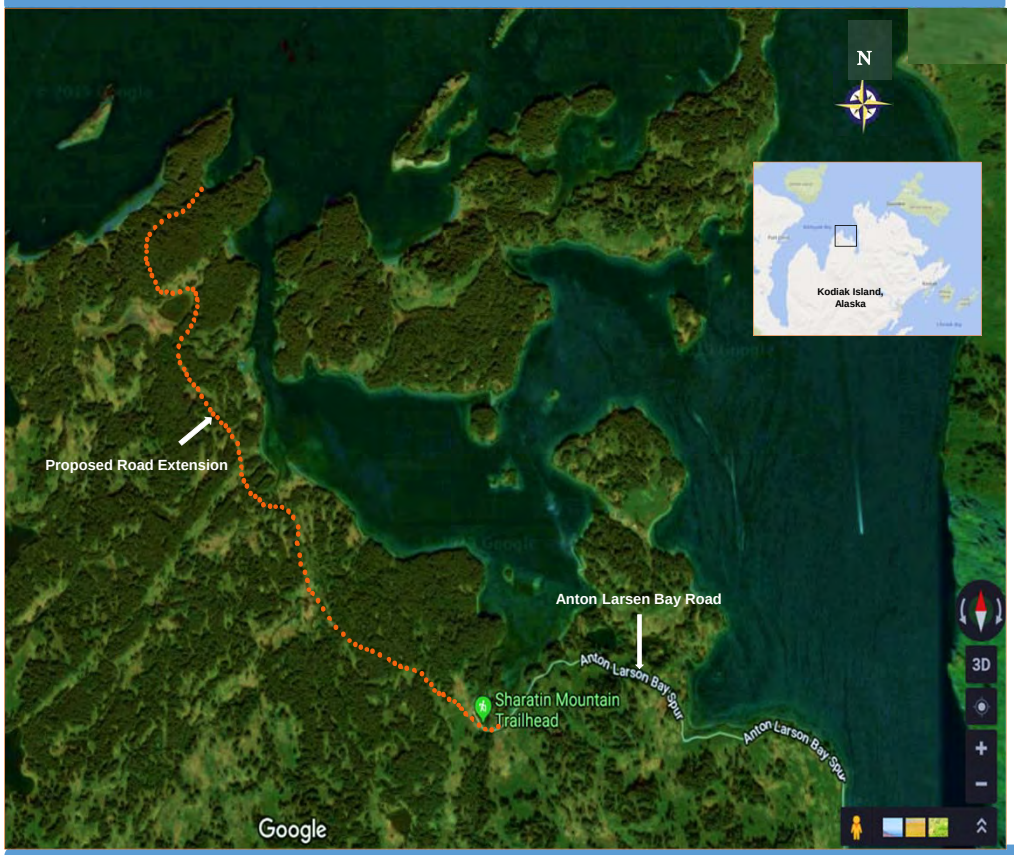
Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

ANTON LARSEN BAY ROAD EXTENSION

PROJECT LOCATION



PROJECT SCOPE

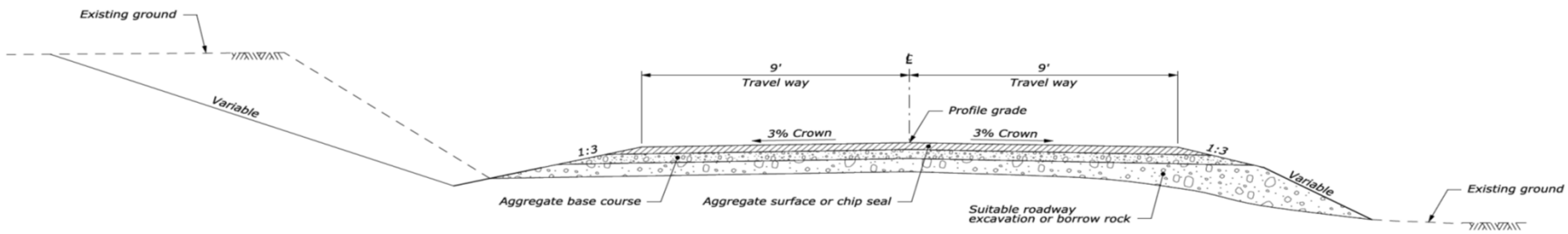
The Western Federal Lands Highway Division of the Federal Highway Administration, in cooperation with the Native Village of Ouzinkie, proposes to extend Anton Larsen Bay Road for approximately two miles to a planned parking area, boat launch and float near Crag Point.

PROJECT PURPOSE & NEED

The purpose of the project is to provide increased access between Kodiak and outlying communities. The proposed additional access to Kodiak fulfills the following needs:

- Increases access to medical & other services offered in Kodiak
- Increases access for those traveling to Kodiak from remote locations
- Increases access to recreation and subsistence activities
- Encourages economic development

TYPICAL SECTION



TYPICAL SECTION

(NTS)

Preliminary Environmental Research

Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Preliminary research has been conducted using the most current available data from state and federal agencies to identify environmental resources within the proposed project study area. The purpose of the preliminary research is to assist in identifying permitting and regulatory requirements and to ensure all environmental considerations are used in developing the proposed project.

Air Quality

According to Alaska Administrative Code 18 AAC 50, Kodiak, Alaska is considered a Class II area, and is not considered an area that regularly exceeds or is near exceeding the health-based National Ambient Air Quality Standards. The two main Environmental Protection Agency criteria pollutants impacting Alaska are carbon monoxide and particulate matter. The project area is not located within or near an area defined by the U.S. Environmental Protection Agency as a Nonattainment Area or Maintenance Area for particulate matter or carbon monoxide (ADEC 2018a).

Biological Resources

Fish

During the summer and fall of 2015, the Alaska Department of Fish and Game (ADF&G) conducted stream surveys along the proposed road right-of-way and documented anadromous fish in three previously undocumented streams and resident fish in one stream (ADF&G 2015). The ADF&G *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* has been updated to include the anadromous streams documented during the 2015 survey. The proposed road extension will cross Chalet Creek (AWC: 252-38-10080) and associated tributaries. Chalet Creek is known for supporting rearing habitat for coho salmon and spawning habitat for pink salmon (ADF&G 2018a).

The existing portion of Anton Larson Bay Road crosses Small Creek (AWC: 252-38-10070). Existing culverts in Small creek do not meet ADF&G design standards for fish passage and may not meet the Alaska Department of Transportation and Public Facilities (DOT&PF) hydraulic requirements for the culvert's drainage basin. The ADF&G has requested that the culverts be replaced with a crossing structure designed to meet fish passage and hydraulic criteria.

Consultation with ADF&G and a Fish Habitat Permit will be required for the crossing structures or culvert placements in fish-bearing waters. In addition, consultation with the National Marine Fisheries Services (NMFS) and an Essential Fish Habitat Assessment may be required for the project.

Eagles and Eagle Nests

Eagles and eagle nesting habitat are both present throughout the project area. According to ADF&G, the range of bald and golden eagles overlaps the project area (ADF&G 2018b). An eagle nest survey was conducted for the proposed road alignment right-of-way. The closest nest identified was approximately 0.46-mile from the proposed road alignment. If an eagle or eagle's nest is identified within 660 feet of a project area, consultation with the U.S. Fish and Wildlife Service (USFWS) will be conducted to determine if an Eagle take permit is appropriate. In addition, the project will follow the mitigation guidance outlined in the *National Bald Eagle Management Guidelines* (USFWS 2007).

An eagle nest survey will be conducted prior to construction to document current conditions in the project area.

Threatened and Endangered Species

According to the USFWS's Information for Planning and Consultation (IPaC) decision support tool, the northern sea otter (*Enhydra lutris kenyoni*) (threatened) and short-tailed albatross (*Pheobastria albatrus*) (endangered) are both present within, or in the vicinity of, the proposed project corridor (USFWS 2018a). In addition, designated critical habitat area has been established for the northern sea otter within the waters of Anton Larsen Bay.

Listed marine mammals under the jurisdiction of National Marine Fisheries Service (NMFS) that could occur in the adjacent marine waters include Steller sea lion (western DPS), northern pacific right whale, sperm whale, humpback whale, fin whale, gray whale, as well as various dolphins and seals. These species can be protected both under the ESA and the Marine Mammal Protection Act.

Section 7 consultation with the USFWS and the NMFS will be required for the project. The FHWA is in the process of completing a biological assessment.

Migratory Bird Habitat

According to USFWS's IPaC decision support tool, the following are noted of particular concern because they occur on the USFWS Bird of Conservation Concern list and may warrant special attention within the project area (USFWS 2018a):

- Bald Eagle (*Haliaeetus leucocephalus*)
- Black Oystercatcher (*Haemotopus bachmani*)
- Black-legged Kittiwake (*Rissa tridactyla*)
- Double-crested Cormorant (*phalacrocorax auritus*)

To avoid adverse impacts to migratory birds, vegetation clearing will follow the USFWS *Recommended Time Periods for Avoiding Vegetation Clearing in Alaska* unless the USFWS has been consulted to determine the most appropriate clearing methods to avoid impacts to nesting migratory species (USFWS 2017). The recommended time period for avoiding vegetation clearing for the proposed project area follow:

- Forest or Woodland – April 15th - July 15th
    - Note: raptors may nest two or more months earlier than other birds.
- Shrub or Open Habitat - May 1st – July 15th
    - Note: raptors may nest two or more months earlier than other birds.
    - Canada geese and swans begin nesting April 20th.
- Seabird Colonies – April 15th – September 7th
- Eagle Habitat - March 1st and August 31st

<u>Department of Transportation Act, Section 4(f)</u>

According to the Alaska Department of Natural Resources (ADNR) Division of Parks and Outdoor Recreation, there are no state parks located in the vicinity of the proposed project (ADNR 2018a). There is, however, a maintained trailhead located near Small Creek, within the project corridor, along the existing section of Anton Larsen Bay Road. The trailhead is referenced locally as Sheratin Mountain Trailhead and is used by hikers to traverse Anton Larsen Bay Trail or hike to the peak of Sheratin Mountain.

Public use lands associated with the U.S. Bureau of Land Management and the U.S. Forest Service were not identified in close proximity to the proposed project area during preliminary research conducted.

The proposed project area is not located near to, or within, a national park (NPS 2018a).

ADF&G website indicates there are no conservations areas, include game refuges, wildlife sanctuaries, or wildlife ranges in the vicinity of the project (ADF&G 2018c).

The USFWS has designated approximately 3.4 million acres of the Aleutian chain to the Alaska Maritime National Wildlife Refuge. The refuge was established as a conservation measure for marine mammals, seabirds, and other migratory birds, as well as the marine resources they rely upon (USFWS 2018b). Though the project area falls outside the established boundary of the refuge, the islands of Kodiak are included in the refuge. Areas of the refuge are in close proximity to the proposed project.

The FHWA will evaluate the presence of Section 4(f) resources located within or adjacent to the proposed project area and will identify potential impacts that will occur due to the project.

Hazardous Material, Solid Waste, and Pollution Prevention

According to ADEC's contaminated sites database, there are no known contamination sites located within or near the proposed project corridor (ADEC 2018b). Should any contamination be identified during construction consultation with ADEC will be required.

Historical, Architectural, Archaeological, and Cultural Resources

According to the NPS, National Register of Historic Places (NRHP), there are no known cultural/historic sites listed on the NRHP (NPS 2018b).

The DOT&PF completed a Draft Cultural Resource Reconnaissance Report for the proposed road extension in June 2014. The report identified several cultural, historical, and archaeological sites in the vicinity of the proposed project corridor. The greatest potential to impact identified resources is likely to occur near the end of the project where areas of former cultural activity were documented (DOT&PF 2014).

Consultation with the ADNR's State Historic Preservation Office (SHPO) and other consulting parties per Section 106 of the National Historic Preservation Act (NHPA) will be required during development of the environmental document.

Land Use

The proposed 2-mile road extension is entirely on lands owned by Ouzinkie Native Corporation, with the exception of the transition zone where the proposed road extension ties into the existing road.

According to the ADNR there are no identified R.S. 2477 Historic Transportation Routes located within the project area (ADNR 2018b).

Water Resources

Wetlands and Waters of the U.S.

A review of the USFWS National Wetland Inventory and existing aerial imagery indicated the presence of wetlands within the proposed corridor for the 2-mile road extension (USFWS 2018c). These wetlands have hydrological connectivity to Anton Larsen Bay and are, therefore, defined as a water of the U.S. and are subject the U.S. Army Corps of Engineers (USACE) jurisdiction.

In June, 2016, the DOT&PF completed a wetlands delineation and mapping for the proposed road extension (Bosworth 2016). Based on preliminary engineering the wetlands delineation identified that the proposed road extension would impacts wetlands and streams (seasonal and perennial). More detailed impact assessment will be conducted during development of the environmental document.

The project will require coordination with the USACE to obtain a jurisdictional determination as well as a Section 404 permit for impacts to wetlands. A Certificate of Reasonable Assurance will be obtained from the Alaska Department of Environmental Conservation (ADEC) to meet Section 401 requirements.

Floodplains

Federal Emergency Management Agency (FEMA) has not completed a study to determine flood hazards in this area; therefore, a flood map has not been published (FEMA 2018).

Navigable Waters

According to the ADNR Alaska Mapper - Navigable Waters website and the U.S. Coast Guard (USCG), there are no navigable waters near the proposed project area (ADNR 2018c, USCG 2012, USACE 1995).

Ground Water

A review of ADEC Drinking water Protection Areas did not identify any water rights within the project area (ADEC 2018c).

References

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ADEC. 2018b. Alaska DEC Contaminated Sites. Last accessed September 25, 2018. http://www.arcgis.com/home/webmap/viewer.html?webmap=315240bfbaf84aa0b8272ad1cef3cad3.

ADEC. 2018c. Alaska Dec Drinking Water Protection Area. Last accessed September 29, 2018. http://www.arcgis.com/home/webmap/viewer.html?webmap=13ed2116e4094f9994775af9a62a1e85&extent=-180,48.8405,-82.9831,72.8312.

ADF&G 2015. State of Alaska Department of Fish and Game Division of Habitat: December 9, 2015 Memorandum RE: Anton Larsen Bay Road Extension. Correspondence from Michael J. Daigneault, Regional supervisor Central Region Office to Jill Taylor, Environmental Analyst Department of Transportation.

ADF&G 2018a. The *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes*. Last accessed September 28, 2018. https://www.adfg.alaska.gov/sf/SARR/AWC/.

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FEMA. 2018. FEMA Flood Map Service Center. Last accessed September 29, 2018. https://msc.fema.gov/portal/search.

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USCG. 2012. Navigable Water of the United States within the Seventeenth Coast Guard District. Last accessed September 29, 2018. https://www.pacificarea.uscg.mil/Portals/8/District%2017/Sector%20Anchorage/PREVENTION/WWM/D17_ListofNavigableWaters_MAR2012.pdf?ver=2018-01-15-231606-937.

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USFWS. 2018a. Information for Planning and Conservation. Last accessed September 28, 2018. https://ecos.fws.gov/ipac/.

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USFWS. 2018c. National Wetland Inventory. Last accessed September 29, 2018. https://www.fws.gov/wetlands/data/Mapper.html.

U.S. Department
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Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Jennifer Curtis
NEPA Reviewer
US Environmental Protection Agency
222 W 7th Ave #19 Mail Code AOO
Anchorage AK 99513-7588

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Curtis,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
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Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
2. Participate in coordination meetings and joint field reviews as appropriate.
3. Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

Please respond to FHWA with an acceptance or denial of the invitation (e-mail responses are acceptable). If your agency declines, the response should state your reason for declining the invitation. Pursuant to 23 U.S.C. Section 139, any Federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

- has no jurisdiction or authority with respect to the project;
- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Matthew Eagleton
Essential Fish Habitat Specialist
NOAA National Marine Fisheries Service
PO Box 43
Anchorage AK 99513

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Eagleton,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of Section 7 Endangered Species Act Consultation that would be required on this project with the National Marine Fisheries Service. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
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3. Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

Please respond to FHWA with an acceptance or denial of the invitation (e-mail responses are acceptable). If your agency declines, the response should state your reason for declining the invitation. Pursuant to 23 U.S.C. Section 139, any Federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

- has no jurisdiction or authority with respect to the project;
- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

Gretchen Harrington
NOAA National Marine Fisheries Service
Alaska Regional Office
PO Box 21767
Juneau AK 99802

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Harrington,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of Section 7 Endangered Species Act Consultation that would be required on this project with the National Marine Fisheries Service. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

We suggest that your agency's role in the development of the above project should include the following as they relate to your area of expertise:

1. Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
2. Participate in coordination meetings and joint field reviews as appropriate.
3. Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

Please respond to FHWA with an acceptance or denial of the invitation (e-mail responses are acceptable). If your agency declines, the response should state your reason for declining the invitation. Pursuant to 23 U.S.C. Section 139, any Federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

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- has no expertise or information relevant to the project; and
- does not intend to submit comments on the project.

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 8, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 18, 2019

In Reply Refer To: HFL-17

James Helfinstine
Commander 17th Coast Guard District
US Coast Guard
PO Box 25517
Juneau AK 99802-5517

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Helfinstine,

The Federal Highway Administration (FHWA), in cooperation with the Native Village of Ouzinkie, proposes to extend the existing Anton Larsen Bay Road on Kodiak Island, Alaska. The project is located in Sections 33 and 34 of Township (T) 26S, Range (R) 2lW, and Sections 3 and 4 of T27S, R2IW, USGS Quadrangle Kodiak D-2 and D-3, Seward Meridian. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funding has not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;
- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section of gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially parallels the existing ATV trail, but then heads northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

FHWA is preparing an Environmental Assessment for the proposed project. Preliminary research has been conducted to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see enclosed preliminary environmental research for more information.

Agency Comment Request

Your agency has been identified as an agency that may have an interest in the project because of the boat ramp and float infrastructure proposed within the water at Crag Point. With this letter, we extend your agency an invitation to become a participating agency and cooperating agency with the FHWA in the development of the Environmental Assessment for the project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to 23 United States Code (U.S.C) section 139, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Kathryn Adkins
City Clerk
City of Port Lions
PO Box 110
Port Lions, AK , 99550

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Adkins,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Monica Alvarez
Natural Resource Manager
ADNR/Southcentral Regional Office
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501-3579

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Alvarez,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

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- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Alex Ambrosia
President,
Native Village of Ouzinkie
PO Box 130
Ouzinkie AK 99644

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Ambrosia,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

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Purpose & Need

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Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

William Ashton
Environmental Engineer
ADEC/Div. of Water, Wastewater Discharge Authorization, Stormwater & Wetlands
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Ashton,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

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Proposed Action

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- construction of a parking area, boat launch ramp and float.

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Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Jean Ayers
Grants Administrator
ADNR/ Division of Parks and Outdoor Recreation
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501-3561

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Ayers,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

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- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
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The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Chantelle Bartleson
Lands Assistant
Afognak Native Corporation
300 Alimaq Drive
Kodiak, AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Bartleson,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Judith Bittner
Chief
ADNR/Office of History and Archaeology
550 West 7th Avenue, Suite 1310
Anchorage, AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Bittner,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
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Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Blythe Brown
Project Coordinator
Soil and Water Conservation District-Kodiak
301 Research Court, Room 245
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Brown,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Bud Casidy
Director of Community Development
Kodiak Island Borough
710 Mill Bay Road
Kodiak AK 99615-6398

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Casidy,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

James Erickson
President/CEO
Natives of Kodiak, Inc.
215 Mission Rd., Suite 201
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Erickson,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

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Environmental Manager
Western Federal Lands Highway Division
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Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

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Western Federal Lands Highway Division
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Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

William Frost
Habitat Biologist
ADF&G/ Division of Habitat
333 Raspberry Road
Anchorage, AK 99518

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Frost,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Cindy Heil
Program Manager
ADEC/Division of Air Quality
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Heil,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
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Enclosures:
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Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
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Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Arnold Kewan
President
Native Village of Port Lions
PO Box 69
Port Lions AK 99550

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Kewan,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
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Enclosures:
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Cc (via email):
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Reuben Johnson, FHWA Project Manager

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Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Aimee Kniaziowski
City Manager
City of Kodian
710 Mill Bay Road
Kodiak, AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Kniaziowski,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Larry Van Daele
Area Biologist
Alaska Department of Fish & Game
PO Box 115526
Juneau AK..99811-5526

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Van Daele,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Grant Lidren
Environ Program Specialist
ADEC/Div of Spill Prevention and Response, Contaminated Sites
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Lidren,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Jeannine Marsh
CEO Tribal Administrator
Sun'Ag Tribe of Kodiak
312 W. Marine Way
Kodiak AK 99614

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Marsh,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Mr. David Anderson
Natives of Kodiak, Inc. (Kodiak)
215 Mission Rd., Suite 201
Kodiak, Alaska 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Anderson,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Ms. Melissa Borton
Native Village of Afognak
115 Mill Bay Road
Kodiak, Alaska 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Borton,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Ms. Crystal Boskofsky
Ouzinkie Native Corporation (Ouzinkie)
P.O. Box 89
Ouzinkie, Alaska 99644

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Boskofsky,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Mr. Tom Panamaroff
Koniag, Inc. (Kodiak)
194 Alimaq Drive
Kodiak, Alaska 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Panamaroff,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed is a schematic showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
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Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

James Rypkema
Stormwater and Wetlands Manager
ADEC/Div. of Water, Alaska Pollutant Discharge Elimination System
555 Cordova Street
Anchorage AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)P

Re: Request for Comments

Dear Mr. Rypkema,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
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Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Sarah Harrington
Executive Director
Kodiak Historical Society
101 E. Marine Way
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Ms. Harrington,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

This project is currently funded for planning and design under a State of Alaska Department of Commerce, Community, and Economic Development (DCCED) grant that was issued to the Spruce Island Development Corporation (SIDCO). FHWA is completing the Environmental Assessment under agreement with SIDCO. Construction funds have not been secured.

Existing Conditions

The existing Anton Larsen Bay Road ends at a parking area approximately 15 miles northwest of Kodiak on Kodiak Island. A boat launch is located approximately one mile from the end of the existing portion of the road and allows for parking and launching small boats but has limited boat access because the bay often freezes during the winter. The bay freezes due to fresh water from tributaries. An all-terrain-vehicle (ATV) trail was constructed to allow ATV access between the end of the existing Anton Larsen Bay Road and just northeast of Three Pillar Point. The trail is only approved for vehicles up to 3,000 lbs, which does not allow for trucks and cars.

Purpose & Need

The purpose of this project is to provide increased access between Kodiak and outlying communities. This proposed additional access to Kodiak fulfills the following needs:

- increases access to medical & other services offered in Kodiak;
- increases access for those traveling to Kodiak from remote locations;
- increases access to recreation and subsistence activities;

- encourages economic development.

Proposed Action

The project, as proposed, includes:

- construction of a 2-mile section gravel road starting at the end of the existing Anton Larsen Bay Road and ending at the beach near Crag Point;
- construction of a parking area, boat launch ramp and float.

The proposed route initially follows the existing ATV trail, but then turns northwest to Crag Point. See enclosed schematic for details.

Environmental Documentation

The FHWA is preparing an Environmental Assessment for the proposed project and has conducted preliminary research to identify resources in the project vicinity. A wetlands delineation, cultural resource investigation, stream inventory, invasive species survey, and threatened & endangered species survey have been performed. Please see attached preliminary environmental research summary for more details.

Agency Comment Request

To ensure that all factors are considered in the Environmental Assessment for this project, your comments regarding resources under your jurisdiction, are requested no later than **April 29, 2019**.

Additional project related information can be accessed at the following link: https://flh.fhwa.dot.gov//projects/ak/anton-larsen/. If you have questions or need additional information, please contact Melissa Hogan, FHWA Environmental Specialist at (360) 619-7735, or by email at melissa.j.hogan@dot.gov.

Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Patrick Saltonstall
Curator of Achaeology
Alutiiq Museum
215 Mission Road 1st Floor
Kodiak, AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Saltonstall,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Jimmy Smith
Local Government Specialist
DCCED
550 W. 7th Ave, Suite 1640
Anchorage, AK 99501

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Smith,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Dave Stephens
President,
Ouzinkie Native Corporation
PO Box 89
Ouzinkie, AK 99644

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Stephens,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

U.S. Department
of Transportation
Federal Highway
Administration

Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661
Phone 360-619-7700
Fax 360-619-7846

March 20, 2019

In Reply Refer To: HFL-17

Ron Unger
Chairman and Interim CEO
Koniag, Inc..
194 Alimaq Drive
Kodiak AK 99615

Subject: Anton Larsen Bay Road Extension
Project Number: AK TR OUZI 2017(1)

Re: Request for Comments

Dear Mr. Unger,

The Federal Highway Administration (FHWA), in cooperation with the Native Village Ouzinkie, proposes to extend the existing Anton Larsen Bay Road in Kodiak, Alaska. Enclosed are maps showing Region, Vicinity, and Typical Section.

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Sincerely,

Scott Smithline
Environmental Manager
Western Federal Lands Highway Division
Federal Highway Administration

Enclosures:
Vicinity map & typical section schematic, preliminary environmental research.

Cc (via email):
Melissa J. Hogan, FHWA Environmental Specialist
Reuben Johnson, FHWA Project Manager

Heather A. Campfield

Subject: FW: Anton Larson Bay Road Extension, AK TR OUZI 2017(1) (Activity #07CAAN00-2019-CPA-0046)
Attachments: TIMING TO AVOID NESTING BIRDS.PDF; 20181016 FISH PASSAGE GUIDELINES.pdf

---

From: Hogan, Melissa J (FHWA)
Sent: Tuesday, April 02, 2019 5:15 PM
To: 'Jennifer Spegon' <jennifer_j_spegon@fws.gov>
Cc: elizabeth_benolkin@fws.gov
Subject: RE: Anton Larson Bay Road Extension, AK TR OUZI 2017(1) (Activity #07CAAN00-2019-CPA-0046)

Dear Ms. Spegon,

Thank you for taking the time to write these helpful project comments!

Sincerely,
Melissa

Melissa J. Hogan
Environmental Specialist
FHWA Western Federal Lands
610 East Fifth Street
Vancouver, WA 98661

360-619-7735

From: Jennifer Spegon [mailto:jennifer_j_spegon@fws.gov]
Sent: Tuesday, April 02, 2019 1:50 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Cc: elizabeth_benolkin@fws.gov
Subject: Anton Larson Bay Road Extension, AK TR OUZI 2017(1) (Activity #07CAAN00-2019-CPA-0046)

Dear Ms. Hogan:

Thank you for opportunity to provide comments on the Anton Larson Bay Road Extension Project (Project). The U.S. Fish and Wildlife Service (Service) has reviewed the Federal Highway Admiration (FHWA) initial plans for the Project in accordance with National Environmental Policy Act (NEPA) [(42 U.S.C. 4321-4347 1969) with Implementing Regulations (40 CFR parts 1500-1508)]. The FHWA is contacting other federal agencies to access the depth of continued engagement under the NEPA, and to identify potential issues and mitigation measures to address in their upcoming environmental analysis on this Project.

Thank you for the opportunity to provide this information early in the planning process. Below are measures that may avoid or reduce adverse impacts on fish, wildlife, and their habitat. We recommend including the following considerations in the analysis and in the mitigation measures for this Project.

> The Service provides the attached Alaska Specific Fish Passage Design Guidelines for the proposed replacement of culverts within the project area and potential replacement of culverts on Airport Road. These guidelines can also be found online at: https://www.akfishhabitat.org/.

If there would be unavoidable impacts to wetlands, we would support analysis of in-lieu fee, mitigation banks, and permittee responsible mitigation.
To protect migratory birds and their nests during nesting season, we recommend scheduling vegetation removal and grading of vegetated areas outside the prime migratory bird-breeding season, and recommend minimizing prolonged human presence near nesting migratory birds during construction and maintenance actions, to the extent practicable. Voluntary timing guidelines are attached.
Surface disturbance and transportation corridors function as prime habitat for the spread of invasive species. We recommend conducting invasive species surveys. If invasive species occur in the action area, we recommend management actions be developed and analyzed in the environmental analysis.
We recommend using our automated tool to streamline the Endangered Species Act, section 7 consultation process. The Service's Information, Planning, and Conservation (IPaC) site is a web-based decision support system that allows our partners to explore the landscape and download a preliminary or an official species list. The species list it provides fulfills the requirement, under section 7(c) of the Endangered Species Act, to provide a list of threatened and endangered species upon request for federal actions and NEPA compliance.

I look forward to working with you as a participating agency on this Project. If you have any questions please contact me at the number below.

Thank you,
Jennifer Spegon

Jennifer Spegon
Ecological Services
Anchorage Fish and Wildlife Field Office
U.S. Fish and Wildlife Service
4700 BLM Road
Anchorage, AK 99507
Phone: (907) 271-2768
FAX: (907) 271-2786
jennifer_j_spegon@fws.gov

To expedite requests for U.S. Fish and Wildlife Service consultations and project reviews, send new requests to our central mailbox at: ak_fisheries@fws.gov and copy douglass_cooper@fws.gov

U.S. Fish & Wildlife Service Region 7

Timing Recommendations for Land Disturbance & Vegetation Clearing

Planning Ahead to Protect Nesting Birds

Nesting Seasons by Habitat Type and Region:
Recommended Times to Avoid Land Disturbance & Vegetation Clearing

HABITAT TYPE→ / REGION ↓	Forest or Woodland *(i.e., trees present)*	Shrub or Open *(i.e., shrub cover or marsh, pond, tundra, gravel, or other treeless/shrubless ground habitat)*	Seabird Colonies *(including cliff and burrow colonies)*	Eagles [e]
Southeast	April 15-July 15[a]	May 1-July 15[a, b]	May 1-September 15	March 1-August 31
Kodiak Archipelago			April 15-September 7	
Southcentral *(Lake Illiamna to Copper River Delta; north to Talkeetna)*	May 1-July 15[a, b]			
Bristol Bay/AK Peninsula *(north to Lake Illiamna)*	May 1-July 15[a, b, c]		May 10-September 15	
Interior *(north of Talkeetna to south slope Brooks Range; west to treeline)*	May 1-July 15[a, b]		May 1-July 20[d]	
Aleutian Islands		April 25-July 15[a]	May 1-September 15	
Yukon-Kuskokwim Delta	May 1-July 15	May 5-July 25[a, b, c]	May 20-September 15	
Seward Peninsula	May 1-July 15	May 10-July 20[a, c]		
Northern *(includes northern foothills of Brooks Range)*		June 1-July 31[a, c]		
Pribilof and Bering Sea Islands		May 15-July 15[a]	May 15-September 15	

[a] Raptors may nest two or more months earlier than other birds.
[b] Canada geese and swans begin nesting April 20.
[c] Black scoter are known to nest through August 10.
[d] Seabird colonies in Interior refer to terns and gulls.
[e] Eagles and eagle nests have additional protections under the Eagle Act, and a permit may be required to conduct activities near an eagle nest. You should contact the U.S. Fish and Wildlife Service's Alaska Region Eagle Permit Program (https://www.fws.gov/alaska/eaglepermit/) for further information if an eagle or eagle nest is located in your project area.

USFWS May 2017

FISH PASSAGE DESIGN GUIDELINES October 16, 2018

U.S. Fish and Wildlife Service Alaska Fish Passage Program

Whenever possible, the USFWS supports minimizing the degradation of the ecological continuity of stream corridors and wetlands by choosing transportation routes that avoid the stream crossing altogether or by using longer span structures that do not impact the floodplain. The information provided below describe the basic culvert design guidelines preferred by the U.S. Fish and Wildlife Service (USFWS) Alaska Fish Passage Program when a culvert has been chosen as the stream crossing structure in a fish bearing stream. The Alaska Fish Passage Program, is a voluntary, non-regulatory initiative in the USFWS to provide funding and technical assistance to reconnect aquatic habitats. These guidelines are a modified version of the USDA Forest Service guidelines for Aquatic Organism Passage, or Stream Simulation method.

Users Note: The ability of a structure to pass fish, water and debris is highly dependent on local hydrology, species, life stage, geomorphic setting and other site-specific considerations. The guidelines herein provided, while based on national, state and local experience and studies, are not universally applicable and should not replace site-specific recommendations, limitations or protocols. The guidelines are not intended as an alternative to active consultation with USFWS and application of these guidelines in the absence of consultation does not imply approval by USFWS or other agencies. This document will be updated on a periodic basis to address new research, comments or questions. Please submit comments or questions to heather_hanson@fws.gov or william_rice@fws.gov.

Hydrologic Functioning

- All stream crossing structures in alluvial systems should be designed using an approach that mimics the natural stream characteristics to the greatest extent possible. The USFWS Alaska Fish Passage Program has adopted the United States Forest Service stream simulation approach with the modifications outlined in this document (USFS, 2008). An example design procedure for stable, alluvial channels is also attached as Appendix A. The stream simulation approach is recommended for stable channels, Rosgen type A, B, C or E channels (Rosgen, 1996). Bridges should be used for type D channels if the flow is actively moving between braids. For crossings of relic channels, sloughs, or wetland complexes, design modifications are described below under "Special Conditions."
- Culvert crossings in systems that are actively degrading such as Rosgen F or G channels, should be avoided (Rosgen, 1996). If they cannot be avoided, these channels must be stabilized at least on a reach-length basis to prevent headcut or excessive lateral movement prior to the construction of a new crossing structure.

- Culverts should be designed, constructed, and maintained so as to provide for *hydrologic functioning* of the water body they are crossing, including connectivity of wetlands and riparian areas adjacent to stream channels, to the greatest extent possible. A longer span structure such as a bridge that spans the entire flood plain is the ideal solution for providing hydrologic functioning. (See figure 1). If a bridge is not feasible, floodplain culverts can also be considered to reduce the alteration of wetland hydrology upstream and downstream of the crossing. (See Appendix C for information on the importance of the riparian area for stream health).
- Crossing structures should be designed to accommodate at least the *100-year flood flow*.
- The width of the primary crossing structure should not be less than 1.0 times the bankfull width of the channel.
- Crossing structures should be placed within/over the pre-development natural channel alignment when possible. Road alignment for new roads should be as close to perpendicular to the channel as possible.

Culvert Size, Slope, and Substrate

- Culvert substrate material within/under the crossing structure should remain *dynamically stable* at all flood discharges up to and including a *50-year flood flow*. For culverted crossings without an adequate upstream sediment supply, the substrate material within the crossing should be designed to resist the predicted critical shear forces up to the 100-year flood. For culverts in sand bed channels sediment retention sills may be used if necessary. For culverts with slopes 6% or greater, steps and cascade features should be sized and keyed in so not to move up to the 100 year flow event, but if necessary sills can be used to keep footer rock in place.
- *Culvert slope* should be within 25% of the natural stream slope of the selected reference reach. For example, if a reference reach is 1.0% slope, the minimum design slope of the stream simulation culvert would be .75% and the maximum design slope would be 1.25%.
- Culverts should have a minimum diameter of five feet (5'). This minimum diameter applies for small streams with a bankfull width of five feet or less. For larger streams, a longer span structure (bridge or culvert) should be used that meets the requirements of these guidelines. A bridge should also be considered for small streams in order to provide better floodplain connectivity.
- *Streambanks* are recommended inside of culverts where feasible to protect the culvert from abrasion, provide resting areas for fish, and provide for small mammal crossing. If streambanks are constructed through a crossing, the streambanks should be constructed of rock substrate designed to be stable at the 100-year flood. The streambank width should be a minimum of 2.0 times the maximum sieve size of the streambed material (D100). The crossing width should be increased to allow for the channel width plus the streambanks. Streambanks are not recommended for areas with permafrost or severe freeze-thaw issues, in wetland complexes, for areas with large amounts of sheet flow or ice flows, or in the intertidal zone. For type A or B channels, the designer should err on the side of caution to ensure the stability of banks constructed inside culverts or use a bankfull width culvert.
- Round culvert pipes should have a *minimum invert burial depth* of forty percent (40%) of the culvert diameter into the substrate and arch culvert pipes (i.e., "squash" pipes), should have a minimum invert burial depth of twenty percent (20%) of the culvert's rise into the substrate,

unless vertical adjustment potential (VAP) analysis shows less fill is acceptable. In areas where permafrost is very close to the surface a hybrid of the stream simulation and hydraulic method may be considered to reduce the culvert embed and prevent thaw of the permafrost.

- Substrate material within/under the crossing structure should incorporate a continuous *low flow channel* that simulates the reference reach to allow for adequate fish passage during minimum flows.
- The *gradation of the substrate material* within a culvert should be designed to be a dense, well graded mixture with adequate fines to ensure that the majority of the stream flows on the surface and the minimum water depth is maintained. The Fuller-Thompson equation should be used to ensure a minimum void content (USFS, 2008).
- If substrate *retention sills* must be used (for example, sand bed systems or on slopes >6%), they should have a maximum weir height of one half (0.5) of the culvert invert burial depth (i.e. 20% of diameter for round pipes and 10% of rise for arch pipes). Substrate retention sills should be spaced so that the maximum drop between weirs is four inches (4"). Sills should not be used without substrate.
- Culvert pipes and arches should be corrugated; smooth wall culverts should not be used.
- Beaver barriers, trash racks or debris interceptors should not be used because of the potential to block adult salmon without robust and regular maintenance.

Use of Reference Reach in Design

- A *Reference Reach* is defined in the Description of Terms with basic selection parameters found under the definition of *Stream Simulation Design*. Data gathered should include at a minimum: channel width at bankfull, bankfull cross-sectional area, gradient, substrate grain size key pieces, stream type, bankfull average depth, flood prone width, stream order, and watershed area. The reference reach bankfull dimensions should be determined in the field by surveying a detailed cross section at the upper 1/3 of a representative riffle.
- Under normal flow conditions, the channel in the crossing structure should not substantially differ from the reference reach condition in regards to the channel width at bankfull, bankfull cross-sectional area, gradient, stream type, and bankfull average depth.

Special Conditions:

- In low (less than 0.5%) to zero sloped stream environments at relic channels, sloughs or wetland complexes, backwatering with similar depth as the adjacent area is the preferred method for providing fish passage combined with the synthetic width method (defined below) to develop a culvert size.
- Relic channel or slough: (*Synthetic Width Method*) Should field geomorphic data show an existing stream in a relic channel (i.e. old glacial outwash) or slough, with no defining bankfull features, a synthetic width may be estimated for culvert sizing by utilizing a calculated 2-year flood event with an average cross-sectional velocity of less than 4 fps and ideally similar to adjacent water velocities and water depth, unless there is additional supporting data or other agency criteria to design otherwise. The maximum velocity of 4 fps was chosen based on the observation by Leopold (1994) that "For rivers of moderate size (2 to 100 square miles of drainage area), the flow at bankfull stage will ordinarily have a mean velocity on the order of 4 feet per second" (p. 33). Note that this method or velocity may not be applicable for all cases and the velocity would ideally be less, particularly in stream

gradients of 1% or less.

- Wetland complexes:
  1. If possible, crossing of wetlands are best avoided. If they must be crossed, the ideal crossing in a wetland complex is a backwatered crossing that emulates the low velocity and water depth of the surrounding wetland environment, yet meets flood standards on its own or with additional floodplain culverts. To develop initial widths for such a crossing, the following situational methods could be applied:
     - Method A: The designer may use a reference reach upstream or downstream in a single thread portion of the creek to size the proposed crossing. Recommendations for choosing a reference reach may be found under *Stream Simulation Design* in the Description of Terms section below.
     - Method B: If no reference reach is available on the same stream or if the crossing slope needs to be steeper than any reference reach due to constraints such as road height or maintaining upstream water levels, crossing stream types should be selected using an appropriate geomorphic analog primarily based on slope (see figure 5) in conjunction with the *synthetic width method* to develop the crossing structure dimensions. If possible, the designed crossing should have a slope of 1% or less to maximize success in these environments and minimize beaver issues.
  2. For both Method A and Method B, flood plain culverts should be provided as conditions permit to allow for wetland continuity across the flood plain area and to minimize flow constriction at flood levels. Flood plain culverts should be placed in the flood plain outside of the primary channel and at a higher elevation to insure a minimum depth will be maintained in the primary crossing structure for fish passage at low flows.

DESCRIPTION OF TERMS

100-Year Flood Flow: The stream discharge that has a reoccurrence interval of 100 years, or a 1 in 100 chance of occurring in a given year. If the crossing structure is not designed to accommodate the 100-year flow, a route must be established to safely convey flows exceeding the design flow without causing damage to property, endangering human life or public health, or causing significant environmental damage. In cases of crossings within high entrenchment ratio environments (flood prone width/bankfull width >2) then floodplain overflow culverts may be beneficial to floodplain connectivity and can be used to pass the 100-year flood, but minimum width requirements for the primary culvert still apply.

50-Year Flood Flow: The stream discharge that has a reoccurrence interval of 50 years, or a 1 in 50 chance of occurring in a given year

Bankfull: For non-entrenched stream types (C, D, DA and E), bankfull is the height on the streambanks where water flow fills the channel and begins to spread out onto the flood plain. (See Figure 3). For entrenched stream types(A, B, F and G), other indicators are required to identify the bankfull elevation such as the highest active depositional feature, slope breaks, change in particle size distribution, small benches, staining of rock, lichens, and certain riparian vegetation species (Rosgen, 1996). (See figure 4). Use multiple indicators wherever possible to determine a common bankfull stage elevation. Where possible, calibrate field-determined bankfull stage elevation and corresponding bankfull channel dimensions to known recurrence interval discharges at gage stations. Bankfull features are typically wider than the *ordinary high water mark*.

Bankfull width: The surface width of the stream measured at bankfull. (See figure 2 for an example of bankfull width on a small stream).

Bankfull Cross sectional Area: The sum of products of unit width and depth at the bankfull stage elevation in a riffle cross section.

Bankfull discharge: A frequently occurring peak flow whose stage represents the incipient point of flooding. The bankfull discharge is expressed as the momentary maximum of instantaneous peak flows rather than the mean daily discharge. It is often associated with a return period of 1-2 years, with an average of 1.5 years (Rosgen, 1996).

Dynamically Stable: Dynamic stability means that channel dimensions, slope and planform do not change radically even though they adjust to changing inputs of water, sediment and debris.

Entrenchment Ratio: The vertical containment of a river, obtained by dividing the flood-prone width by the bankfull width at a reference riffle (Rosgen, 1996).

Flood-prone Area and Width: The area adjacent to the watercourse constructed by the watercourse in the present climate and inundated during periods of high flow. The flood-prone width is the width of the flood plain at an elevation two times (2X) the maximum bankfull depth (Rosgen, 1996).

Hydraulic Methods: A culvert designed with the hydraulic method is designed to maintain flow velocities to be less than the swimming abilities for the weakest swimming fish at the high fish passage flow predicted with hydrologic modeling. Due to the limitations of hydrologic modeling accuracy and the limited data on fish swimming abilities, the hydraulic method should be avoided if possible.

Hydrologic Functioning: A crossing is considered to be hydrologically functioning for fish passage if it allows for hydraulic conveyance, debris conveyance and fish passage in the channel and flood plain during flows ranging from low flows during dry periods up to a 100-year flood flow. Sediment transport should remain in equilibrium throughout the range of flows so that no aggradation or degradation will result.

Low Flow Channel: A low flow channel is intended to provide fish passage at minimum flows. The low flow channel should mimic the reference reach where possible. If the low flow channel dimensions are not discernable from the reference reach, the low flow channel should have a cross section sectional area of 15-30% of the bankfull cross sectional area and a minimum depth of four inches (4") for small streams up to twelve inches (12") for larger streams. The low flow channel should be defined by rock features that will resist critical shear forces up to the 100-year flood. (See figure 2 for an example of a low flow channel on a small stream).

Ordinary High Water Mark (OHWM): OHWM is a legal, non-geomorphic term defined by Alaska statute §41.17.950 (15) which states the "ordinary high water mark means the mark along the bank or shore up to which the presence and action of tidal or non-tidal water are so common and usual, and so long continued in all ordinary years, as to leave a natural line impressed on the bank or shore and indicated by erosion, shelving, changes in soil characteristics, destruction of terrestrial vegetation, or other distinctive physical characteristics" (Alaska Legal Resource Center, 2008). Reference http://www.adfg.alaska.gov/index.cfm?adfg=uselicense.faqs#howdoiknow for more information on identifying the OWHM. Also, see figure 2 for an example of the OHWM on a small stream.

Reference Reach: A portion of a stream that represents a stable channel (dimension, pattern, profile) within the geomorphic context that exists in that segment and can represent a natural or a stable, modified condition. A reference reach should be a minimum 20 times the reference bankfull width and no less than 200 feet in length for creeks less than 10 feet in bankfull width. See the definition for Stream Simulation Design for further reference reach selection recommendations.

Retention Sills: Metal or wood plates welded into a culvert with a height of no more than one half of the embedment depth. Retention sills are intended to hold substrate in place in culverts greater than 6% slope. Retention sills should not protrude into the flow.

Slope ratio: The ratio of the culvert bed slope to the upstream reach or reference reach channel slope. The slope of the reference reach should be calculated using the water surface elevations from head of reference reach riffle at the top of the reach to head of riffle at the bottom of the reach assuming the reach slope is consistent.

Stream Simulation Design: Stream simulation means that the crossing is designed using reference data from a representative section (reference reach) of the specific water body being

crossed. Stream simulation is a crossing design technique that attempts to replicate the natural stream channel conditions found upstream and downstream of the crossing. Sediment transport, flood and debris conveyance, and fish passage function much as they do in the natural channel if designed correctly. Stream simulation uses bankfull channel dimensions to size the crossing structure and channel. If there are no suitable reference reaches on the specific body of water being crossed, a reference reach may be chosen from another water body with similar geomorphic and hydrologic characteristics. We recommend following the criteria outlined in the River Morphology and Applications workshop by Wildland Hydrology for selecting a reference reach:

- The reference reach bankfull width should be at least one half, but not more than two times the water body being crossed
- The reference reach bankfull discharge should be at least one half and no more than one and one half times the bankfull discharge of the water body being crossed
- The stream order of the reference reach should be within one stream order of the water body being crossed
- The reference reach should be within 25% of the crossing gradient as noted in the guidelines above.

The crossing design channel width, area and other features should be scaled to the reference reach using ratios to the bankfull conditions.

Streambanks: The streambanks correspond to the bankfull elevation of a natural channel. Streambanks inside a culvert may be simulated with large rock designed to be stable up to the 100-year flood flow.

Substrate Grain Size: A particle size distribution based on a particle count taken in the reference reach of at least 100 particles. Refer to Bunte and Abt (2001) for recommended sampling methods.

Synthetic Width Method: A method of calculating culvert width dimensions when the current flow regime does not coincided with the geomorphic bankfull indicators such as in a relic channel or slough or no defining bankfull features exist (See *bankfull* definition).

Figure 1: Range of crossing ecological objectives and examples of corresponding design approaches (USFS, 2008).

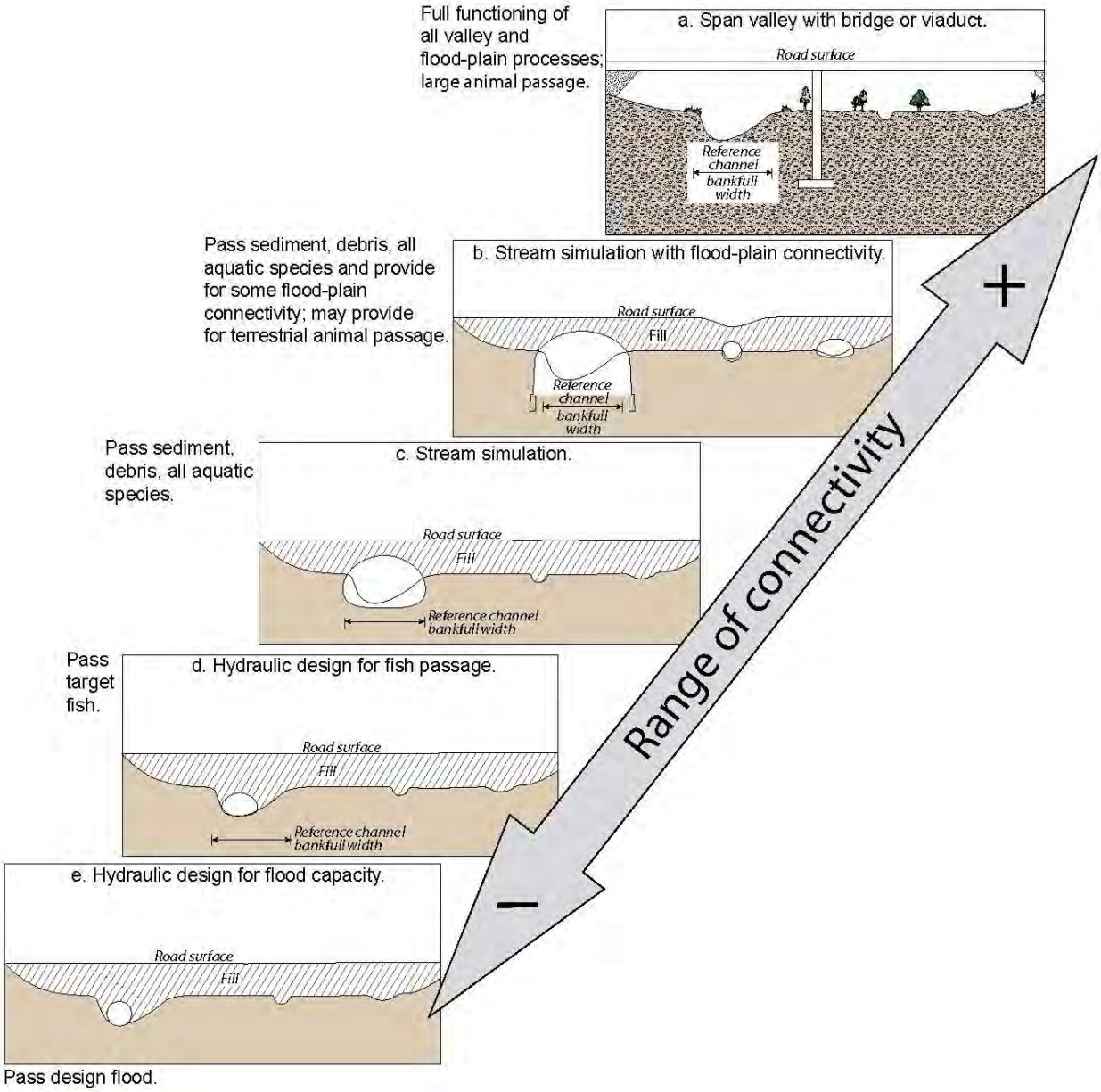


Figure 2: Bankfull width, OHWM and a low flow channel on an E3b stream type

Figure 3. Typical channel features for a non-entrenched channel (Rosgen, 1996).

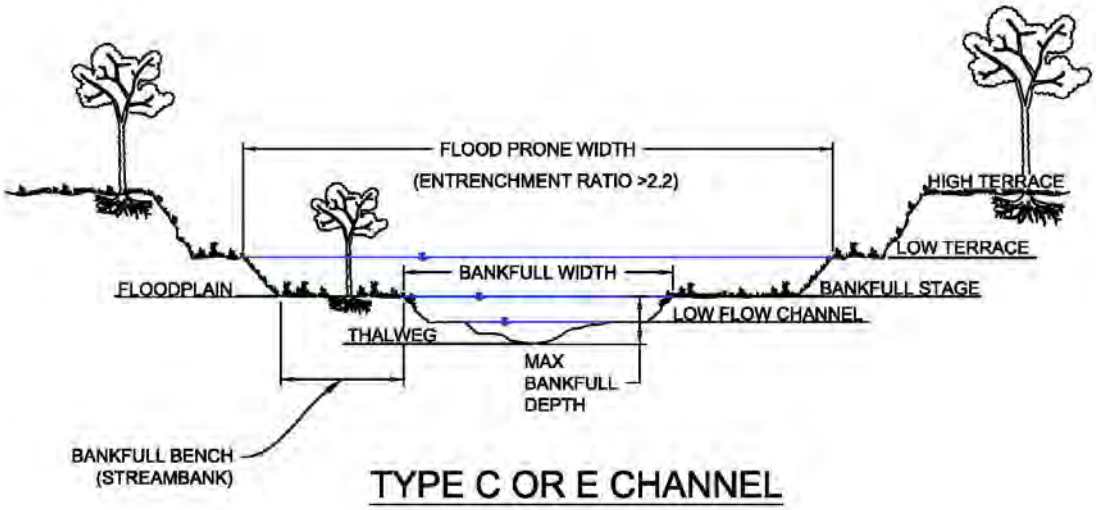


Figure 4. Typical channel features for an entrenched channel (Rosgen, 1996).

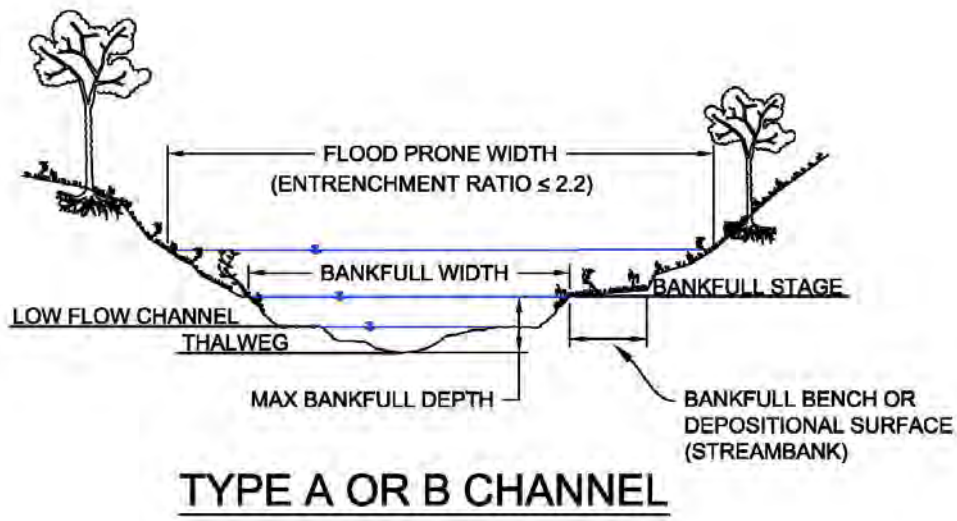
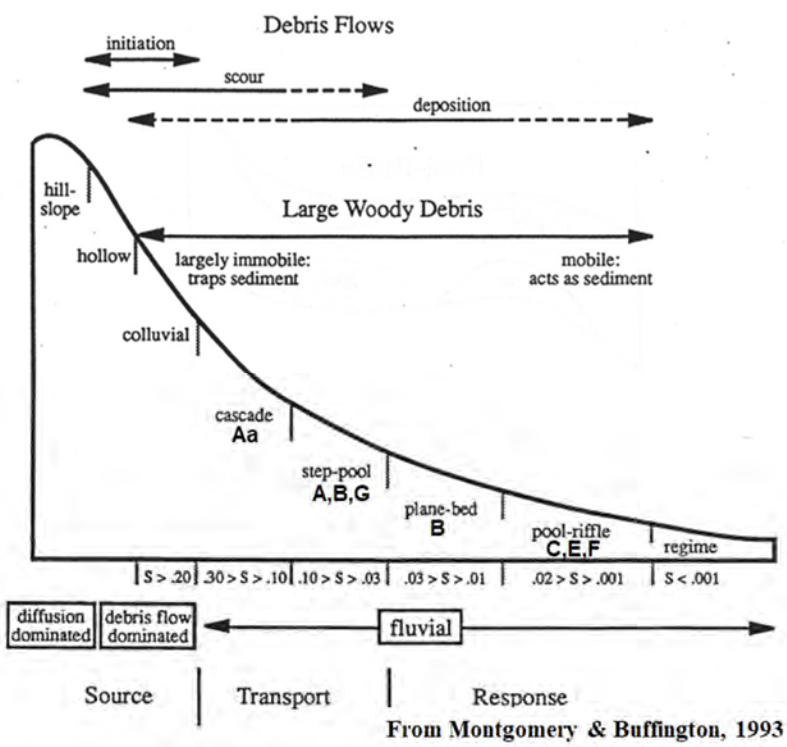


Figure 5. Geomorphic processes and stream types relative to channel slope (Montgomery and Buffington, 1993).



APPENDIX A

EXAMPLE DESIGN PROCEDURE FOR FISH PASSAGE CULVERTS

U.S. Fish and Wildlife Service
Alaska Fish Passage Program

This step by step guide is intended as a companion to the "Fish Passage Design Guidelines." The following list sequentially describes a procedure used by the USFWS Alaska Fish Passage program for Fish Passage Culvert Design in alluvial channels but it is not intended to preclude other design approaches. We recommend consultation with the local Alaska Department of Fish and Game habitat permitting office early in the design process.

1. Complete a hydrology report. If site is un-gaged try multiple flood frequency estimation methods (USGS equations, Manning's Equation, TR-55, etc.).
2. Complete survey at the crossing site including channel cross sections and a detailed longitudinal profile at least 20 times the bankfull width both upstream and downstream of the crossing and channel cross sections, more if there is any indications of instability or other information needs like headcut potential, debris jams, etc. Use channel survey data and site observations to determine the channel type and valley type using the Rosgen classification system (Rosgen, 1996).
3. Determine the design approach and the location of the reference reach for the given channel type and site geomorphology. The length of the reference reach survey should be at least 20 times the bankfull width and at least 200 feet for streams 10 feet bankfull width or less.
4. Perform pebble count at the reference reach and upload survey data and pebble count data to Rivermorph, CAD, or excel spreadsheet. Refer to Bunte and Abt (2001) for recommended pebble count sampling methods.
5. Plot long profile and cross sections and determine bankfull width (Wbkf) of the reference cross section (typically a representative riffle).
6. Determine valley slope from CAD or field measurements.
7. Determine reference reach slope from long pro - use the water surface head of riffle to head of riffle. Compare with bankfull slope and adjust bankfull calls if necessary. (Bankfull slope should match water surface slope. If it doesn't this may indicate the bankfull calls made in the field were incorrect or that channel evolution is occurring). Make sure Wbkf of reference cross section makes sense with the other bankfull calls along the profile. (Use Rivermorph or CAD for this task).

8. Determine new culvert alignment, slope, vertical adjustment potential (VAP) lines, tie in points to the existing stream bed and draw this in on the long pro in Rivermorph, CAD or Excel. See U.S. Forest Service (USFS, 2008) Stream Simulation Manual, chapter 6, for considerations in choosing tie in points and VAP lines. Also, see Figure 1 in Appendix B for further VAP line guidance from the USFS. Make sure new culvert design slope is within 25% of reference reach slope. Expect there may be sediment deposition upstream and/or downstream at the culvert that may need to be removed. Check actual length of culvert in CAD based on tie in points to existing thalweg, embedment depth, minimum cover depth, road width and embankment slope.
9. Fill out reference reach stream classification page in Rivermorph or by hand – "River Stability Field Guide" WS2-3 (See Figure 2, Appendix B) (Rosgen, 2008). See Figures 10-13 in Appendix B for guidance on the Rosgen channel classification system (Rosgen, 2007).
10. Determine bankfull discharge and velocity for the reference cross section in Rivermorph or using a simple cross section program (WinXS Pro is free online) based on reference cross section, bankfull slope, and Manning's or other open channel equations. Manning's n should be estimated from D84 of riffle pebble count, stream type, tables, etc. and compare results of different methods. ("River Stability Field Guide" WS2-2, Figure 3, Appendix B) (Rosgen, 2008). Check that average bankfull velocity is between 2.5 to 5 fps for fish streams. Check that bankfull discharge is relatively close to the 1-2 year storm predicted by hydrology or gage.
11. Create model of the existing crossing in HY8 so the existing flood capacity can be compared with the new crossing design capacity. (Note: Other hydraulic analysis software such as HEC-RAS or Culvert Master may be used in lieu of HY8 throughout the design).
12. Model new culvert in HY8. Design flow should be Q100. Check the bankfull flow and high fish flows as well to see if the elevation is as expected. Create tail water cross section with bankfull channel, floodplain, and low flow channel. (See Fish Passage Culvert Design Guidelines for guidance on low flow channel dimensions and step 22 for guidance on flood plain width). Model the channel cross section inside the culvert by choosing an appropriate average embedment depth that accounts for the area blocked by fill. Or use a user generated culvert cross section to model the bankfull channel and low flow channel shape directly. Choose a culvert that passes Q100 with HW/D =0.8. Culvert should either be bankfull width or if streambanks are necessary or desired a minimum bankfull width + 4xD100. Designer should assume D100 and check it in next step (iterate as needed). Banks are desirable for fish Passage and small mammals if feasible. We don't want culvert wider than 1.4x Wbkf for culverts less than 12 feet or 1.2xWbkf for culverts greater than 12 feet or aggradation may result. Desired bank widths are 2-3 feet per side unless you are using class 3 (D100=30") or larger rip rap to construct the banks.
13. Size coarse material using Corps of Engineers equation for rip rap design found in FHWA "River Engineering for Highway Encroachments", page 6.25 to 6.30 (Richardson, Simons and Lagasse 2001). FWS has developed the "Streambed Material Sizing Analyzer.xlsx" spreadsheet to use this method (See Figure 4, Appendix B for example). Input the design flood velocity in culvert (use average velocity at a given cross section) and model flow height to determine the D30 size of the coarse material required for stability. Use HY8 water surface profile to find where the max average velocity is; which may be inlet or outlet. Determine coarse and fine aggregate gradation using Fuller Thompson equation as a target (compare in the Streambed

Material Sizing Analyzer spreadsheet). The spreadsheet is set up to use the AKDOT rip rap sizes or to use a custom coarse aggregate gradation. Note, AKDOT rip rap gradations are very uniform and will need to be mixed (i.e. 33% Type I + 33% Type II + 34% Fine Aggregate) in order to achieve a well graded combined gradation. For a copy of the spreadsheet send an e-mail to heather_hanson@fws.gov. Note: The FHWA HEC No. 23 circular titled "Bridge Scour and Stream Instability Countermeasures: Experience, Selection and Design Guidance" provides alternative methods for rip rap design.

14. Determine if there is adequate upstream sediment supply to move through the culvert. You will not have adequate sediment if the culvert is at a lake outlet, you have a wetland upstream, or a stream with a silty substrate. If there is adequate sediment supply design the culvert substrate for Q50. If sediment supply is not adequate, design culvert substrate for Q100. Check design substrate size against the upstream reach wide pebble count (Q50) and key pieces count (Q100). If the pebble counts are showing larger material than the sizes calculated, your hydrologic estimate may be low. However, in a relic channel you may have a larger pebble count in the system than would be mobilized by the current flow regime. (Note: the USFS stream simulation method relies on sediment moving through the culvert to replenish scoured sections inside the culvert. In contrast, the U.S. Fish and Wildlife Service modified approach is to have a minimum stability for the coarse sediment in the culvert corresponding to the Q50 flow recognizing that mobility will only occur for the fine fraction of the sediment or at flows higher than Q50. See the U.S. Forest Service Stream Simulation Design Manual, Appendix E for further discussion of the USFS approach) (USFS, 2008).
15. Design immobile key pieces and stream bank material inside the culvert for Q100. Use either rock clusters or rock bands to define the low flow channel and design for Q100. Check Q100 size against key pieces count data. See Figures 5-7 in Appendix B for rock clusters size, spacing and design guidance.
16. Check embed of culvert is 2xD100 and allows for potential scour (lower VAP, Figure 1, Appendix B). Typical embedment depths range from 25-40% of culvert height. Also check culvert width is adequate to construct banks of 2xD100 per side if using banks. Will likely need to iterate to find a solution.
17. Check culvert capacity for potential aggradation- upper VAP. This would be head of riffle to head of riffle and this could reduce capacity if there is a concave slope change. If there's potential for debris flows use bankfull elevation for upper VAP instead of head of riffle.
18. Consider floodplain relief culverts where entrenchment ratio is greater than 2.0 and / or obvious side channels exist. (See Figure 8-9 in Appendix B and USFS (2008), chapter 5 for guidance). Flood plain relief allows water on the floodplain to drain more quickly during flows greater than bankfull and helps to prevent aggradation of the floodplain that is common in large flood events. Floodplain relief culverts should be placed with their flow line at bankfull elevation at a minimum. (Rock stable to the Q100 may be used to infill the culvert and set the elevation of the flow line). They should not be placed at the same elevation as the thalweg of the main culvert to eliminate chance of capturing creek. Allow enough space between culverts to construct stable banks for the main culvert and not reduce the competence of the main culvert fill compaction. Use a higher Manning's n for the floodplain relief culvert in HY8 assuming brush and grass will

grow on the floodplain (Reference Arcement and Schneider (1989) for guidance on Manning's n for floodplains).

19. Transfer design to CAD. Double check alignment, slope and tail water cross section for final culvert design and iterate if necessary.
20. Continue culvert substrate upstream and downstream of inlet and outlet for approximately 50% of Wbkf. Design substrate in constructed channel outside of culvert for Q50 or pebble count, depending on scour mitigation as flow transitions from culvert to natural channel and floodplain. If streambanks are designed in the culvert, extend rock banks outside of culvert a minimum of 2 times the D100 rock size to transition to natural or bioengineered banks, depending on length of channel disturbance.
21. Design stream banks to withstand predicted velocities using appropriate bioengineering techniques. (See Fischenich (2001) for design guidance and ADF&G's Streambank Revegetation and Protection guide (Walter, Hughes, Moore and Inoue, 2005) for details commonly used in Alaska).
22. Construct cross section for reconstruction of disturbed stream upstream and downstream of the culvert. The cross section should include the low flow channel, bankfull channel and bankfull bench dimensions as well as bioengineering details. See Table 1 for bankfull bench width recommendations and Figures 2 and 3 for an illustration of typical channel, floodplain and terrace features for different types of channels. Also look at floodplain width in the reference reach for guidance. If the contractor is able to disturb less streambank than anticipated we will typically preserve undisturbed stable streambanks if possible.

Table 1. Recommended bankfull bench widths as a function of percent of bankfull channel width from Wildland Hydrology 2017 Level IV River Restoration and Natural Channel Design Workshop.

Bankfull Channel Width (ft)	Recommended Bankfull Bench Width (% of Channel Width)
<20 ft	75%
20-50 ft	50%
>50 ft	25%

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APPENDIX B

Slides, Forms, and Examples

FIGURE 1: LOWER VAP LINE RECOMMENDATIONS FOR VARIOUS CHANNEL TYPES

Newbury Creek, longitudinal profile assessment

12) Delineate the lower vertical adjustment potential (scour) line.

- Choose deepest pool along channel not influenced by the undersized culvert.
- Adjust line to reflect scour/fill processes that occur during floods. Recommended criteria:

o 1.00 x Pool Max Depth (PMD): Step-pool channels, S > 5%, boulder-cobble boundaries.
o 1.25 x PMD: Step-pool channels with S < 5%, cobble-gravel boundaries.
o 1.50 x PMD: Steep riffles with ribs, cobble-gravel boundaries.
o 1.75 x PMD: Riffles, gravel-cobble boundaries.
o 2.00 x PMD: Rffles, sand-fine gravel boundaries.
o No adjustment for bedrock.

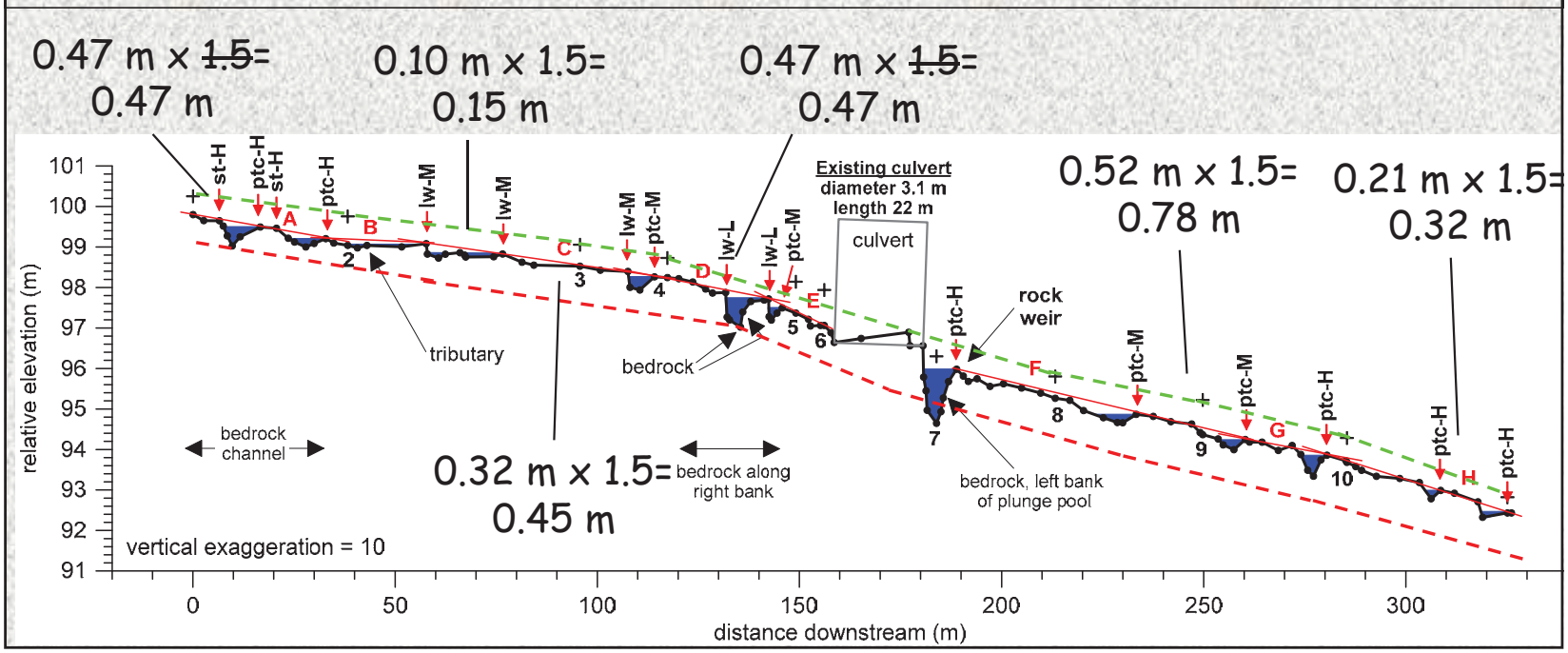

FIGURE 2: STREAM CLASSIFICATION WORKSHEET

Worksheet 2-3. Field form for *Level II* stream classification.

Stream:			
Basin:	Drainage Area:	acres	mi^2
Location:			
Twp.&Rge:	Sec.&Qtr.:		
Cross-Section Monuments (Lat./Long.):		Date:	
Observers:		Landscape Type:	

Bankfull Width (W_{bkf}) The surface width of the stream at bankfull stage elevation, in a riffle section.		ft
Bankfull Mean Depth (d_{bkf}) Mean depth of the stream channel cross-section, at bankfull stage elevation, in a riffle section ($d_{bkf} = A_{bkf} / W_{bkf}$).		ft
Bankfull Cross-Sectional Area (A_{bkf}) Area of the stream channel cross-section, at bankfull stage elevation, in a riffle section.		ft^2
Width/Depth Ratio (W_{bkf} / d_{bkf}) *Bankfull Width* divided by *Bankfull Mean Depth*, in a riffle section.		ft/ft
Bankfull Maximum Depth (d_{max}) Maximum depth of the bankfull channel cross-section, or distance between the bankfull stage and Thalweg elevations, in a riffle section.		ft
Flood-Prone Area Width (W_{fpa}) Width of the channel at an elevation that is twice the *Bankfull Maximum Depth*, measured perpendicular to the fall line of the valley in a riffle section.		ft
Entrenchment Ratio (ER) The *Flood-Prone Area Width* divided by *Bankfull Width* (W_{fpa} / W_{bkf}), in a riffle section.		ft/ft
Channel Materials (Particle Size Index D_{50}) The D_{50} particle size index represents the median or dominant diameter of channel materials, as sampled proportionately from the channel surface between the bankfull stage and Thalweg elevations.		mm
Average Water Surface Slope (S) The elevation difference of water surface measurements over the stream length between two similar bed features (e.g., start of riffle to start of last riffle) for several riffle–pool or step–pool sequences, representing channel gradient.		ft/ft
Channel Sinuosity (k) An index of channel pattern determined from stream length divided by valley length (SL / VL), or from valley slope divided by average water surface slope (S_{val} / S).		ft/ft

Stream Type → [ ] ← **See Classification Key (Figure 2-35)**

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FIGURE 3: BANKFULL DISCHARGE WORKSHEET

Worksheet 2-2. Computations of bankfull mean velocity and bankfull discharge using various methods.

Bankfull VELOCITY & DISCHARGE Estimates

Stream:				Location:	
Date:		Stream Type:		Landscape Type:	
Observers:				HUC:	_ _ _ _ _ _ _ _ _ _ _ _

INPUT VARIABLES			OUTPUT VARIABLES		
Bankfull Riffle Cross-Sectional Area		A_{bkf} (ft^2)	Bankfull Riffle Mean Depth		d_{bkf} (ft)
Bankfull Riffle Width		W_{bkf} (ft)	Wetted Perimeter $\approx (2 * d_{bkf}) + W_{bkf}$		W_p (ft)
D_{84} Particle Size at Riffle		D_{84} (mm)	D_{84} Particle Size in Feet D_{84} (mm) / 304.8		D_{84} (ft)
Bankfull Slope		S_{bkf} (ft / ft)	Hydraulic Radius A_{bkf} / W_p		R (ft)
Gravitational Acceleration	32.2	g (ft / sec^2)	Relative Roughness R (ft) / D_{84} (ft)		R / D_{84} (ft / ft)
Drainage Area		DA (mi^2)	Shear Velocity $u^* = (gRS)^{½}$		u* (ft / sec)

ESTIMATION METHODS	Bankfull VELOCITY		Bankfull DISCHARGE	
1. Friction Factor / Relative Roughness $\bar{u} = [\,2.83 + 5.66 * Log\{R / D_{84}\}\,]\,u^*$		ft / sec		cfs
2. Roughness Coefficient: a) Manning's *n* from Friction Factor/Relative Roughness (Figs. 2-29, 2-30) $\bar{u} = 1.49*R^{2/3}*S^{1/2}/n$ $n =$		ft / sec		cfs
2. Roughness Coefficient: b) Manning's *n* from Stream Type (Fig. 2-31) $\bar{u} = 1.49*R^{2/3}*S^{1/2}/n$ $n =$		ft / sec		cfs
2. Roughness Coefficient: c) Manning's *n* from Jarrett (USGS): $\bar{u} = 1.49*R^{2/3}*S^{1/2}/n$ $n = 0.39*S^{0.38}*R^{-0.16}$ **Note:** This equation is applicable to **steep, step/pool, high boundary roughness, cobble- and boulder-dominated stream systems**; i.e., for Stream Types A1, A2, A3, B1, B2, B3, C2 & E3 $n =$		ft / sec		cfs
3. Other Methods (Hey, Darcy-Weisbach, Chezy C, etc.)		ft / sec		cfs
3. Other Methods (Hey, Darcy-Weisbach, Chezy C, etc.)		ft / sec		cfs
4. Continuity Equations: a) USGS Gage Data $\bar{u} = Q / A$ **Return Period for Bankfull Q** Q = ____ **year**		ft / sec		cfs
4. Continuity Equations: b) Regional Curves $\bar{u} = Q / A$		ft / sec		cfs

Protrusion Height Options for the D_{84} Term in the Relative Roughness Relation (R/D_{84}) – Estimation Method 1

Option 1.	For **sand-bed** channels: Measure 100 **"protrusion heights"** of sand dunes from the downstream side of feature to the top of feature. Substitute the D_{84} sand dune protrusion height in ft for the D_{84} term in method 1.
Option 2.	For **boulder-dominated** channels: Measure 100 **"protrusion heights"** of boulders on the sides from the bed elevation to the top of the rock on that side. Substitute the D_{84} boulder protrusion height in ft for the D_{84} term in method 1.
Option 3.	For **bedrock-dominated** channels: Measure 100 **"protrusion heights"** of rock separations, steps, joints or uplifted surfaces above channel bed elevation. Substitute the D_{84} bedrock protrusion height in ft for the D_{84} term in method 1.
Option 4.	For **log-influenced** channels: Measure **"protrusion heights"** proportionate to channel width of log diameters or the height of the log on upstream side if embedded. Substitute the D_{84} protrusion height in ft for the D_{84} term in method 1.

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FIGURE 4: SAMPLE STREAMBED MATERIAL SIZING

New Stream Channel Design (Culvert, Rock Ramp)

Using Corps of Engineers Equations - FHWA Circular on Development in the River System - Page 6.25.
FHWA NHI 01-004; River Engineering for Highway Encroachments, 2001
http://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=8&id=20

YELLOW ARE INPUTS

Safety Factor	**1.5**		
Stability Coefficient for Incipient Failure	0.3	(0.36 round rock, 0.3 angular rock)	
Vertical Velocity Distribution Coeff	1.00	(1.0 for straight channels)	
Blanket Thickness Coeff	1	(1xD100 or 1.5 or D50 max, whichever is greater)	
Local depth of flow	2.5	ft for 100 year event	
Unit Weight of water	62.4	lb/ft^3	assumed
Unit weight of rock	165	lb/ft^3	assumed
Local depth-average velocity	9.8	ft/s from 100-year event avg. velocity in pipe	
Side Slope correction factor	1		
Gravitational Acceleration	32.2	ft/s^2	
D85/D15	3.8	(1.7-5.2)	
D50/D30	2		

Note: This method is based on the minimum D30 size

Riprap Design Method - Selecting Proper Gradation, Page 131.
Design Hydrology and Sedimentology for Small Catchments, Haan, Barfield and Hayes, 1981.

D15	0.5	ft	7.0	inches	
D30	0.8	ft	10.0	inches	
D50	1.2	ft	15.0	inches	Coarse
D85	2.0	ft	24.0	inches	
D100	2.4	ft	29.0	inches	

Using D50 size, used FHWA circular for Rip Rap design to spec out D100, D85 and D15.
D100 = 2.0D50

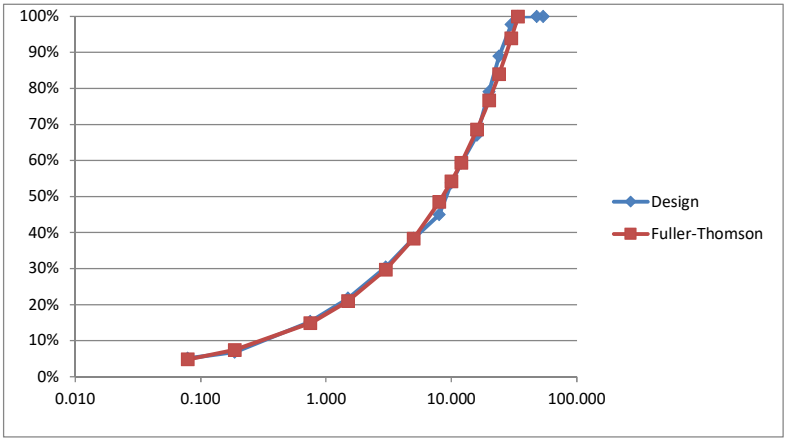
Fuller-Thompson Estimating for Maximum Density:
Method Adapted from US Forest Service Stream Simulation Guidelines

D100 (inches) 34 input designed D100 from table below
D30 10.0 Stability (D30) OK
D30 Req'd 10.0

YELLOW ARE INPUTS

		COARSE MATERIAL					FINES
		Custom	Type IV Rip Rap	Type III Rip	Type II Rip R	Type I Rip Rap	FA
	relative %	0	0	0.22	0.2200	0.2200	0.3400
Size (inches)	Sieve Size	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing
54	54"	0.00	1.00	1.00	1.00	1.00	1.00
48	48"	0.00	0.90	1.00	1.00	1.00	1.00
34	34"	0.00	0.50	1.00	1.00	1.00	1.00
30	30"	0.00	0.35	0.90	1.00	1.00	1.00
24	24"	0.00	0.25	0.50	1.00	1.00	1.00
20	20"	0.00	0.15	0.15	0.90	1.00	1.00
16	16"	0.00	0.00	0.00	0.50	1.00	1.00
12	12"	0.00	0.00	0.00	0.15	1.00	1.00
10	10"	0.00	0.00	0.00	0.00	0.90	1.00
8	8"	0.00	0.00	0.00	0.00	0.50	1.000
5	5"	0.00	0.00	0.00	0.00	0.20	1.000
3	3"	0.00	0.00	0.00	0.00	0.10	0.830
1.5	1.5"	0.00	0.00	0.00	0.00	0.00	0.640
0.75	.75"	0.00	0.00	0.00	0.00	0.00	0.450
0.187	#4	0.00	0.00	0.00	0.00	0.00	0.200
0.0787	#10 Sand	0.00	0.00	0.00	0.00	0.00	0.150

Gradation values should be within +/-5% of this gradation (Rice)
AND we need to have at least 5% sand size (#10) or smaller (Forest Service) in the combined gradation



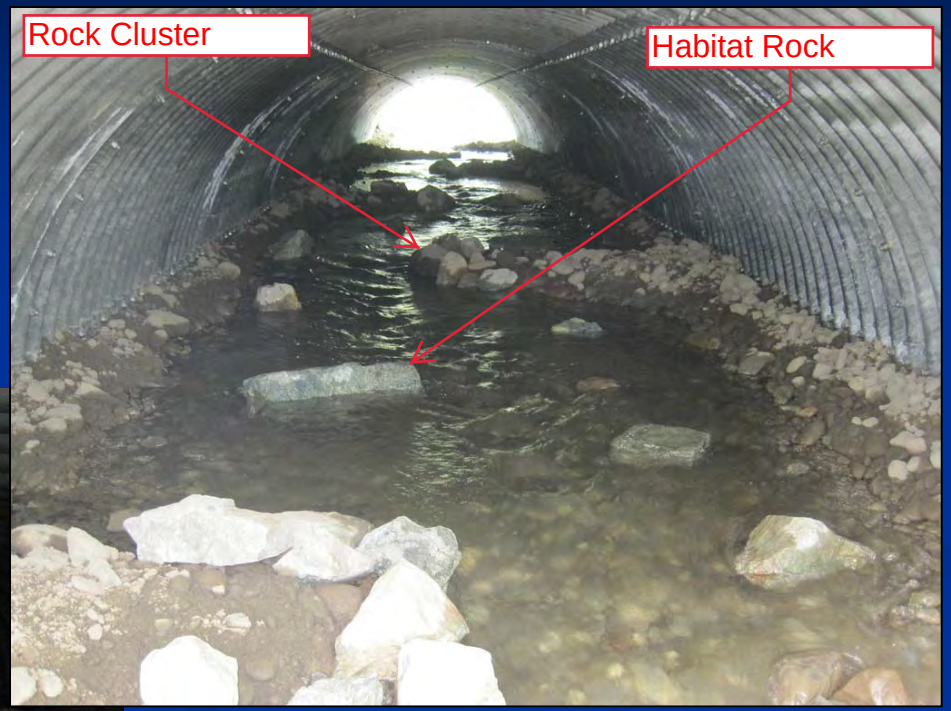
DATA for Graph & Fuller-Thomson Eqn

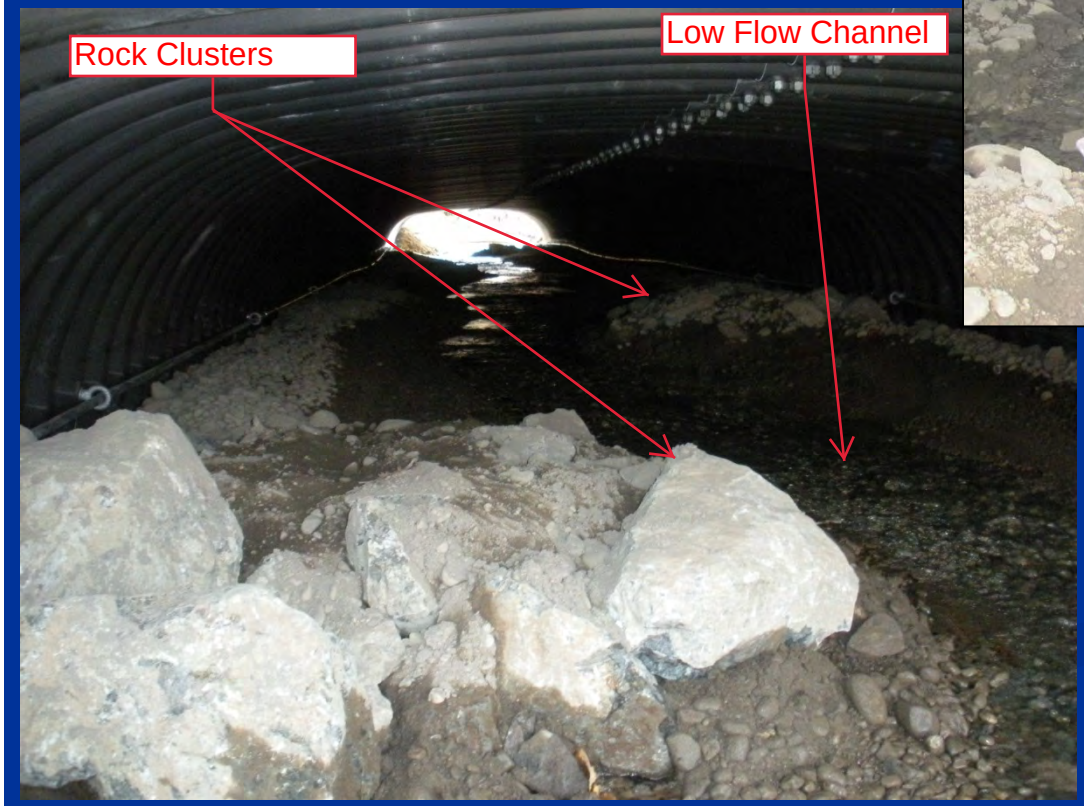
Size (in)	Combined % pa	F-T equation
54.000	100%	126%
48.000	100%	119%
34.000	100%	100%
30.000	98%	94%
24.000	89%	84%
20.000	79%	77%
16.000	67%	69%
12.000	59%	59%
10.000	54%	54%
8.000	45%	49%
5.000	38%	38%
3.000	30%	30%
1.500	22%	21%
0.750	15%	15%
0.187	7%	7%
0.079	5%	5%

FIGURE 5: ROCK CLUSTERS

Rock Clusters as Low Flow Barbs

Crocker Creek, Mat-Su





Diamond Hook Road

Little Campbell Creek, Anchorage

FIGURE 6: ROCK CLUSTER SPACING GUIDANCE

Rock Clusters

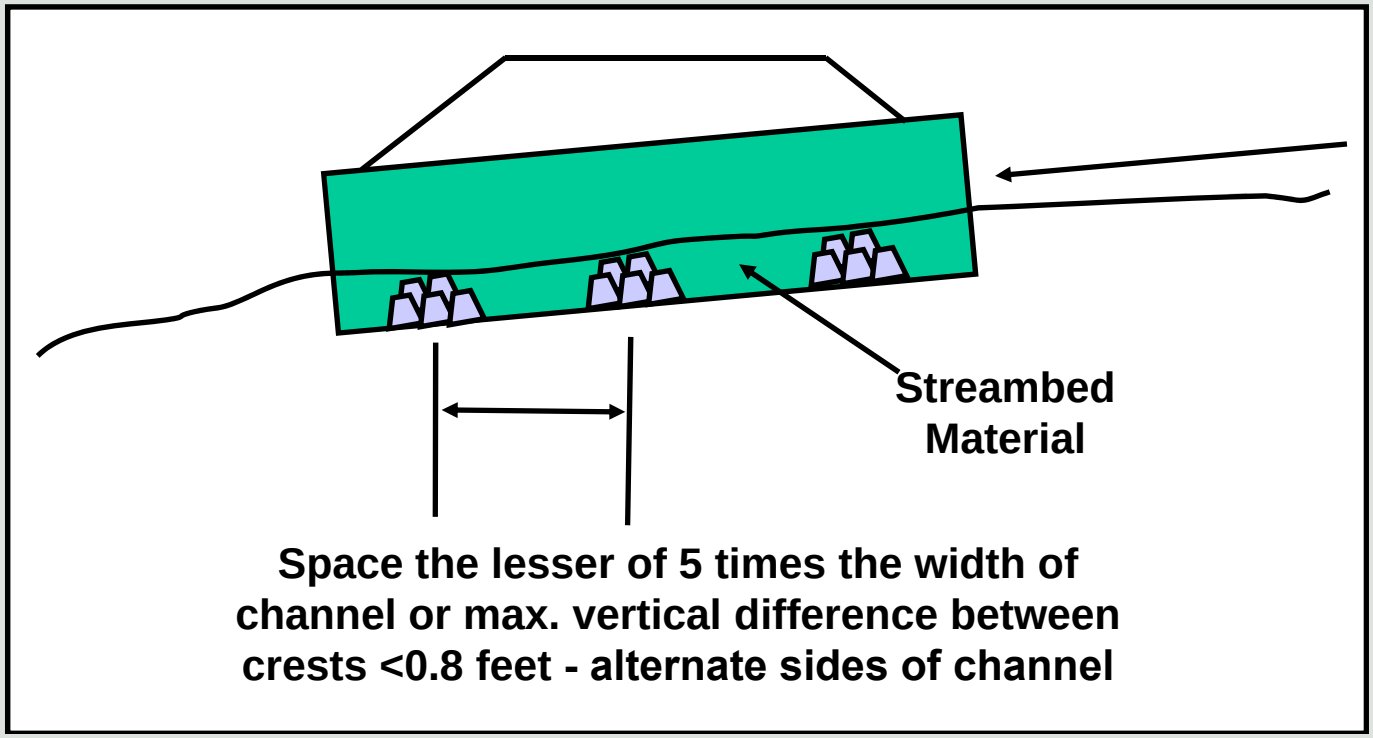


FIGURE 7: ROCK CLUSTER EXAMPLE - BANKFULL WIDTH CULVERT

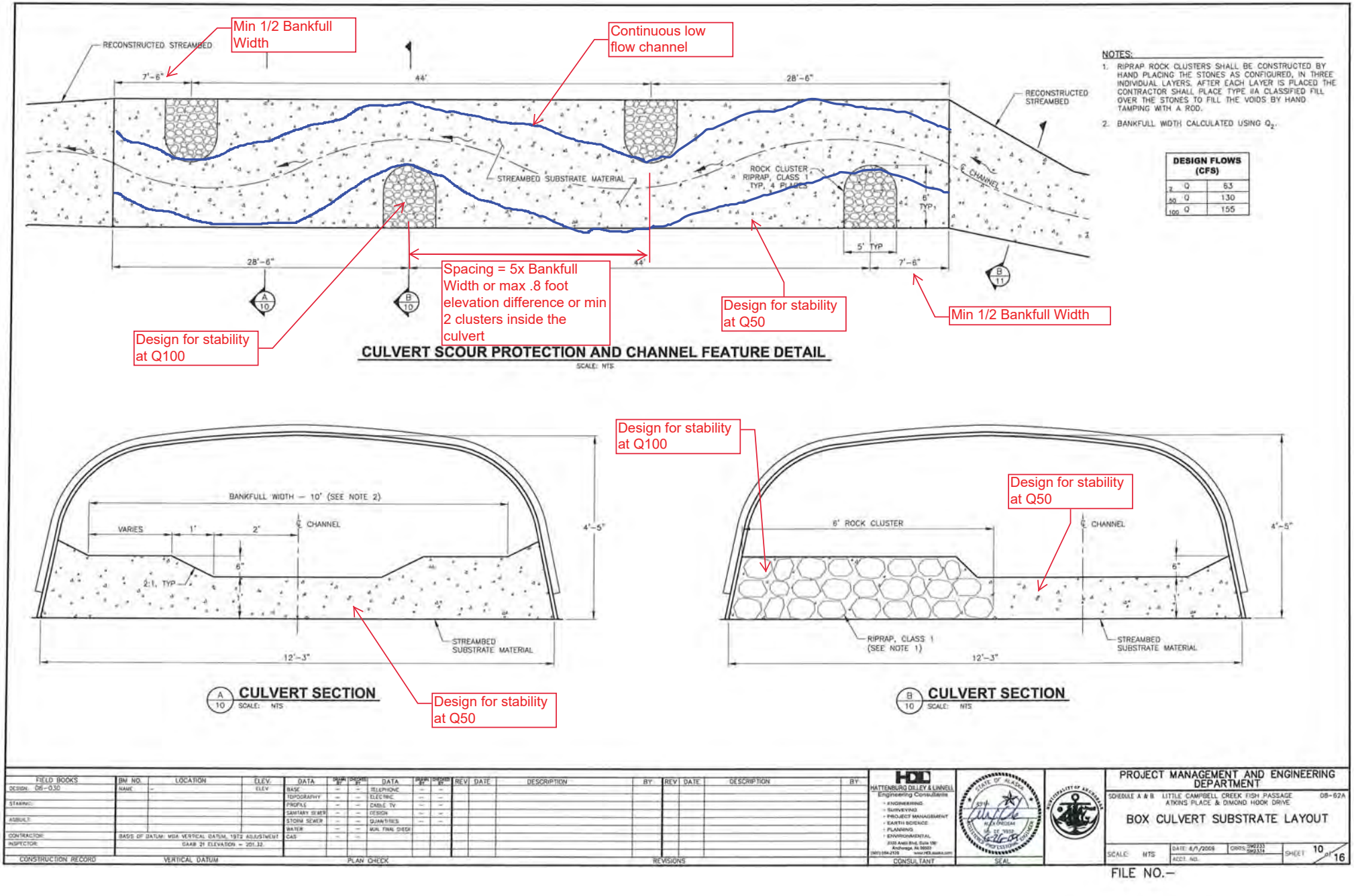


FIGURE 8: FLOODPLAIN CULVERTS

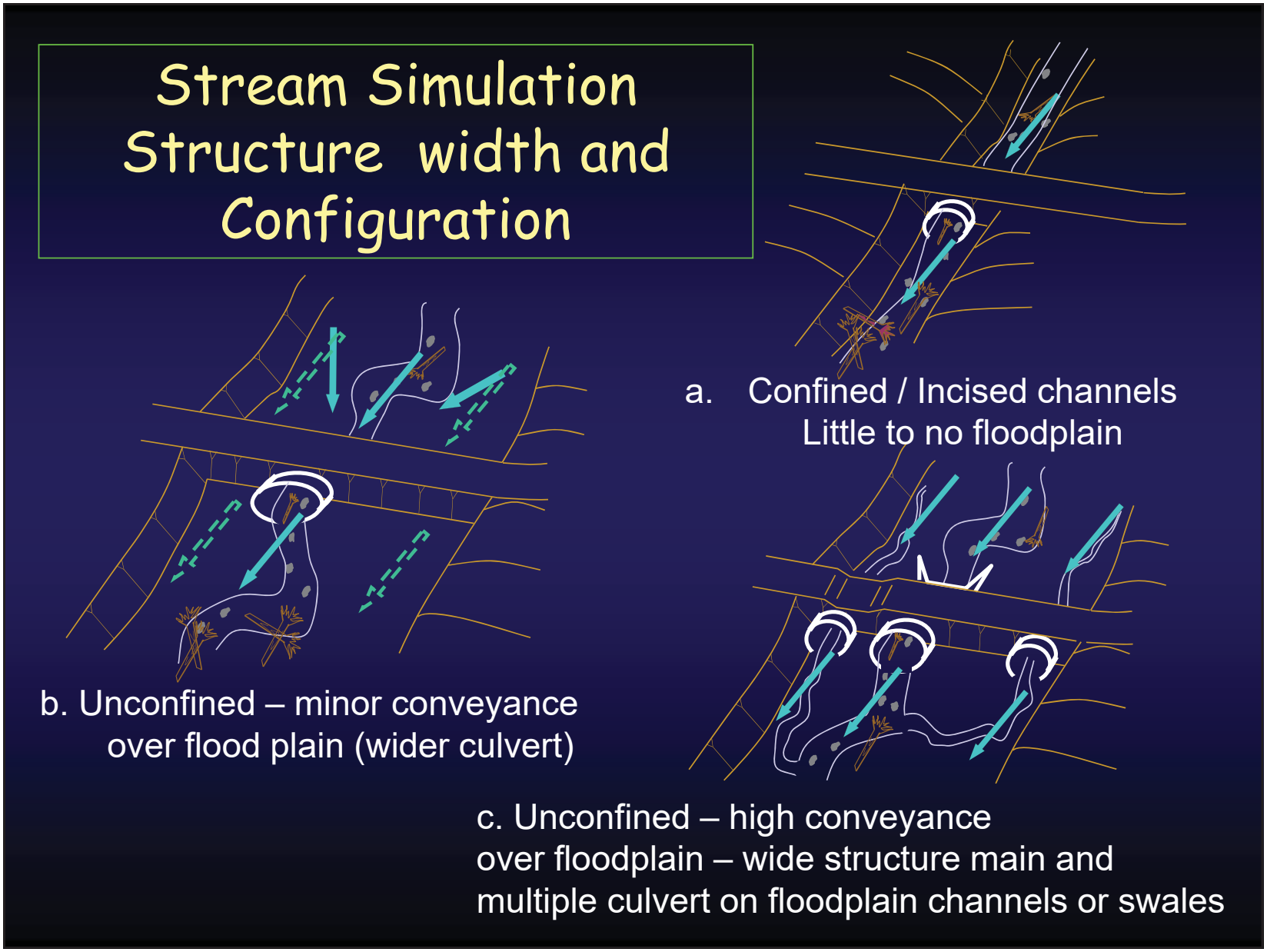


FIGURE 9: FLOODPLAIN CULVERT GUIDANCE

Unconfined channel - Requirements

- Hydraulic analysis to determine floodplain conveyance (high or low) Use common sense depending on site conditions and risk as to the level of analysis required
- Check mobility / stability against the reference reach main channel only!
- Add floodplain culverts in streams with high floodplain conveyance or with defined channels on floodplains (Rule of thumb is: when entrenchment ratio is 2 or greater be concerned with floodplain conveyance confirm with hydraulic model)
- Add road dips and armor embankment
- If channel is backwatered during high water, HW/D clearance may be an issue

!!!!GO TO THE SITE DURING FLOODING TO SEE CONVEYANCE ON THE FLOODPLAIN!!!!!

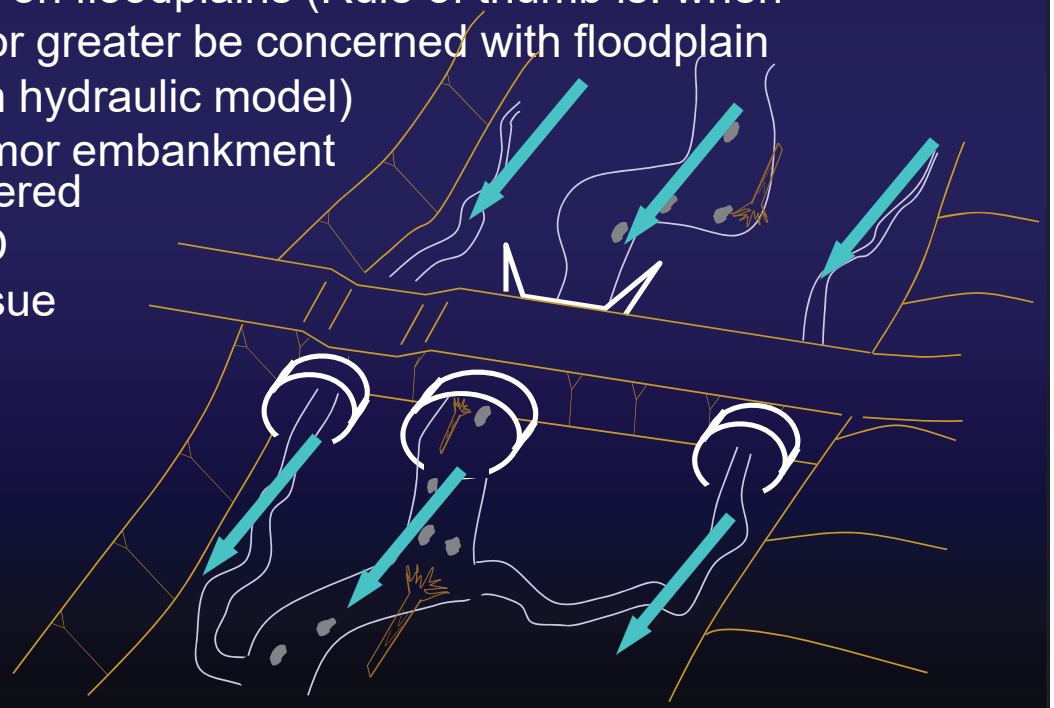


FIGURE 10: ROSGEN STREAM TYPES

Figure 11–2 Broad-level stream classification delineation showing longitudinal, cross-sectional, and plan views of major stream types

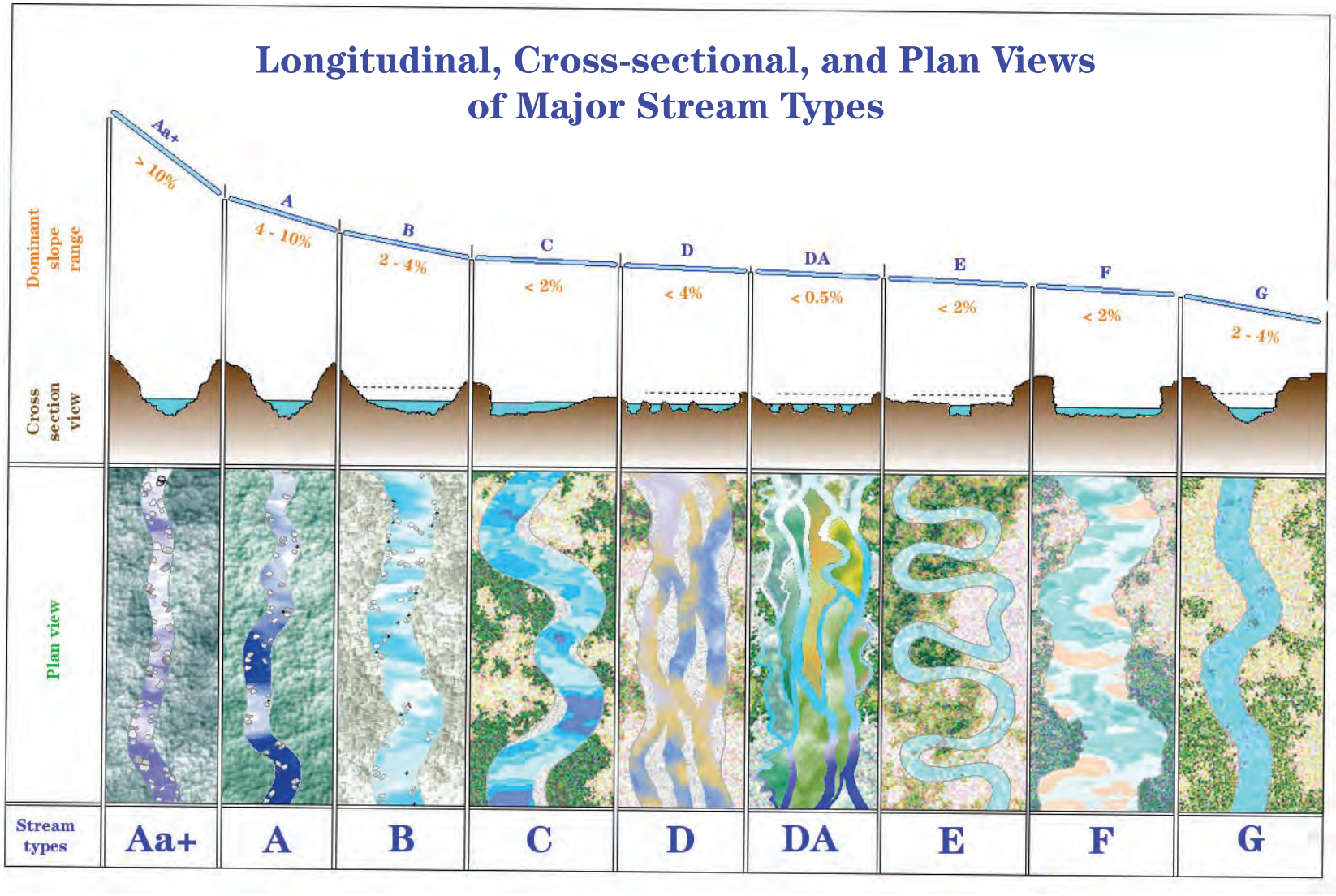
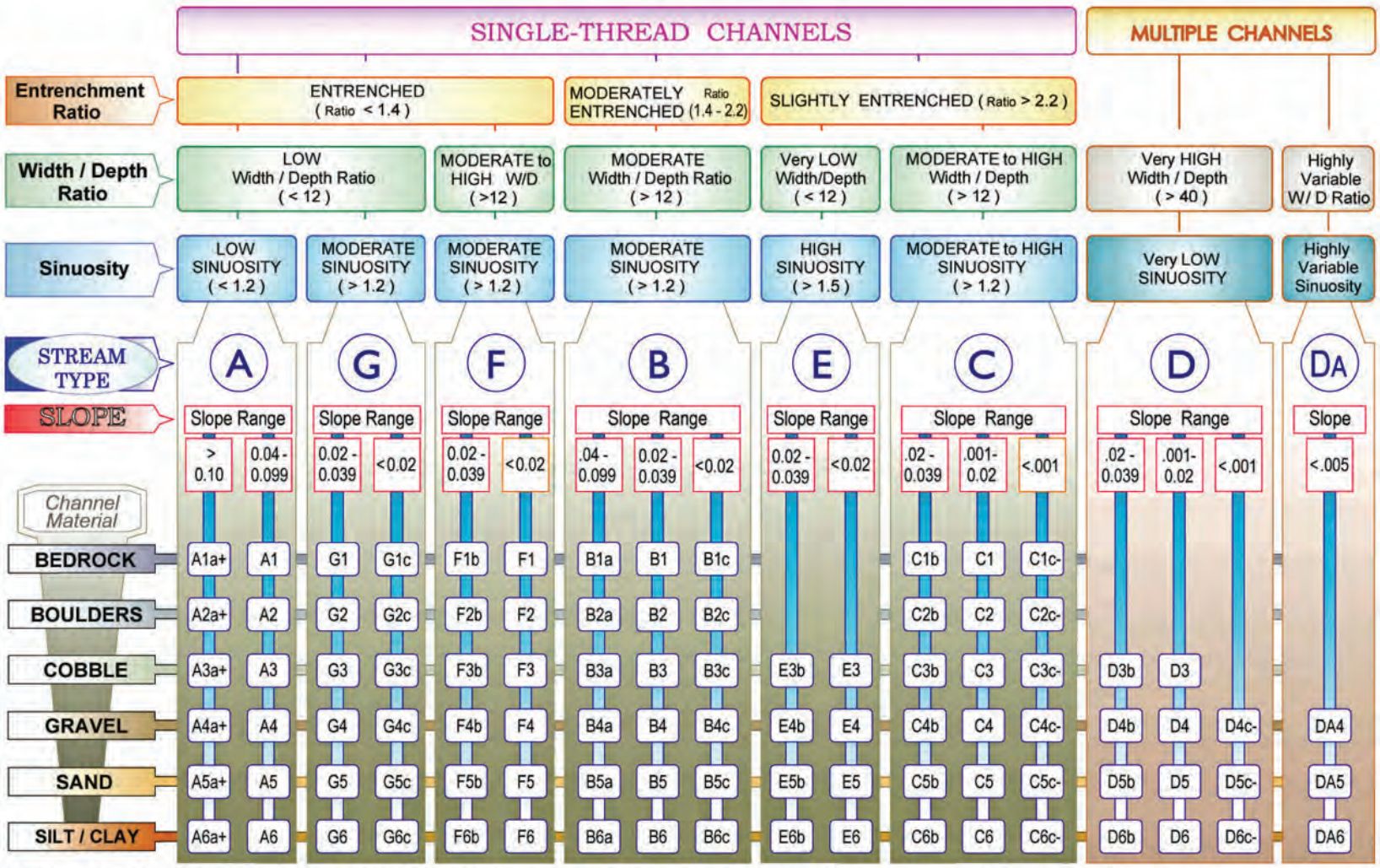


FIGURE 11: ROSGEN CLASSIFICATION KEY

Figure 11–3 Classification key for natural rivers



KEY to the *ROSGEN* CLASSIFICATION of NATURAL RIVERS. As a function of the *"continuum of physical variables"* within stream reaches, values of ***Entrenchment*** and ***Sinuosity*** ratios can vary by +/- 0.2 units; while values for ***Width / Depth*** ratios can vary by +/- 2.0 units.

FIGURE 12: DESCRIPTIONS OF ROSGEN STREAMS TYPES

Table 11–2 General stream type descriptions and delineative criteria for broad-level classification (level 1)

Stream type	General description	Entrenchment ratio	W/d ratio	Sinuosity	Slope	Landform/ soils/features
Aa+	Very steep, deeply entrenched, debris transport, torrent streams	<1.4	<12	1.0 to 1.1	>.10	Very high relief. Erosional, bedrock, or depositional features; debris flow potential. Deeply entrenched streams. Vertical steps with deep scour pools; waterfalls
A	Steep, entrenched, cascading, step-pool streams. High energy/ debris transport associated with depositional soils. Very stable if bedrock or boulder-dominated channel	<1.4	<12	1.0 to 1.2	.04 to .10	High relief. Erosional or depositional and bedrock forms. Entrenched and confined streams with cascading reaches. Frequently spaced, deep pools in associated step-pool bed morphology
B	Moderately entrenched, moderate gradient, riffle dominated channel with infrequently spaced pools. Very stable plan and profile. Stable banks	1.4 to 2.2	>12	>1.2	.02 to .039	Moderate relief, colluvial deposition and/or structural. Moderate entrenchment and width-to-depth ratio. Narrow, gently sloping valleys. Rapids predominate with scour pools
C	Low gradient, meandering, point bar, riffle/pool, alluvial channels with broad, well-defined flood plains	>2.2	>12	>1.2	<.02	Broad valleys with terraces, in association with flood plains, alluvial soils. Slightly entrenched with well-defined meandering channels. Riffle/ pool bed morphology
D	Braided channel with longitudinal and transverse bars. Very wide channel with eroding banks	n/a	>40	n/a	<.04	Broad valleys with alluvium, steeper fans. Glacial debris and depositional features. Active lateral adjustment with abundance of sediment supply. Convergence/divergence bed features, aggradational processes, high bed load and bank erosion
DA	Anastomizing (multiple channels) narrow and deep with extensive, well-vegetated flood plains and associated wetlands. Very gentle relief with highly variable sinuosities and width-to-depth ratios. Very stable streambanks	>2.2	Highly variable	Highly variable	<.005	Broad, low-gradient valleys with fine alluvium and/or lacustrine soils. Anastomized (multiple channel) geologic control creating fine deposition with well-vegetated bars that are laterally stable with broad wetland flood plains. Very low bed-load, high wash load sediment
E	Low gradient, meandering riffle/pool stream with low width-to-depth ratio and little deposition. Very efficient and stable. High meander width ratio	>2.2	<12	>1.5	<.02	Broad valley/meadows. Alluvial materials with flood plains. Highly sinuous with stable, well-vegetated banks. Riffle/pool morphology with very low width-to-depth ratios
F	Entrenched meandering riffle/pool channel on low gradients with high width-to-depth ratio	<1.4	>12	>1.2	<.02	Entrenched in highly weathered material. Gentle gradients with a high width-to-depth ratio. Meandering, laterally unstable with high bank erosion rates. Riffle/pool morphology
G	Entrenched gully step-pool and low width-to-depth ratio on moderate gradients	<1.4	<12	>1.2	.02 to .039	Gullies, step-pool morphology with moderate slopes and low width-to-depth ratio. Narrow valleys, or deeply incised in alluvial or colluvial materials (fans or deltas). Unstable, with grade control problems and high bank erosion rates

FIGURE 13: REFERENCE REACH DATA SUMMARY FORM

Table 11–3 Reference reach summary data form

River Reach Summary Data

Channel dimension

Mean riffle depth (d_{bkf})		ft	Riffle width (W_{bkf})		ft	Riffle area (A_{bkf})		ft^2
Mean pool depth (d_{bkfp})		ft	Pool width (W_{bkfp})		ft	Pool area (A_{bkfp})		ft^2
Mean pool depth/mean riffle depth		d_{bkfp}/ (d_{bkf})	Pool width/riffle width		W_{bkfp} /W_{bkf}	Pool area/riffle area		A_{bkfp}/ A_{bkf}
Max riffle depth (d_{mbkf})		ft	Max pool depth (d_{mbkfp})		ft	Max riffle depth/mean riffle depth		
Max pool depth/mean riffle depth						Point bar slope		
Streamflow: estimated mean velocity at bankfull stage (u_{bkf})					ft/s	Estimation method		
Streamflow: estimated discharge at bankfull stage (Q_{bkf})					ft^3/s	Drainage area		mi^2

Channel pattern

Geometry	Mean	Min.	Max.		Dimensionless geometry ratios	Mean	Min.	Max.
Meander length (Lm)				ft	Meander length ratio (Lm/W_{bkf})			
Radius of curvature (Rc)				ft	Radius of curvature/riffle width (Rc/W_{bkf})			
Belt width (W_{blt})				ft	Meander width ratio (W_{blt}/W_{bkf})			
Individual pool length				ft	Pool length/riffle width			
Pool to pool spacing				ft	Pool to pool spacing/riffle width			

Channel profile

Valley slope (VS)			ft/ft	Average water surface slope (S)			ft/ft	Sinuosity (VS/S)		
Stream length (SL)			ft	Valley length (VL)			ft	Sinuosity (SL/VL)		
Low bank height (LBH)	start		ft	Max riffle depth	start		ft	Bank height ratio (LBH/max riffle depth)	start	
	end		ft		end		ft		end	

Facet slopes	Mean	Min.	Max.		Dimensionless geometry ratios	Mean	Min.	Max.
Riffle slope (S_{rif})				ft/ft	Riffle slope/average water surface slope (S_{rif}/S)			
Run slope (S_{run})				ft/ft	Run slope/average water surface slope (S_{run}/S)			
Pool slope (S_p)				ft/ft	Pool slope/average water surface slope (S_p/S)			
Glide slope (S_g)				ft/ft	Glide slope/average water surface slope (S_g/S)			

Feature midpoint[a/]	Mean	Min.	Max.		Dimensionless geometry ratios	Mean	Min.	Max.
Riffle depth (d_{rif})				ft	Riffle depth/mean riffle depth (d_{rif}/d_{bkf})			
Run depth (d_{run})				ft	Run depth/mean riffle depth (d_{run}/d_{bkf})			
Pool depth (d_p)				ft	Pool depth/mean riffle depth (d_p/d_{bkf})			
Glide depth (d_g)				ft	Glide depth/mean riffle depth (d_g/d_{bkf})			

Channel materials

Geometry		Reach[b/]	Riffle[c/]	Bar		Reach[b/]	Riffle[c/]	Bar	
% Silt/clay					D_{16}				mm
% Sand					D_{35}				mm
% Gravel					D_{50}				mm
% Cobble					D_{84}				mm
% Boulder					D_{95}				mm
% Bedrock					D_{100}				mm

a/ Minimum, maximum, mean depths are the average midpoint values except pools which are taken at deepest part of pool
b/ Composite sample of riffles and pools within the designated reach
c/ Active bed of a riffle

APPENDIX C

Riparian Connectivity and Stream Health

U.S. Fish & Wildlife Service

RIPARIAN CONNECTIVITY AND STREAM HEALTH

It is the USFWS mission to work with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Service strives to maintain riparian connectivity and the Service's Conservation Planning Assistance (CPA) Branch works with project sponsors to identify project alternatives that avoid and minimize impacts to aquatic and riparian habitats.

Beyond Fish Passage: A healthy and productive stream provides a variety of habitats for fish and other aquatic life, as well as riparian habitat and movement corridors for terrestrial wildlife. The connectivity of habitats within a watershed sustains fish and wildlife populations.

Moose cow and calf using riparian corridor. Photo: USFWS

Brown bear using riparian corridor, Southwest Alaska Photo: USFWS

Fish Creek's healthy riparian habitat supports five species of Pacific salmon as well as other anadromous and resident species. Photo: USFWS

The four types of stream connectivity:

Longitudinal Connectivity is the linear connectivity between the upstream and downstream sections of a river. Structures within the floodplain or that cross the stream (e.g., roads) can interrupt longitudinal connectivity.

Vertical Connectivity consists of the interaction between surface and groundwater and includes flow through the hyporheic zone (mixing zone between surface and groundwater) and up- and down-welling through the stream bed.

Lateral Connectivity refers to the connectivity of the stream with its floodplain. Floodplain width may be narrow at a stream's headwaters and wider in downstream reaches due to more active channel meanders and larger floods. Channel incision due to channel straightening or increased discharge disconnects the channel from its floodplain, resulting in increased flood damage and the loss of floodplain habitats.

Temporal Connectivity refers to the physical, chemical, and biological interactions over time, during multi-year, annual and seasonal timeframes. Alterations to a stream's flow can isolate portions of the channel or associated habitats (e.g., side channels, oxbows), severing temporal connectivity.

Stream-floodplain-riparian corridor Donlin Creek area. Photo: USFWS

Riparian Connectivity, the key to stream health: Aquatic and riparian habitats are established and maintained by riparian and floodplain processes such as the transport of sediment and bed material, the conveyance of debris and flood flows, and the assimilation of nutrient inputs from the watershed. Nutrient inputs include marine derived nutrients from anadromous fish such as salmon, eulachon and some lamprey species. Full functioning of these riparian and floodplain processes requires connectivity from a stream's headwaters to its mouth.

Fluvial debris and sediment transport, McNeil River State Game Refuge. Photo: ADFG

Bridge and Culvert Designs: Stream crossing design criteria should focus on protecting stream health by maintaining riparian and floodplain processes. The USFWS supports use of design criteria for stream crossings that maintain normative physical processes within the stream-floodplain-riparian corridor by: **1)** promoting natural sediment transport patterns, **2)** providing unaltered fluvial debris movement, and **3)** maintaining or restoring functional continuity and connectivity of the stream-floodplain-riparian corridor.

Spawning sockeye pair, (Onchorynchus nerka) Southwest Alaska Photo:USFWS

Avoidance and Minimization: All crossings should consist of a bridge or culvert that spans the floodplain, provides for long-term dynamic channel stability, retains existing spawning habitats, maintains food (benthic invertebrate) production, and minimizes risk of failure. All crossing designs should be based on site-specific information such as: estimates of peak discharge, flow velocities and patterns; channel stability; sediment and bed load transport; flooding regime (50-year to 100-year flood frequency and magnitude); cross-section profiles of channel morphology and water surface elevations.

Avoiding a fragmented landscape: Riparian connectivity should be considered when planning or evaluating projects that could affect a stream's channel, floodplain, or riparian corridor. Land use activities that don't maintain riparian connectivity have the potential to fragment and alter habitats beyond their capacity to function ecologically.

Pacific lamprey (Lampetra tridentata), Rainbow Lake, Mat-Su Borough. Photo: EPA

For more information contact:
U.S. Fish & Wildlife Service
Anchorage Fish and Wildlife Conservation Office
4700 BLM Road
Anchorage, AK 99507
(907) 271-2888
http://alaska.fws.gov/fisheries/fieldoffice/anchorage/environmental.htm

U.S. Fish & Wildlife Service
1 800/344/WILD
http://www.fws.gov

December 2017

From:	Hogan, Melissa J (FHWA)
To:	Heather A. Campfield
Cc:	Johnson, Reuben (FHWA); Gray Rand
Subject:	FW: Anton Larsen Bay Road Extension: ADEC CSP response
Date:	Friday, April 05, 2019 3:33:58 PM

Additional project comment below…

From: Hogan, Melissa J (FHWA)
Sent: Friday, April 05, 2019 4:32 PM
To: 'Lidren, Grant M (DEC)' <grant.lidren@alaska.gov>
Subject: RE: Anton Larsen Bay Road Extension: ADEC CSP response

Dear Mr. Lidren,

Thank you for this helpful information!

Sincerely,
Melissa

Melissa J. Hogan
Environmental Specialist
FHWA Western Federal Lands
610 East Fifth Street
Vancouver, WA 98661

360-619-7735

From: Lidren, Grant M (DEC) [mailto:grant.lidren@alaska.gov]
Sent: Thursday, March 28, 2019 5:06 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Subject: Anton Larsen Bay Road Extension: ADEC CSP response

Melissa, I received your letter regarding the Anton Larsen Bay Road Extension on March 22, 2019. The letter discusses constructing a 2-mile gravel road at the end of the existing road as well as constructing a parking area, boat launch ramp and float.

Based on my limited review, there are no known contaminated sites adjacent to the construction project. Therefore, I have no objections to the project. However, (and as stated in your letter) if contamination is encountered, ADEC must be contacted.

Thanks, Grant

Grant Lidren
Environmental Program Specialist – State Sites Coordinator
Alaska Department of Environmental Conservation
Contaminated Sites Program
(907) 269-8685

THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Natural Resources

Division of Parks and Outdoor Recreation
550 West 7th Avenue, Suite 1380
Anchorage, AK 99501-3561
Main: 907.269.8694

March 26, 2019

Scott Smithline, Environmental Manager
Federal Highway Administration
Western Federal Lands Highway Division
610 E. Fifth Street
Vancouver, WA 98661

Re: HFL-17, Project # AK TR OUZI 2017 (1)
Anton Larsen Bay Road Extension

Dear Mr. Smithline:

Thank you for the opportunity to review the proposed plans to extend Anton Larsen Bay Road and develop a parking area and boat launch near Crag Point on Kodiak Island. In response to this inquiry, I have reviewed our listing of parks and outdoor recreation facilities which have been assisted with grants from the Land and Water Conservation Fund (LWCF).

Our records show that since 1972 the City of Kodiak has invested seven LWCF grants in four recreational properties, and the Kodiak Island Borough has used one grant in a separate site. As you may know, properties assisted with LWCF are dedicated to public outdoor recreation in perpetuity, in accordance with section 6(f) of the federal LWCF Act of 1965. However, none of these protected properties are in the area of your proposed project.

Therefore, based on information provided, I determine that no property protected under the Land and Water Conservation Act will be converted to other than public outdoor recreation use.

If future plans or development result in a significant change to this project, please contact me again to review the 6(f) determination. You may e-mail me at jean.ayers@alaska.gov or call 907-269-8694.

Sincerely,

Jean Ayers
LWCF Alternate State Liaison Officer

From:	Hogan, Melissa J (FHWA)
To:	Heather A. Campfield
Cc:	Gray Rand; Johnson, Reuben (FHWA)
Subject:	FW: NOAA point of contact
Date:	Tuesday, April 02, 2019 3:50:38 PM
Attachments:	scan199834.pdf

Hi Heather,

This is just FYI related to the scoping spreadsheet list of contacts. I received a call back from Matt Eagleton at NOAA and so I don't think we need to send another letter is lieu of this one sent back. Matt does not anticipate NMFS having any issues. He thinks the road is a good thing because several vehicles have tried to drive beyond the end of the road and gotten themselves stuck!

Thanks,
Melissa

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
610 EAST 5TH STREET
VANCOUVER, WA 98661-3801

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Gretchen Harrington
NOAA National Marine Fisheries Service
Alaska Regional Office
PO Box 21767
Juneau AK 99802

Person not known

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ATTEMPTED - NOT KNOWN
UNABLE TO FORWARD
BC: 98661389399 *2304-00792-19-45

~~99802-176767~~ ANK
98661>3893

Heather A. Campfield

From: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Sent: Friday, April 12, 2019 11:55 AM
To: Heather A. Campfield
Cc: Johnson, Reuben (FHWA); Gray Rand
Subject: FW: Anton Larsen Bay Road Extension, AK TR OUZI 2017(1)

FYI – project comment & response below…

From: Hogan, Melissa J (FHWA)
Sent: Friday, April 12, 2019 12:54 PM
To: Rollins, Mark W (DNR) <mark.rollins@alaska.gov>
Cc: Johnson, Reuben (FHWA) <Reuben.Johnson@dot.gov>
Subject: RE: Anton Larsen Bay Road Extension, AK TR OUZI 2017(1)

Dear Mr. Rollins,

Thank you for taking the time to research and comment on this project!

Sincerely,
Melissa

Melissa J. Hogan
Environmental Specialist
FHWA Western Federal Lands
610 East Fifth Street
Vancouver, WA 98661

360-619-7735

From: Rollins, Mark W (DNR) [mailto:mark.rollins@alaska.gov]
Sent: Monday, April 08, 2019 4:46 PM
To: Hogan, Melissa J (FHWA) <melissa.j.hogan@dot.gov>
Cc: Johnson, Reuben (FHWA) <Reuben.Johnson@dot.gov>
Subject: Anton Larsen Bay Road Extension, AK TR OUZI 2017(1)

3130-1R WFLHD
RevComp ID# 2019-00352

Hi Melissa,
The Alaska State Historic Preservation Office (AK SHPO) received the subject project for review (dated March 19, 2019) on March 21, 2019. Following our review of the documentation provided, we recommend establishing the area of potential effects (APE). The APE, as defined at *36 CFR § 800.16 (d)*, should encompass the geographic area within which an undertaking may directly or indirectly affect historic properties. Following the establishment of the APE, varying levels of identification may be appropriate depending on the nature, scale, and scope of the proposed project. It appears that two surveys have been completed for the project based on the cultural resources section and references of the *Preliminary Environmental Research* document. As such, we look forward to receiving the results of the cultural resources surveys conducted by DOT&PF (2014 & 2018), as well as future consultation pursuant to Section 106 of the

National Historic Preservation Act. The AK SHPO has no additional information regarding cultural resources (historic, prehistoric, and archaeological sites, locations, remains, or objects) at this time for the subject project.

Thank you for sending a request for comments letter to our office. Please let me know if we can be of further assistance.
-Mark

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