Environmental Assessment

Seward Highway Mileposts 105–107, Windy Corner Improvements, 0A31034/Z566310000

A conversion of land protected under Section 6(f)(3) of the Land and Water Conservation Fund Act, Public Law 108-198.



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The Land and Water Conservation Fund (LWCF), Stateside Assistance grant program, provides funds to states, and through states to local agencies, for the acquisition and development of outdoor recreation resources. Lands that have received funding through LWCF are protected by Section 6(f)(3) of the Act unless a conversion is approved by the Secretary of the Interior as delegated by the National Park Service.

Table of Contents

SUMMARY I
INTRODUCTION 1
Background 1
Windy Corner Improvements Background 3
CHAPTER 1—PURPOSE AND NEED 5
CHAPTER 2—DESCRIPTION OF ALTERNATIVES 9
'No Action' Alternative 9
'Proposed Action' Alternative 9
Partial Conversion Alternative 15
Description of Conversion Parcels 16
Turnagain Arm Mudflats 16
Description of Replacement Parcel 19
Improved Recreational Utility 23
Reasonably Equivalent 23
Public Involvement 23
Other Alternatives 24
CHAPTER 3—AFFECTED ENVIRONMENT 27
Proposed Conversion Parcels 27
Geological Resources 27
Air Quality 27
Sound/Noise Impacts 27
Water Quality/Quantity 28
Stream Flow Characteristics 28
Marine/Estuarine 28
Floodplains/Wetlands/Other Waters of the U.S. 28
Land Use/Ownership Patterns/Property Values/Community Livability 29
Circulation/Transportation 29
Plant/Animals/Fish and State or Federal Listed or Proposed Species 30
Unique Ecosystems/World Heritage Sites/Old-Growth Forests/Et cetera 31
Unique or Important Wildlife/Wildlife Habitat 31
Unique or Important Fish Habitat 31

Invasive Species (Plant or Animal) 31
Recreation Resources 31
Accessibility for Populations with Disabilities 32
Overall Aesthetic/Special Characteristics/Features 35
Historical/Cultural Resources 35
Socioeconomics 36
Minority and Low-Income Populations 36
Energy Resources (geothermal, fossil fuels, et cetera) 36
Other Agency or Tribal Land Use Plans or Policies 36
Contamination/Hazardous Materials 36
Other Important Environmental Resources to Address 36
Proposed Replacement Parcel 37
Geological Resources 37
Air Quality 37
Sound/Noise Impacts 37
Water Quality/Quantity 37
Stream Flow Characteristics 37
Marine/Estuarine 37
Floodplains/Wetlands/Other Waters of the U.S. 37
Land Use/Ownership Patterns/Property Values/Community Livability 37
Circulation/Transportation 37
Plants/Animals/Fish and State or Federal Listed or Proposed Species 37
Unique Ecosystems/World Heritage Sites/Old-Growth Forests/Et cetera 38
Unique or Important Fish Habitat 38
Invasive Species (Plant or Animal) 38
Recreation Resources 38
Accessibility for Populations with Disabilities 38
Overall Aesthetic/Special Characteristics/Features 39
Historic/Cultural Resources 39
Socioeconomics 39
Minority and Low-Income Populations 39
Energy Resources (geothermal, fossil fuels, et cetera) 39
Other Agency or Tribal Land Use Plans or Policies 39

Contamination/Hazardous Materials 39
Other Important Environmental Resources to Address 39
CHAPTER 4—ENVIRONMENTAL IMPACTS 41
No Action Alternative 41
Proposed Conversion Parcels 41
Geological Resources 41
Air Quality 41
Sound/Noise Impacts 41
Water Quality/Quantity 42
Stream Flow Characteristics 42
Marine/Estuarine 42
Floodplains/Wetlands/Waters of the U.S. 42
Land Use/Ownership Patterns/Property Values/Community Livability 43
Circulation/Transportation 43
Plants/Animals/Fish and State or Federal Listed or Proposed Species 44
Unique Ecosystems/World Heritage Sites/Old-Growth Forests/Et cetera 47
Unique or Important Fish Habitat 47
Invasive Species (Plant or Animal) 48
Recreation Resources 48
Accessibility for Populations with Disabilities 49
Overall Aesthetic/Special Characteristics/Features 49
Historic/Cultural Resources 50
Socioeconomics 50
Minority and Low-Income Populations 50
Energy Resources (geothermal, fossil fuels, et cetera) 50
Other Agency or Tribal Land Use Plans or Policies 50
Contamination/Hazardous Materials 51
Other Important Environmental Resources to Address 51
Proposed Replacement Parcel 51
Geological Resources 51
Air Quality 51
Sound/Noise Impacts 52
Water Quality/Quantity 52

Stream Flow Characteristics 52
Marine/Estuarine 52
Floodplains/Wetlands/Other Waters of the U.S. 52
Land Use/Ownership Patterns/Property Values/Community Livability 53
Circulation/Transportation 53
Plants/Animals/Fish and Federal Listed or Proposed Species 53
Unique Ecosystems/Old-Growth Forests/Et cetera 54
Unique or Important Fish Habitat 54
Invasive Species (Plant or Animal) 54
Recreation Resources 54
Accessibility for Populations with Disabilities 55
Overall Aesthetic/Special Characteristics/Features 55
Historic/Cultural Resources 55
Socioeconomics 55
Minority and Low-Income Populations 55
Energy Resources (geothermal, fossil fuels, et cetera) 56
Other Agency or Tribal Land Use Plans or Policies 56
Contamination/Hazardous Materials 56
Other Important Environmental Resources to Address 56
CHAPTER 5—COORDINATION AND CONSULTATION 57
CHAPTER 6—REFERENCES 59

FIGURES

Figure ES-1: LWCF Conversion and Replacement Parcels III
Figure 1: Chugach State Park Location 2
Figure 2: Seward Highway Crash Levels 6
Figure 3: Existing Conditions, Seward Highway at Windy Corner 11
Figure 4: Existing Conditions, Seward Highway at Windy Corner 12
Figure 5: Converted Sites—Mudflat Parcels 13
Figure 6: Converted Sites—Material Sites Parcels 14
Figure 7: Mudflats Section 6(f) Parcels Remaining After Conversion 17
Figure 8: Proposed Replacement Parcel 21
Figure 9: Recreational Facilities Milepost 104 to Milepost 109 33

TABLES

Table S-1. Summary of Land and Water Conservation Fund (LWCF) Conversion Acreage I
Table 1: Windy Corner Material Source Comparison 8
Table 2: Third-Party Material Source Cost Summary 8
Table 3. Summary of LWCF Conversion Acreage 9
Table 4. Right-of-Way Acquisition and Fill Summary 10
Table 5: Cultural Resources in the Vicinity of the Conversion Parcels 35
Table 6: Potential Effects on Cook Inlet Beluga Whales 45
Table 7: The Proposed Impulsive (160 dB) and Continuous Noise (120 dB) Activities in Turnagain Arm and the Required Safety Zones 46
Table 8: Public Outreach 57
Table 9: Environmental Assessment Preparers 58

PHOTOGRAPHS

Photograph 1: Seward Highway Transportation Corridor 2
Photograph 2: Alaska Railroad along Turnagain Arm 3
Photograph 3: Seward Highway Summer Traffic 5
Photograph 4: Sheep on Cliffs above Windy Corner 6
Photograph 5: Sightseers Standing on Highway Shoulder 7
Photograph 6: Cars on Shoulder for Wildlife Viewing 9
Photograph 7: Turnagain Arm Mudflats 16
Photograph 8: Upland Vegetation 16
Photograph 9: Rocky Outcroppings along Seward Highway 27
Photograph 10: Trailhead Facilities along Turnagain Arm 32
Photograph 11: Vegetation on South Side of Seward Highway 43

APPENDICES

Appendix A ..... Land and Water Conservation Fund Section 6(f) Maps
Appendix B ..... 2001 Memorandum of Agreement
Appendix C ..... Appraisals
Appendix D ..... Environmental Screening Forms
Appendix E ..... Section 106 Consultation
Appendix F ..... Windy Corner Safety Improvements Overview
Appendix G ..... Biological Assessment
Appendix H ..... Essential Fish Habitat Consultation
Appendix I ..... Public Involvement Materials

ACRONYMS

AAC ..... Alaska Administrative Code
AEC ..... Alaska Engineering Commission
ADA ..... Americans with Disabilities Act
ADF&G ..... Alaska Department of Fish and Game
AKR ..... National Marine Fisheries Service Alaska Regional Office
APE ..... Area of Potential Effect
ARRC ..... Alaska Railroad Corporation
AHRS ..... Alaska Heritage Resource Survey
AS ..... Alaska Statute
BMP ..... best management practice
CAP ..... Chugach Access Plan
CE ..... Categorical Exclusion
CO ..... Carbon monoxide
CSP ..... Chugach State Park
dB ..... decibel(s)
DEC ..... State of Alaska Department of Environmental Conservation
DNR ..... State of Alaska Department of Natural Resources
DPOR ..... DNR, Division of Parks & Outdoor Recreation
DOE ..... Determination of Eligibility
DOT&PF ..... State of Alaska Department of Transportation and Public Facilities
EA ..... Environmental Assessment
EFH ..... Essential Fish Habitat
FHWA ..... Federal Highway Administration
LOC ..... Letter of Concurrence
LWCF ..... Land and Water Conservation Fund
mph ..... miles per hour
MOA ..... Memorandum of Agreement
MP ..... Milepost
MS ..... Material Site
NMFS ..... National Marine Fisheries Service
NOAA ..... National Oceanic and Atmospheric Administration
NPS ..... National Park Service
NRHP ..... National Register of Historic Places
PSO ..... Protected Species Observer
ROW ..... right-of-way
RV ..... Recreational Vehicle
SCORP ..... Statewide Compressive Outdoor Recreation Plan
SWPPP ..... Stormwater Pollution Prevention Plan
TACP ..... Turnagain Arm Comprehensive Plan
TAG ..... Technical Advisory Group
U.S. ..... United States
USACE ..... U.S. Army Corps of Engineers
USCG ..... U.S. Coast Guard
USFWS ..... U.S. Fish and Wildlife Service
VE ..... Value Engineering

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SUMMARY

The State of Alaska Department of Transportation and Public Facilities, in cooperation with the Federal Highway Administration, is proposing to reconstruct the Seward Highway between Milepost 105 and Milepost 107 (Windy Corner) to realign and construct safety improvements. This portion of the highway is located within a right-of-way within the boundary of Chugach State Park. Much of Chugach State Park is protected under Section 6(f)(3) of the Land and Water Conservation Fund Act, Public Law 108-198.

The State of Alaska Department of Transportation and Public Facilities proposes to remove federal protection from a total of 39.56 acres of Chugach State Park property by converting it from public recreation lands to transportation use (Table S-1).

Table S-1. Summary of Land and Water Conservation Fund (LWCF) Conversion Acreage

Type of Use	Type of Land	Description of Use	Size (Acres)
Material Extraction[1]	LWCF lands (Uplands)	Extract material from MP 109	19.6
Material Extraction[1]	LWCF lands (Uplands)	Extract material from MP 104	15.8
Subtotal for Material Extraction[1]	LWCF lands (Uplands)		35.4
Transportation Right-of-Way (ROW) Acquisition	LWCF (Mudflats)	Fill Footprint	3.97
Conversion (not ROW) [1]	LWCF (Mudflats)	Remnant LWCF lands	0.19
Subtotal	LWCF Mudflats		4.16
TOTAL LWCF Conversion	**LWCF Uplands & Mudflats**		**39.56**

[1] Material sites and remnant LWCF mudflats will remain in Department of Natural Resource Division of Parks & Outdoor Recreation ownership.

The conversion is needed to provide right-of-way and material sites for construction of highway improvements on this section of the Seward Highway. The Seward Highway from Anchorage to Girdwood is one of five designated safety corridors in Alaska, due to its elevated rate of high-severity (e.g., fatal/major) injury motor vehicle crashes. The stretch of highway proposed for improvements also suffers poor level of service, due to a combination of increased traffic flow, topography and geometry, and local attractions causing differential speeds among drivers.

The purpose of this Environmental Assessment is to evaluate the effects of removal of Federal protection over these 39.56 acres to allow for the proposed highway improvements, including proposed mitigation. The document provides descriptive information to support the National Park Service review and decision and identifies potential environmental consequences associated with the proposed conversion of federally-protected recreational parkland to a transportation use. It evaluates the ‘No Action’ Alternative and ‘Proposed Action’ Alternative, allowing the affected

public to understand the context of the proposed conversion prior to the National Park Service decision.

The proposed highway safety improvements project would improve the highway alignment to reduce curvature at Windy Corner and bring the highway up to the State of Alaska Department of Transportation and Public Facilities design standards. The project involves realigning the existing two-lane highway and reconstructing the road as a divided two-lane highway. In order to create space for the road realignment, the existing Alaska Railroad Corporation tracks will be realigned and relocated farther into Turnagain Arm. The space created by the road and rail realignment will further improve safety by accommodating improved parking/turnout facilities on both sides of the highway with new auxiliary lanes for traffic entering and exiting the highway and passing lanes. Recreation facilities provided along the corridor will reduce the number of motorists slowing and stopping on the road to view wildlife. In order for the State of Alaska Department of Transportation and Public Facilities to construct the highway safety improvements, some protected lands will need to be converted to right-of-way or used as material sites.

The State of Alaska Department of Transportation and Public Facilities plans to mitigate the impact of the conversion by relinquishing 14.7 acres of land within the existing highway right-of-way to Chugach State Park and constructing outdoor recreation support facilities (parking, trail access, boardwalk, etc.) in the area transferred to Chugach State Park (Figure ES-1). The replacement area will have greater recreation utility than the converted sites. The converted mudflats are only accessible at low tide and are hazardous areas for recreation. The converted upland areas have no formal trails and low levels of recreation use. The replacement site will provide recreation facilities for the thousands of Alaska residents and visitors that recreate by viewing wildlife and scenery along Turnagain Arm and that hike along Turnagain Arm Trail, one of the more heavily used trails in the park.

Based on the alternatives analysis, the State of Alaska Department of Transportation and Public Facilities is requesting that the State of Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, forward a recommendation to the National Park Service to approve the proposed conversion and replacement.

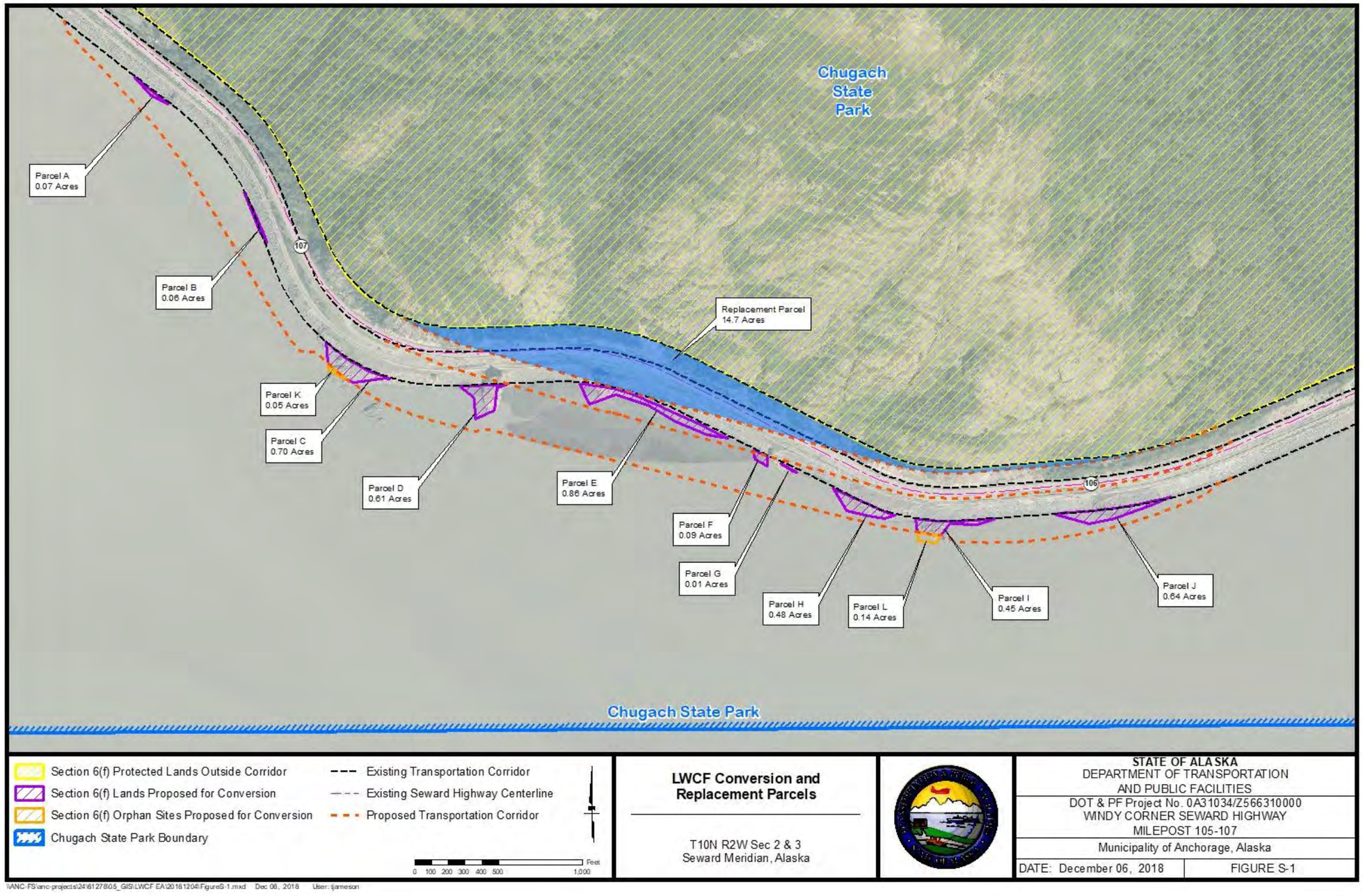


Figure S-1: Land and Water Conservation Fund Conversion and Replacement Parcels

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INTRODUCTION

Chugach State Park (CSP) was established in 1970. Land and Water Conservation Fund (LWCF) funds were used to support land acquisition for the park and have been used to support several park improvements over the last 45 years. Use of LWCF funds results in protection of CSP lands for public outdoor recreation under Section 6(f)(3) of the LWCF Act. Section 6(f)(3) requires that protected parkland that is converted to a use other than outdoor recreation be replaced with property that is of at least equal fair market value and equivalent recreation utility as the property that was converted. The replacement property must constitute a viable recreational unit or be acquired as an addition to an existing recreational unit. Development of the replacement property may be required to ensure that a level of recreation utility is achieved similar to what was lost at the converted site.

Appendix A contains figures depicting the currently protected portion of CSP, the proposed conversion areas, and the CSP areas that will remain protected by Section 6(f)(3) if the proposed conversion is approved.

Background

CSP was established by the State of Alaska in 1970 (Alaska Statute (AS) 41.21.120-41.21.125) and was designated a special purpose area in accordance with Article 8, Section 8 of the Alaska Constitution (State of Alaska Department of Natural Resources [DNR], 2011). The park purposes identified by State statute include:

- To protect and supply a satisfactory water supply for the use of the people.
- To provide recreational opportunities for the people by providing areas for specified uses and constructing the necessary facilities in those areas.
- To protect areas of unique and exceptional scenic value.
- To provide areas for the public display of local wildlife.
- To protect the existing wilderness characteristics of the easterly interior area.

CSP contains approximately 495,000 acres. It is one of the four largest state parks in the United States (U.S.). The park contains a vast diversity of land forms and rugged topography with mountains, ocean shoreline, lakes, glaciers, and ice fields. CSP is one of Alaska's most accessible parks, with the western boundary adjacent to the State's largest city (Figure 1) and the Seward Highway providing easy access along the park's southern boundary. The park provides a diverse array of year-round recreational opportunities for thousands of users. Recreational activities include off-roading (motorized vehicles), biking, boating, cabin use, camping, hiking,

horseback riding, wind surfing, kite boarding, and climbing. The DNR manages CSP through the DNR Department of Parks and Outdoor Recreation (DPOR).



Figure 1: Chugach State Park Location

The Seward Highway corridor is located within the boundaries of CSP. The highway is located in a 300-foot-wide State of Alaska Department of Transportation and Public Facilities (DOT&PF) right-of-way (ROW) approximately centered on the highway centerline. The Alaska Railroad Corporation (ARRC) also has a rail line through the corridor. The ARRC rail line is located in a 200-foot-wide corridor centered on the rail



Photograph 1: Seward Highway Transportation Corridor

line centerline. The DOT&PF highway ROW overlaps the ARRC corridor in some areas. The ARRC issued to DOT&PF a Blanket Permit for highway uses within the ARRC corridor in certain areas in 1989. This Blanket Permit was extended to 2036 under a 2001 Memorandum of Agreement (MOA) between DOT&PF, DNR, and ARRC (Appendix B). The 2001 MOA further established the desire of these three agencies to work together in planning, development, and operation of the transportation facilities within the Seward Highway corridor for public benefit, while recognizing the diverse missions of each entity.



Photograph 2: Alaska Railroad along Turnagain Arm

Importantly, the three entities recognized the essential role of the Seward Highway and the Alaska Railroad as critical state transportation infrastructure and the purposes of CSP and the importance of consideration of CSP purposes and policies in the design and construction of transportation projects in the corridor. The agreement also recognized that realignment of the highway and rail line was needed to improve traffic operations, congestion and public safety, and that changes in land ownership and/or management authority would be needed to accommodate realignment.

Windy Corner Improvements Background

In 2001, DOT&PF, DNR, and ARRC established an MOA guiding cooperative efforts toward addressing the operational constraints and safety concerns along the Seward Highway corridor between Potter Station (Milepost [MP] 117) and Girdwood (MP 90). In 2004, DOT&PF proposed design improvements to Seward Highway from MP 104 to MP 115. Design and permitting efforts for this project were suspended when it was determined that construction funding was not available.

The issue of operational and safety improvements to this section of the highway was revisited in 2011, when DOT&PF commissioned a value engineering (VE) study to provide rough order costs for various alignment alternatives. The alternatives covered in the VE study built on and expanded the work completed in 2004, with multiple variations for alignment shifts and a shorter section of highway (MP 105 to MP 107).

Following the VE study, DOT&PF made the decision to move forward with design, documentation, and permitting for the MP 105 to MP 107 segment (Windy Corner Improvements Project). State and federal funding is being used for the project, and the DOT&PF is preparing an Environmental Assessment on the MP 105 to MP 107 Windy Corner Improvements Project. The DOT&PF initiated consultation with DNR in 2014 to begin the LWCF conversion process for the conversion and replacement of CSP land funded by and protected under the LWCF Act.

CHAPTER 1—PURPOSE AND NEED

The purpose of this project is to remove federal protection from 39.56 acres of CSP land between MP 104 and MP 109 of the Seward Highway to allow for proposed highway improvements at Windy Corner. The highway improvements are needed to address capacity and safety issues along the Seward Highway between MP 105 and MP 107. Potential material sites to support construction of the highway improvements are located near MP 109 and between MP 104 and MP 105. The conversion is needed to provide DOT&PF with the land necessary for highway and railroad realignment and to provide material sources for construction.

The Seward Highway, a National Scenic Byway and All-American Road, is the only road access to Anchorage from communities to the south and Alaska Marine Highway System stops at Whittier and Homer. As such, the highway supports heavy commercial, recreational, and residential traffic. Average daily traffic volumes within the corridor were estimated at 10,156 vehicles for 2012, with heaviest average daily traffic operations exceeding 22,000 vehicles during peak summer months (DOT&PF, 2012).



Photograph 3: Seward Highway Summer Traffic

Traffic operations between MP 105 and MP 107 of the highway are frequently disrupted by motorists slowing and parking along the highway shoulder to view wildlife. When Dall sheep congregate on the rock cliffs on the north side of the highway, many cars slow suddenly and pull off the road to view the sheep.

There is a high differential in speed between motorists traveling through the corridor and those focused on enjoying the scenic sights and wildlife viewing. Speed differentials, in combination with the uncontrolled traffic movements entering and exiting the highway at Windy Corner, contribute to the elevated fatal/major injury crash rates within the corridor.

Over a 45-year span, between 1977 and 2012, this highway segment (MP 105 to MP 107) had the highest number of fatal crashes and second-highest rate of major injury crashes of any segment between Potter Station and Girdwood (Figure 2).



Photograph 4: Sheep on Cliffs above Windy Corner

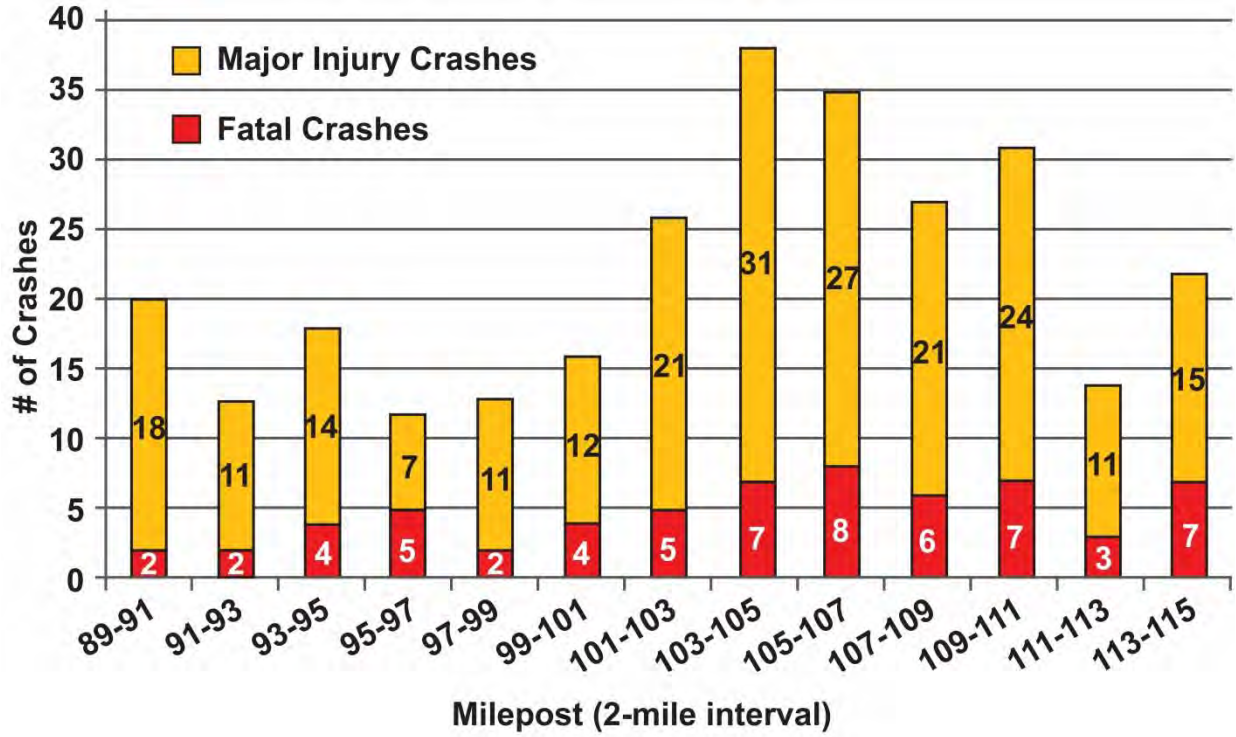


Figure 2: Seward Highway Crash Levels

In an effort to decrease the rate of high-severity injury crashes along the Windy Corner highway segment, DOT&PF established a highway safety corridor and restricted speeds to 55 miles per hour (mph). The Seward Highway between Anchorage and Girdwood is now one of five designated safety corridors in Alaska. This measure has partially addressed the safety issues in

the corridor; however, the 'safety corridor' designation is considered to be an interim measure until more permanent engineering measures are implemented; it is not a permanent solution. Realigning the Seward Highway at Windy Corner provides a more-permanent solution by reconstructing the highway to meet current FHWA design standards, provide turn lanes—where warranted—and afford safer viewpoints along Turnagain Arm. Approval of this LWCF conversion/replacement proposal would allow DOT&PF to make the necessary highway operational and safety improvements.



Photograph 5: Sightseers Standing on Highway Shoulder

As noted earlier in this document, DOT&PF and CSP have worked together in the past on highway realignments and improvements. Materials needed for highway improvements in the corridor through CSP have historically been obtained from material sites developed in CSP. According to internal and external cost analyses (Table 1 and 2), the lowest estimated cost for using fill materials from outside CSP would be approximately $50 million to $60 million dollars, or two to three times the cost of acquiring fill from material sources within CSP. Using alternative material sources would eliminate the need to remove federal protection from the CSP lands identified for material sites; however, it may financially preclude DOT&PF from constructing the highway improvements project.

Table 1: Windy Corner Material Source Comparison

	From Material Sites 1 and/or 6	Imported from Off-Park Location
Borrow C Cost ($/Ton)	$6.50[(1)]	$18.00[(2)]
Royalty ($/Ton)	$0.00	$0.00
Subtotal ($/Ton)	**$6.50**	**$18.00**
Fill (Ton)	3,315,675	3,315,675
Total ($)	**$21,551,888**	**$59,682,150**
Cost Savings over Importation from Off-Park Location	**$38,130,263**	

(1) Per plans-in-hand submittal dated November 3, 2014
(2) This cost is based on $11–15/ton unit costs for Borrow A received in bids for West Dowling Phase 2 (2013 project), which called for 978,360 total tons of borrow. Additionally, Skookum Quarry provided an estimated unit cost of $8/ton for shot-rock borrow material production, not including transportation and placement. Assuming transportation and placement accounts for slightly over half of the total borrow cost, this estimate supports the predicted unit cost used above. In addition, Curry Quarry (ARRC-owned, located approximately 20 miles north of Talkeetna) provided an estimate of $75/ton for rock production and transportation via rail, not including the cost of placement. This would increase the total Borrow C cost to $248.7 million dollars. However, it is probable that this unit cost would be reduced, due to volume.

An independent third-party cost analysis, conducted by Granite Construction, Inc., evaluated six material sources for the project, and three transportation options. This analysis found that rock from within the park at MP109 would cost approximately $24 million. The next cheapest alternative would be to haul material by train from Eklutna, which was expected to cost $50 million. Table 2, below, indicates the material sources, transport methods, and anticipated costs evaluated.

Table 2: Third-Party Material Source Cost Summary

Source	Transport Method	Cost
MP109	Truck	$24 million
MP109	Train	$31 million
Portage Valley	Truck	$62 million
Portage Valley	Train	$62 million
Eklutna	Train	$50 million
Chugiak	Truck	$90 million
Granite Cove	Barge	$110 million
Diamond Point	Barge	$78 million

Source: Granite Construction, Inc., 2017

CHAPTER 2—DESCRIPTION OF ALTERNATIVES

Alternatives to the proposed LWCF conversion include the following:

- 'No Action'
- 'Proposed Action'
- Partial Conversion



Photograph 6: Cars on Shoulder for Wildlife Viewing

'No Action' Alternative

Under the 'No Action', the federally-protected Section 6(f) CSP parcels would not be converted to a transportation use and DOT&PF would not construct the improvements on the Seward Highway at Windy Corner. This segment of the highway would continue to have an elevated rate of high-severity injury crashes due to road geometry and traffic issues related to wildlife viewing and other driver distractions.

Figures 3 and 4 illustrate the existing highway and rail corridors and federally-protected Section 6(f) CSP parcels in the vicinity of the Seward Highway MP 105 to MP 107.

'Proposed Action' Alternative

The 'Proposed Action' would result in removal of federal protection from a total of 39.56 acres of CSP. The LWCF lands being converted are shown in Figures 5 and 6 (Table 3).

Table 3. Summary of LWCF Conversion Acreage

Type of Use	Type of Land	Description of Use	Size (Acres)
Material Extraction[1]	LWCF lands (Uplands)	Extract material from MP 109	19.6
Material Extraction[1]	LWCF lands (Uplands)	Extract material from MP 104	15.8
Subtotal for Material Extraction[1]	LWCF lands (Uplands)		35.4
Transportation ROW Acquisition	LWCF (Mudflats)	Fill Footprint	3.97
Conversion (not ROW)[1]	LWCF (Mudflats)	Remnant LWCF lands	0.19
Subtotal	LWCF Mudflats		4.16
TOTAL LWCF Conversion	**LWCF Uplands & Mudflats**		**39.56**

[1] Material sites and remnant LWCF mudflats will remain in DNR DPOR ownership.

Under the Windy Corner project, DOT&PF proposes to acquire a total of 26.3 acres of the intertidal estuarine mudflats in Turnagain Arm from CSP to realign the highway and railroad (Table 4). The boundaries of CSP on the Turnagain Arm mudflats differ from the boundary of the lands protected under LWCF. This may be due to the LWCF boundaries being approved prior to the final boundary configuration of the park. Based on the LWCF boundary, only 3.97 acres of the proposed 26.3 acres of mudflats are protected under the LWCF Act. This 3.97 acres would be converted from recreational use to transportation use. In addition, the ROW acquisition as proposed would leave 0.19 acres of stranded or 'orphan' LWCF-protected outcrops on the seaward side of the realigned highway. At the request of DNR and the National Park Service (NPS), DOT&PF proposes to remove LWCF protection from that 0.19 acres as well. Therefore, a total of 4.16 acres of estuarine intertidal area would be converted.

Table 4. Right-of-Way Acquisition and Fill Summary

Action/Use	Type of Land	Size (Acres)
ROW Acquistion/Fill Footprint	LWCF (Mudflats)	3.97
ROW Acquistion/Fill Footprint	Non-LWCF (Tidal waters)	22.33
Total ROW Acquistion/Fill Footprint[1]	**All Lands**	**26.30**

[1] Not all LWCF lands converted will be acquired as ROW. The material sites and remnant parcels would be converted from recreation use under LWCF but ownership of the material sites would remain with DNR DPOR.

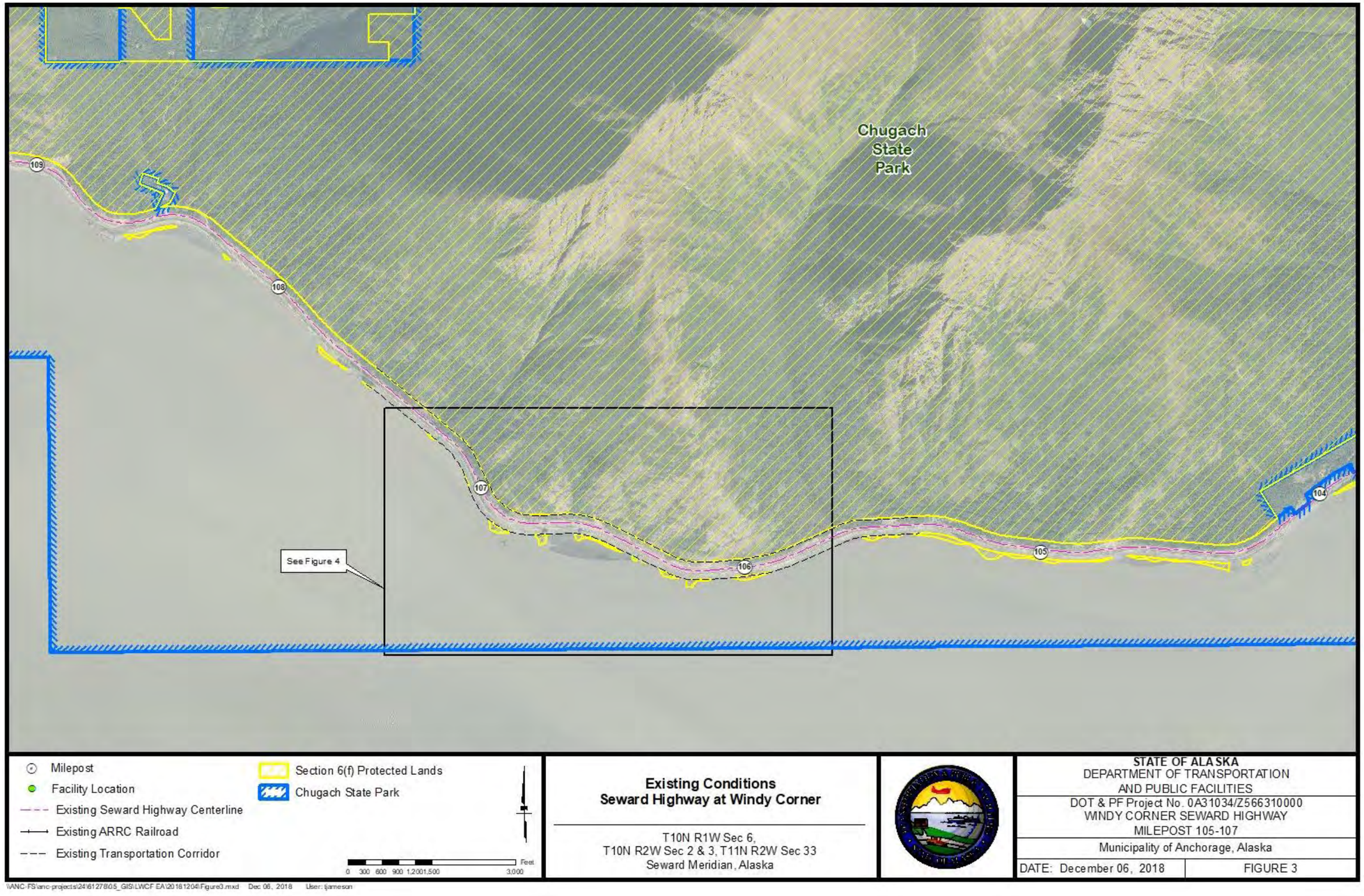


Figure 3: Existing Conditions, Seward Highway at Windy Corner

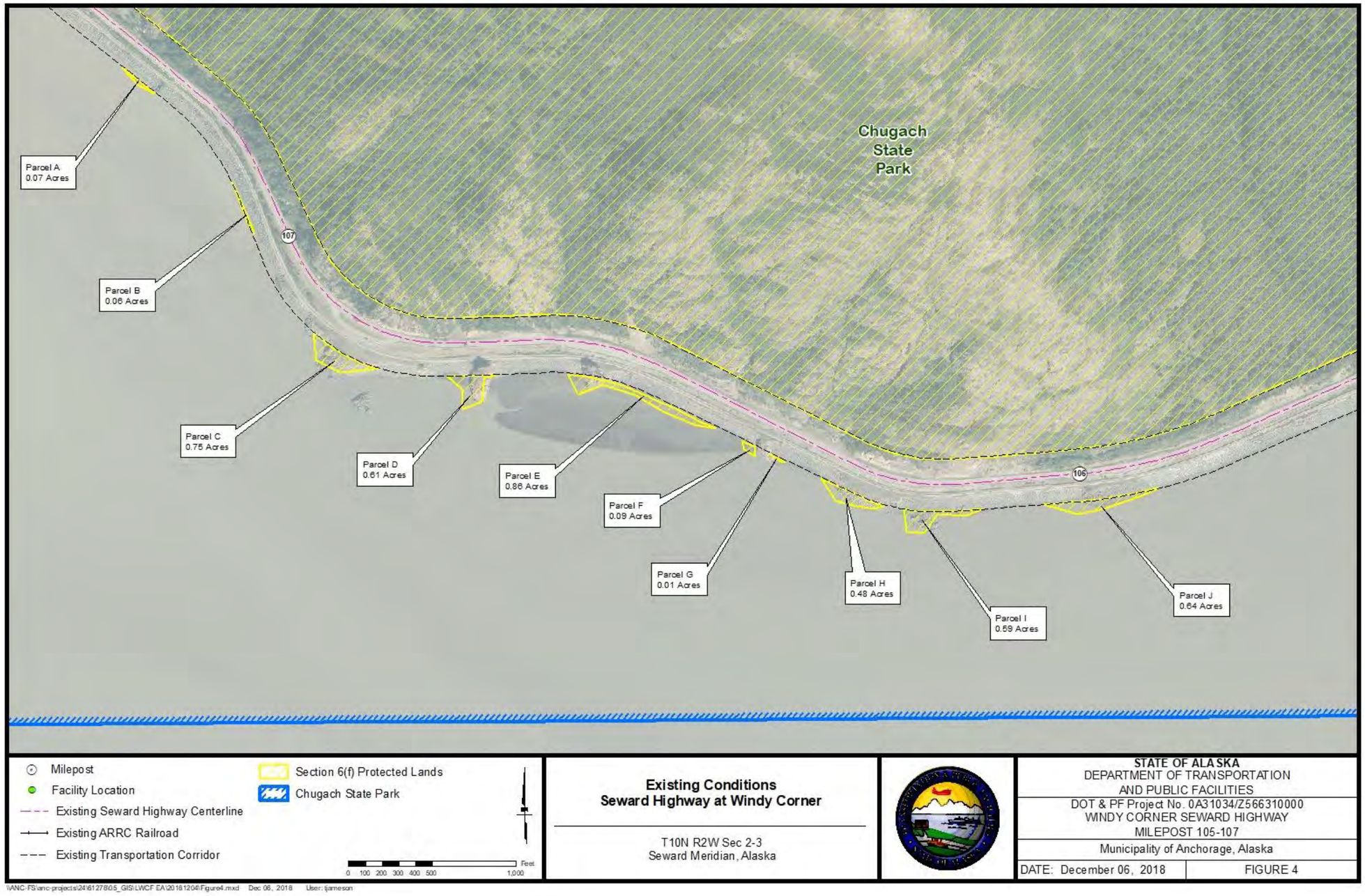


Figure 4: Existing Conditions, Seward Highway at Windy Corner

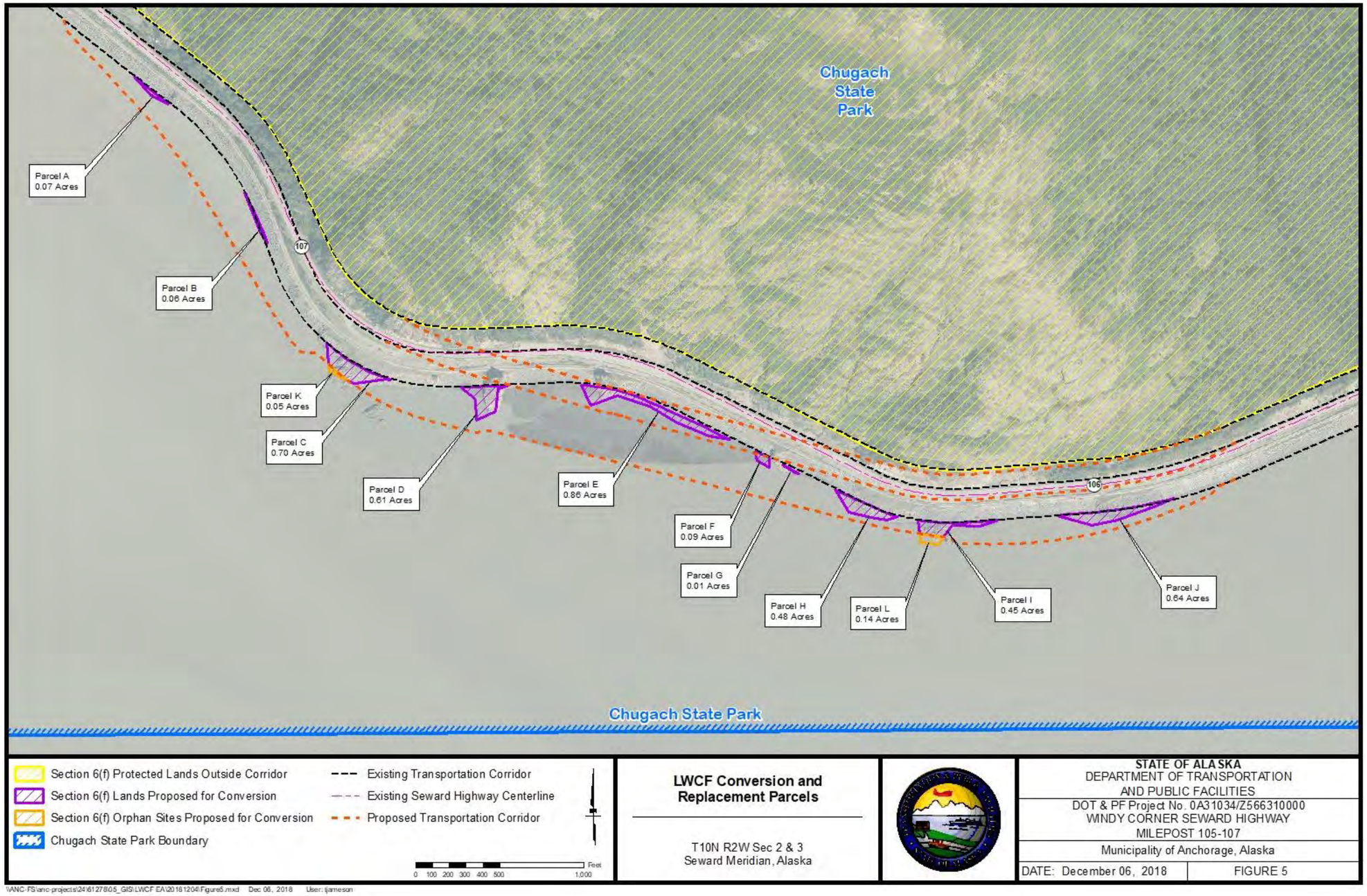


Figure 5: Converted Sites—Mudflat Parcels

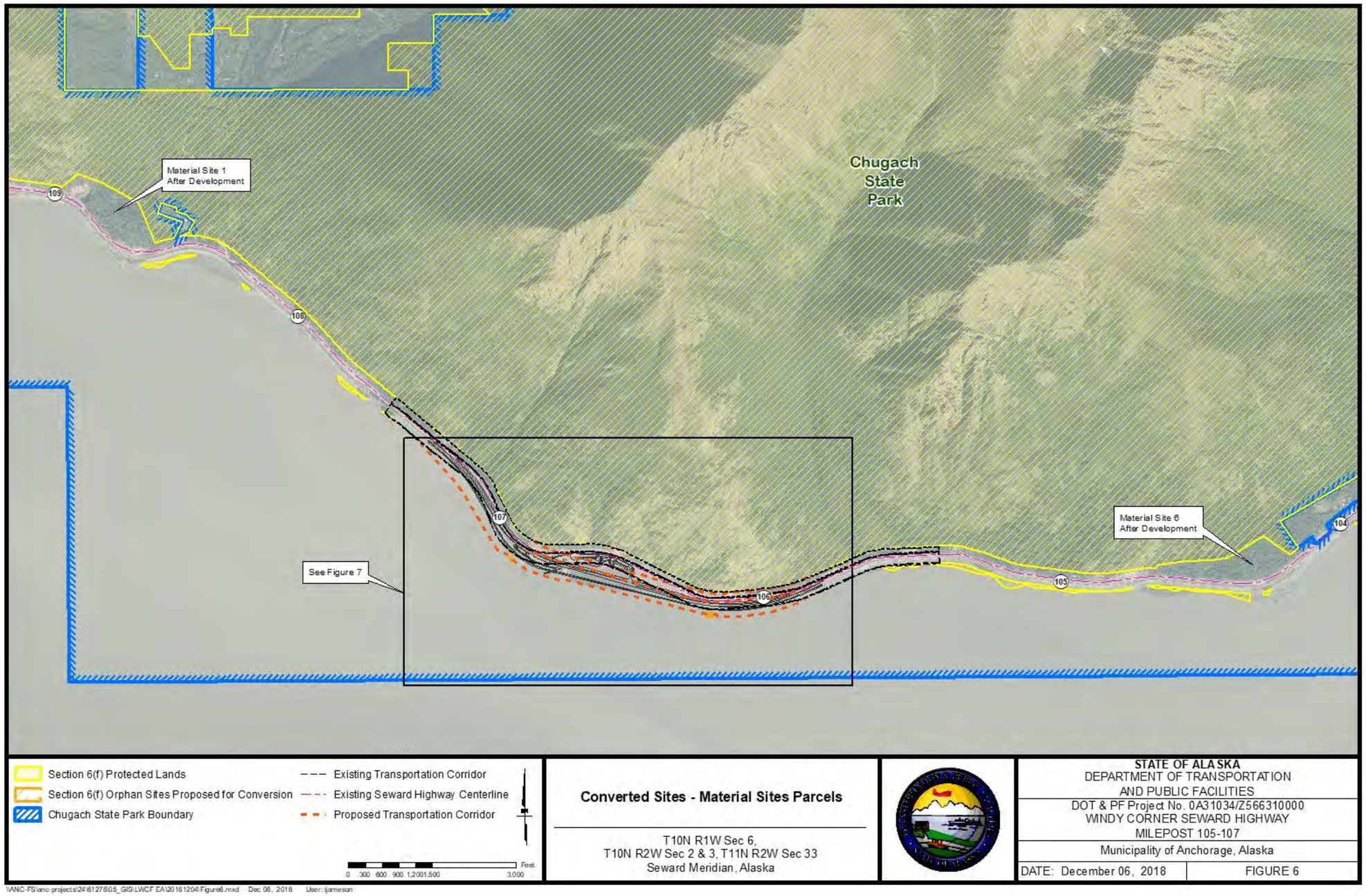


Figure 6: Converted Sites—Material Sites Parcels

The two upland material sites would be converted for a non-recreation use but would remain within DNR ownership and management. The material sites are likely to be developed into additional recreation facilities in the future, once construction materials have been removed, as specified in the CSP Management Plan (2011). The possible future reclamation of the material sites for other uses is not proposed as part of this project. The DOT&PF would not retain any right to future use of these proposed sites, regardless of whether each is used.

The DOT&PF plans to replace the converted recreation lands with property and improvements that have at least equal fair market value and equivalent recreation utility. The DOT&PF would relinquish 14.7 acres of existing DOT&PF Seward Highway ROW on the north side of the highway to DNR. The DOT&PF will construct outdoor recreation facilities, including a scenic parking facility, a trailhead for the Turnagain Arm Trail, a restroom, and a boardwalk and viewing shelter on the area transferred to DNR.

The replacement area has greater than fair market value, as documented in the appraisals in Appendix C and as discussed further below. The fair market value of the mudflats and uplands being converted is $193,700. The fair market value of the replacement land is $231,300, not including the value of the recreational amenities DOT&PF would construct on the area transferred to DNR.

The replacement area will have greater recreation utility than the converted sites. The converted mudflats are only accessible at low tide and are hazardous areas for recreation. The converted upland areas have no formal trails and low levels of recreation use. The replacement site will provide recreation facilities for the thousands of Alaskan residents and visitors that recreate by viewing wildlife and scenery along Turnagain Arm and that hike or run along Turnagain Arm Trail, one of the more heavily used trails in the park.

Partial Conversion Alternative

The ‘Partial Conversion’ alternative would involve conversion of only the 4.16 acres of LWCF-protected intertidal areas and mudflats for purposes of highway realignment. This option would not result in conversion of the 35.4 acres of uplands to serve as material sources for its construction.

Under this alternative, the relinquished stretch of highway would be used as a replacement for the intertidal lands. As with the ‘Proposed Action’ alternative (above), the market value and recreational value of the relinquishment parcel exceeds both the market value and recreation utility of the converted parcel.

Under this alternative, fill material suitable for highway realignment and construction purposes would have to be imported by truck or train. Transporting the large quantity of materials needed from outside the area would increase traffic impacts during construction. In addition, the cost for importing material from off-site is estimated between $50 million to $60 million, compared with $22 million for using materials from the two proposed material sites. The cost of importing

material would increase the cost of construction of the highway improvements from $65 million to between $93 million and $106 million, or an increase between 40 and 60 percent. This cost difference would make the project infeasible. This alternative was not considered feasible to carry forward.

Description of Conversion Parcels

Turnagain Arm Mudflats

The DOT&PF is acquiring ROW approximately 26.3 acres south of the existing highway, most of which is comprised of mudflats with a few rocky outcrops. The Section 6(f) mudflats to be converted to transportation use consist of ten isolated parcels that together make up 3.97 acres. A few small remnants (0.19 acres) of LWCF land are not located within fill limits and would therefore not be converted to transportation use but would have LWCF protections removed (Figure 7).



Photograph 7: Turnagain Arm Mudflats

An appraisal of the mudflats area was conducted on August 8, 2018 (Appendix C). This appraisal included all of the 4.16 acres that are protected under the LWCF Act. The estimated fair market value for the entire Turnagain Arm wetland parcel was determined to be $1,356 per acre. Based on this appraisal, the 4.16 acres of mudflats to be converted have a fair market value of $5,641.

The recreational opportunities and usefulness of the Section 6(f) parcels within Turnagain Arm are minimal. Although these areas are part of the scenic landscape, access to the mudflats is hazardous and they are only accessible at low tide.



Photograph 8: Upland Vegetation

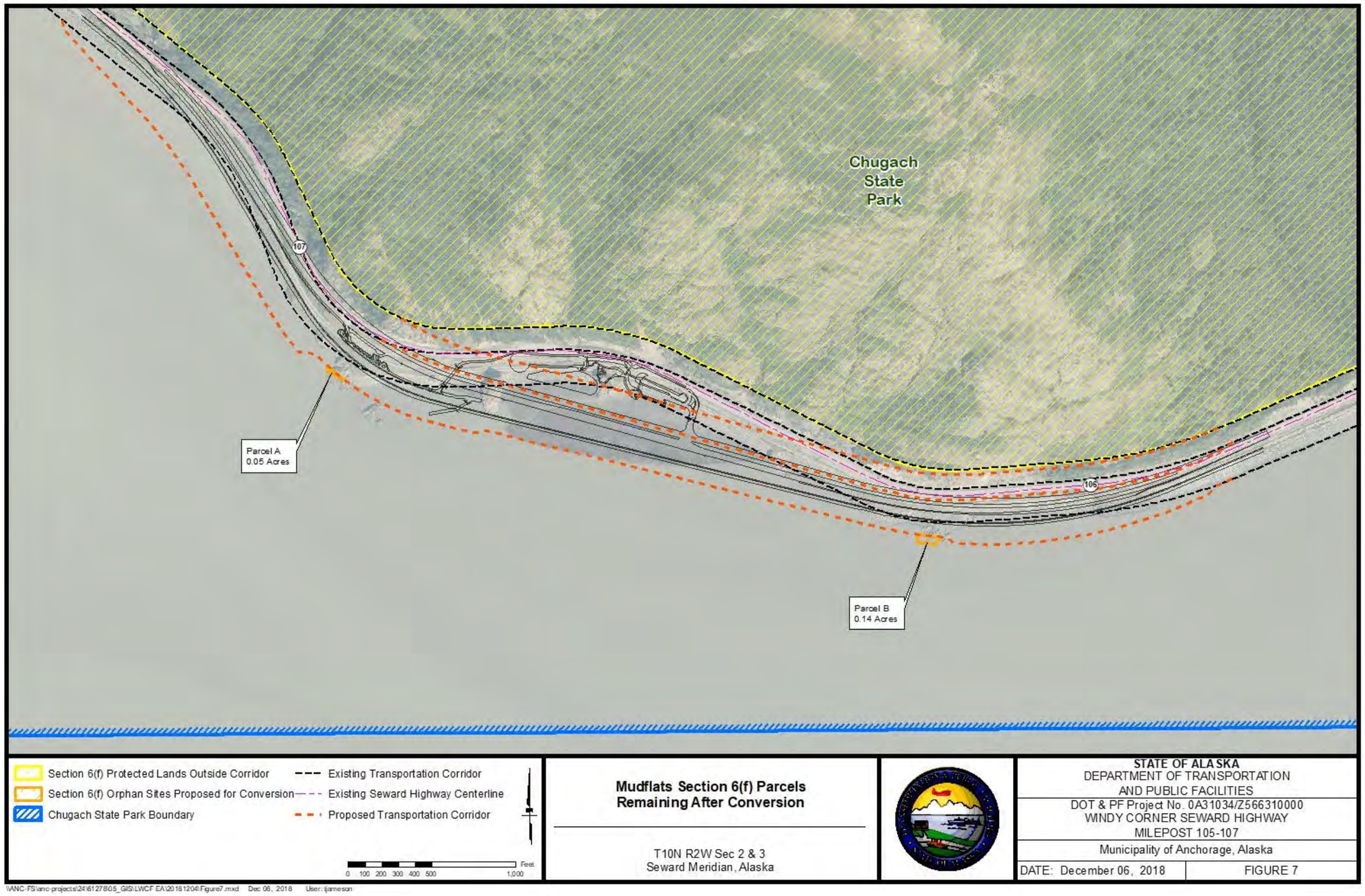


Figure 7: Mudflats Section 6(f) Parcels Remaining After Conversion

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Material Site 1 and Material Site 6

Material Site 1 (MS1) is a 19.6-acre undeveloped upland site located between MP 108.6 and MP 109. The site is forested and steep in areas. There are no water features on the site. MS1 was appraised on August 8, 2018 (Appendix C). The estimated fair market value for the 19.6-acre parcel is estimated at $53,000, or $2,704 per acre.

Material Site 6 (MS6) is a 15.8-acre undeveloped upland site located between MP 104.1 and MP 104.6. The site is forested. There are no water features on the site. A portion of the site has been used as a material site in the past. MS6 was appraised on August 8, 2018 (Appendix C). The fair market value for the 15.8-acre parcel is estimated at $105,000, or $6,646 per acre.

The recreational opportunities provided by these sites are few or limited, and their usefulness for outdoor recreation areas is low. Neither site has any developed access, trails, or parking. The sites do not have the rocky outcroppings used by recreational rock and ice climbers in CSP.

Description of Replacement Parcel

Existing State of Alaska Department of Transportation and Public Facilities Right-of-Way

The replacement parcel consists of approximately 14.7 acres of existing DOT&PF ROW adjacent to CSP on the north side of the Seward Highway (Figure 8). In addition to transferring this area to CSP, DOT&PF would construct outdoor recreation facilities, including parking, a Turnagain Arm Trail trailhead, a vault toilet, a viewing shelter, interpretive signs, spotting scopes, and a boardwalk. The parking area would include 66 parking spaces (51 standard, 2 constructed to Americans with Disabilities Act [ADA] standards, and 13 recreational vehicle [RV]). In addition to these facilities on the north side of the highway, parking will be provided for southbound travelers on the south side of the highway, within the DOT&PF ROW. A pedestrian tunnel under the Seward Highway will allow southbound travelers to access the CSP facilities on the north side.

An appraisal of the 14.7-acre replacement parcel was conducted and is included in Appendix C. The estimated fair market value for the parcel is $231,300 ($13,606 per acre). The appraisal did not take into account the value of the proposed recreational amenities that DOT&PF would construct on the parcel transferred to DNR.

The replacement parcel will provide outdoor recreation facilities that are in high demand by residents and visitors using the Seward Highway. The parking, trailhead, and other facilities provide access to the park and to wildlife and scenic viewing in a safe location with support facilities. The parcel is adjacent to CSP and would be an addition to that recreation unit.

Finally, this conversion is consistent with the goals outlined in Alaska's Statewide Comprehensive Outdoor Recreation Plan (SCORP) (SCORP, 2009) to:

- *Provide and promote high-quality, sustainable, and affordable recreational opportunities to keep pace with the rising demands, needs, and diversity of Alaskans and visitors.*
- *Provide more convenient, legal, and barrier-free access to outdoor recreation opportunities on Alaska's public lands and waters.*
- *Support efforts to assist communities in meeting the outdoor recreation needs of their citizens.*

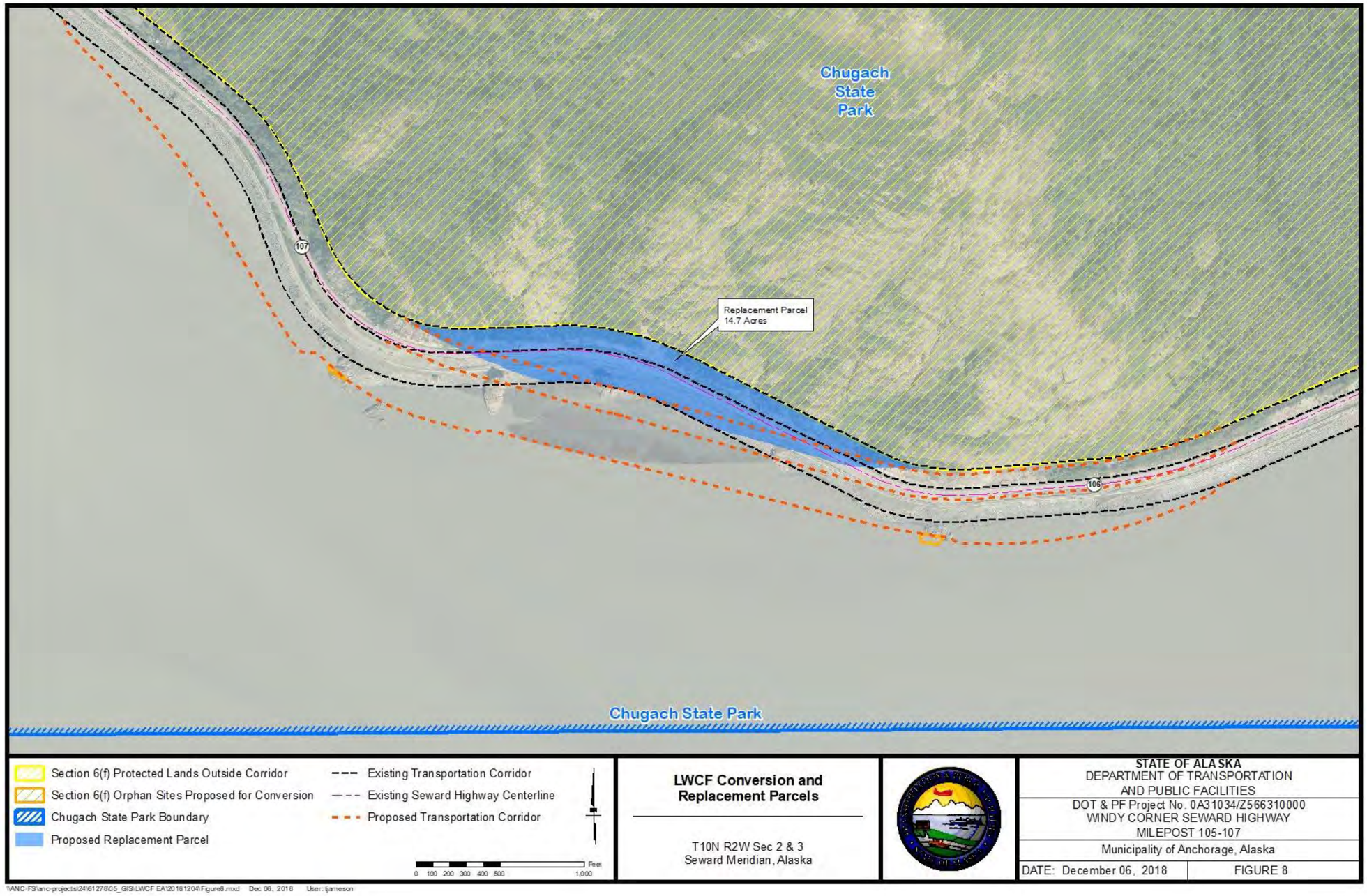


Figure 8: Proposed Replacement Parcel

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Improved Recreational Utility

The development and construction of the replacement parcel would result in a net positive benefit to the recreational opportunities and resources offered by CSP, by providing safe access and facilities for travelers to stop and enjoy the scenery and wildlife viewing or to access the Turnagain Arm Trail. The converted mudflats are only accessible at low tide and are hazardous areas for recreation. The converted upland areas have no formal trails and low levels of recreation use. The replacement site will provide recreation facilities for the thousands of Alaskan residents and visitors that recreate by viewing wildlife and scenery along Turnagain Arm and hiking along Turnagain Arm Trail, one of the more heavily used trails in the park.

Reasonably Equivalent

The proposed replacement site is reasonably equivalent in usefulness and location and will offer an improvement to CSP facilities and services in this portion of the Seward Highway corridor. While there is no net gain in acreage for CSP, the proposed replacement site is appraised at a higher monetary value and would provide new recreation facilities and access where none now exists. Additionally, the proposed conversion would:

- Provide additional parking, accommodate passing, and increase accessibility for both northbound and southbound users of the highway,
- Provide added amenities (restrooms, rest area, scenic overlooks, etc.) on the northbound side of the Seward Highway,
- Provide for an unobstructed and safe pedestrian passage to and from the northbound and southbound sides of the Seward Highway,
- Provide emergency boat access to Turnagain Arm for water rescue operations (restricted to emergency services such as the U.S. Coast Guard (USCG) or the Anchorage Fire Department), and
- Improve area safety through the addition of acceleration and deceleration lanes to allow safe access to the new parking areas at Windy Corner.

The facilities at the replacement site will increase the CSP recreation facilities available along the busy Seward Highway corridor where facilities are in high demand. As such, the replacement site satisfies the in-kind and reasonably equivalent mitigation requirements.

Public Involvement

Public involvement on the conversion proposal has been incorporated in the public involvement on the Seward Highway improvements project. As noted previously, DOT&PF has been working on improving operations and safety on the highway for over 10 years. The DOT&PF has conducted considerable public and agency outreach since the current design effort began in 2013. A synopsis of public outreach is included in Chapter 5.

Public outreach on the highway design project resulted in a number of design changes, most notably on the recreation facilities design for the replacement parcel and the connection with the parking proposed on the south side of the Seward Highway.

Other Alternatives

The alternatives detailed above all pertain to variations of the conversion itself. In addition to the alternatives evaluated for this Environmental Assessment (EA) on the LWCF conversion, there are a number of road alignment alternatives evaluated over the project's history that would have required similar or more amounts of LWCF land to be converted. These are described briefly below.

Windy Corner Improvements Project alignments evaluated over the last decade are described below.

1. 'No Action' Alternative: Under this alternative, the highway would remain on its existing alignment. This would not improve the poor traffic operations, congestion or safety of the MP 105 to MP 107 segment of the highway, nor reduce major injury and fatality accidents. This alternative would not require a conversion of LWCF land and is the same as the 'No Action' Alternative for the conversion.

2. Proposed Alignment: Under this alternative, the highway and railroad would be realigned as detailed above. This alternative would require a conversion of LWCF land as described in the 'Proposed Action' Alternative for the conversion.

3. Expanded Passing Lanes Alignment: This alignment evaluated an expansion of the proposed alignment by including full passing lanes from MP 104.9 to MP 106.0. This alternative alignment was reviewed in the 2004 Categorical Exclusion (CE) for the project (DOT&PF, 2004), and the highway and railroad transportation corridor would have had a wider footprint than that which is currently proposed. Materials would still have been proposed to come from CSP and, overall, this alternative would have resulted in the conversion of more land than the proposed alternative.

4. VE Study Option 2 Alignment: This alignment included a mixture of highway realignment inland, by removing tight curves on the mountainside or cliff face, and realignment of the ARRC line offshore. This alternative alignment was reviewed in the 2011 VE study (URS Corporation, 2011). It would have required more blasting for the road alignment. Materials would still have been proposed to come from CSP and, overall, this alternative would have resulted in the conversion of more land than the proposed alternative.

5. VE Study Option 5 Alignment: This alignment closely follows the currently proposed alignment, with minor differences in curve radii and extent of realignment. This alternative alignment was reviewed in the 2011 VE study. Materials would still have been

proposed to come from CSP. Overall, this alternative would have resulted in a similar amount of conversion as the proposed alternative.

6. VE Study Option 10 Alignment: This alignment would cut into the cliff face or mountainside for the northbound lane of traffic and push the ARRC line and southbound highway lane offshore, creating a very wide median between the two. This alternative alignment was reviewed in the 2011 VE study. Under this alignment, the highway and railroad transportation corridor would have had a wider footprint than currently proposed. Materials would still have been proposed to come from CSP, and, overall, this alternative would have resulted in the conversion of more land than the proposed alternative.

Additional information on these alternative highway alignments is included in the 2004 CE (DOT&PF, 2004) and the 2011 VE study (URS Corporation, 2011).

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CHAPTER 3—AFFECTED ENVIRONMENT

The affected environment was assessed for the proposed conversion parcels and the proposed replacement parcel using NPS Environmental Screening Forms (Appendix D) to determine resources likely to be impacted as a result of the proposed project.

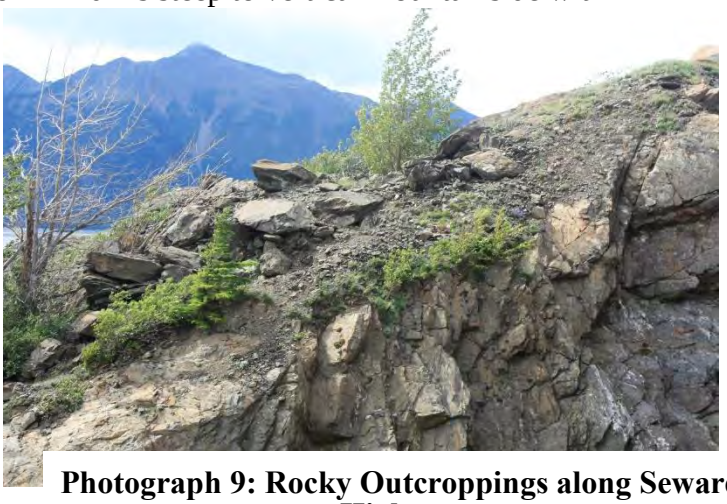
Proposed Conversion Parcels

Geological Resources

Geologically, much of the north shore of Turnagain Arm is exposed McHugh Complex outcropping. The McHugh Complex is a jumbled mass of metamorphic rocks, including metavolcanic greenstones, chert, argillites, conglomeratic sandstones, greywacke, and arkose. The entire length of the Windy Corner project corridor (approximately MP 109 to MP 104) constitutes this type of the McHugh Complex (DOWL HKM, 2013).

The predominant landform from MP 109 to MP 104 is steep to vertical mountainside with abundant loose rock. Creeks and small seasonal streams drain from the mountainside. The dominant soil type within the project area is variable-depth organic horizons with subsoil and bedrock, consisting of Talkeetna-Chugach-Histic Cryaquepts association, 10- to 70-percent slopes.

Glacial silt and sand compose the Turnagain Arm intertidal floor. The current depth to bedrock within the project corridor is variable and unknown.



Photograph 9: Rocky Outcroppings along Seward Highway

Air Quality

The proposed conversion parcels are located on Turnagain Arm between Anchorage and Girdwood. The parcels are not within a non-attainment area, and there are no known air quality issues. Traffic along the Seward Highway is the sole source of air pollutants along Turnagain Arm; however, nearly constant strong winds along Turnagain Arm prevent traffic-related air pollutants from becoming concentrated.

Sound/Noise Impacts

The conversion parcels are located adjacent to the Seward Highway and the Alaska Railroad. Highway and rail traffic are the primary source of noise in the area. Noise levels vary with the level of traffic.

Water Quality/Quantity

Runoff generated by summer precipitation and snow melt runs off the steep topography north of the highway and flows through culverts under the road and into Turnagain Arm. Waters within Turnagain Arm are naturally turbid, due to high levels of silty sediment. According to the State of Alaska Department of Environmental Conservation (DEC), no impaired waters exist within the project area (DEC, 2015).

Stream Flow Characteristics

There are no streams on the conversion parcels. There are three freshwater streams (MP 107.2, MP 107, and MP 106.6) and a seep (MP 107.1) located in the area proposed for highway improvements. None of these steep creeks is an anadromous stream or mapped as a Federal Emergency Management Agency special flood hazard area. Drainage areas to these culverts are less than 60 acres, producing flows well below the capacity of a 24-inch-diameter culvert.

Marine/Estuarine

Isolated parcels of Turnagain Arm mudflats adjacent to the existing Seward Highway and rail corridor are proposed for conversion. Turnagain Arm is located immediately south of the Seward Highway and is one of the two narrow branches of Cook Inlet. The Arm is approximately 30 miles long and averages 40 miles in width. The Arm is relatively shallow and dewaters to a large extent at low tides. As such, the United States Fish and Wildlife Service (USFWS) National Marine Wetland Inventory classifies Turnagain Arm as estuarine marine waters (USFWS, 2013b). Two main, deep water channels are located along the north and south shores. Turnagain Arm is one of sixty waterbodies worldwide to exhibit a tidal bore. The bore tide may exceed six feet in height and can travel at a speed of 15 mph. Turnagain Arm exhibits the largest tidal range in the U.S., with a 30-foot mean, making it the fourth highest in the world.

Cook Inlet and Turnagain Arm provide habitat to beluga whales, classified as Endangered, as discussed further below. The marine areas provide habitat for a wide variety of fish that serve as prey for belugas, including salmon and eulachon. Whales and fish are discussed further, below.

Floodplains/Wetlands/Other Waters of the U.S.

The Turnagain Arm mudflats are estuarine intertidal areas classified as Waters of the U.S. The proposed material sites are forested upland habitats and contain no known wetlands.

The material sites are located uphill of the Seward Highway in areas mapped as Zone D on the Flood Insurance Rate Map (Municipality of Anchorage, 2015). Zone D covers areas where flood hazards are undetermined, but possible. Flooding resulting from Turnagain Arm storm surges is possible; however, there has been no documented flooding within the area since the highway was originally constructed (personal communications, Steven Ellis, Stormwater Plan Review, Department of Public Works, Municipality of Anchorage). No flood hazard permit is required for development on the conversion parcels.

Land Use/Ownership Patterns/Property Values/Community Livability

As described above, CSP consists of nearly 495,000 acres. The Seward Highway ROW and ARRC rail line corridor are located within the boundaries of CSP. The conversion parcels are all within CSP and managed by DNR. Land use in CSP is managed under the CSP Management Plan and associated plans discussed below.

Land Use Plans

In 2011, DNR, DPOR issued a draft CSP Management Plan revision. The revised plan acknowledges the need for cooperation between DNR, DOT&PF, and ARRC on planning and construction of improvements along the Seward Highway corridor (DNR, 2011).

A draft CSP Trail Management Plan (TMP) was produced for public review in 2009. This plan identifies the Turnagain Arm Trail, located between Windy Corner and Potter Creek Trailhead, as a Class 3 or Class 4 trail, primarily used by hikers.

The DNR issued a draft Chugach Access Plan (CAP) in 2010. The goal of the CAP is to "ensure that future generations have convenient, secured public access to Chugach State Park." The CAP identifies existing access, documents access needs, and establishes guidelines and methods for securing access. The CAP is proposed as a tool for future recreation planning.

The latest Turnagain Arm Comprehensive Plan (TACP) was issued in 2009. This Municipality of Anchorage land use plan provides guidance for future growth and development in the area. The plan acknowledges the rural and scenic nature of the area. The TACP contains a specific goal of encouraging community participation in transportation improvement projects. The objective for this goal is to provide opportunities for the community to influence the design of projects that may impact the lifestyle, character, and future goals of the community. Policies call for transportation improvements to be compatible with community values by protecting scenic views, minimizing noise in residential areas, minimizing light pollution, and providing access to local businesses. Policies also call for safety upgrade projects to include more rest stops and pullouts, to incorporate noise mitigation, and to alleviate traffic volumes.

Property Values/Community Livability

The conversion parcels are in an area surrounded by public land. The community of Rainbow is nearby, although not adjacent. The closest residence is approximately 430 feet away from the proposed MP 109 material site.

Circulation/Transportation

The conversion parcels are adjacent to major State infrastructure: the Seward Highway and the Alaska Railroad rail line between Anchorage and Seward.

Plant/Animals/Fish and State or Federal Listed or Proposed Species

Plants

There are no plants of special concern within the project area. The mudflats are not vegetated. The upland conversion parcels have subarctic forests, composed mostly of birch (*Betula spp.*), Balsam popular (*Populus balsamifera*), willows (*Salix spp.*), a variety of spruce (*Picea spp.*), western hemlock (*Tsuga heterophylla*), alders (*Alnus spp.*), and dense shrub understories.

Animals

Most land mammal species present in Alaska can be found in CSP. CSP lists 40 species that may be present in the park, including black and brown bears, moose, wolverine, and wolf (DNR, 2011). The habitat on the proposed upland conversion sites may be used by a variety of these species but is a small fraction of the available habitat in the area. Dall sheep (*Ovis dalli*) occupy habitat in Windy Corner year-round. Sheep are attracted to this area by the steep rock terrain and naturally occurring mineral deposits that are nutritionally important to local sheep. Also, sheep traditionally use this area for lambing in May and June (Alaska Department of Fish and Game [ADF&G], Habitat and Restoration Division, 2001). However, the mineral lick that draws them to the area is not within MS1. The most common marine mammal in the vicinity of the conversion parcels is the Beluga whale, discussed further below.

Over 135 species of birds are known to use the park, including eagles, hawks, owls, woodpeckers, and a multitude of songbirds (DNR, 2011). Bald eagles (*Haliaeetus leucocephalus*) may forage within Turnagain Arm; however, nesting on the proposed conversion sites is unlikely, as the habitat is generally unsuitable for nesting bald eagles. A bald eagle survey conducted on April 29, 2013 determined that there were no active nests within the project corridor at the time of the survey (DOWL HKM, 2013).

Fish

Although 11 species of fish are found within CSP, no anadromous or resident fish streams exist on the upland conversion parcels (ADF&G, Division of Habitat, 2013). Fish habitat in Turnagain Arm is discussed below under Essential Fish Habitat.

Federally Listed Species/Habitat of Special Concerns

The Cook Inlet population of Beluga whale (*Delphinapterus leucas*) was designated as Endangered by the National Marine Fisheries Service (NMFS) in 2004. Turnagain Arm, in its entirety, has been designated as critical habitat for these Beluga whales. The Cook Inlet population of beluga whales was never large but is believed to have decreased by about 50 percent between 1994 and 1998 to an estimated 347 whales (ADF&G, 2015). These whales travel in small pods and are opportunistic feeders, eating mostly fish (herring, capelin, smelt,

salmon lingcod, eulachon, etc.). Belugas tend to feed over the continental shelf, in nearshore estuaries and in river mouths.

Unique Ecosystems/World Heritage Sites/Old-Growth Forests/Et cetera

There are no designated unique ecosystems, world heritage sites, or old-growth forests within or adjacent to the project area.

Unique or Important Wildlife/Wildlife Habitat

There are no unique or important wildlife or wildlife habitats on the conversion parcels, other than the designated Beluga whale critical habitat area within Turnagain Arm.

Unique or Important Fish Habitat

Fish/Essential Fish Habitat (EFH)

Turnagain Arm provides EFH and serves as a primary migratory corridor for all five stocks of Pacific salmon species: pink *(Oncorhynchus gorbuscha)*, chum *(O. keta)*, red *(O. nerka)*, silver *(O. kisutch)*, and king *(O. tshawytscha)* (National Oceanic and Atmospheric Administration [NOAA], 2015a). Turnagain Arm also provides EFH for Dolly Varden *(Salvelinus malma)*, euchalon, and a variety of groundfish species.

Invasive Species (Plant or Animal)

No invasive animals are known to occur in the project area. The invasive plant species listed below exist within the project corridor and could possibly be found on the upland conversion sites (11 Alaska Administrative Code [AAC] 34.020):

- Spotted knapweed (*Centaurea stoebe*),
- Canada thistle (*Cirsium arvense*),
- Waterweed (*Elodea spp.)*,
- European Bird Cherry (*Prunus padus*),
- Giant hogweed (*Heracleum mantegazzianum*),
- White sweetclover (*Melilotus alba*),
- Quackgrass (*Elymus repens*),
- Field bindweed (*Convolvulus arvensis*),
- Brittlestem hempnettle (*Galeopsis tetrahit*), and
- Yellow toadflax (*Linaria vulgaris*).

Recreation Resources

Recreation Resources

The parcels proposed for conversion are located within CSP. CSP is the largest State park and provides opportunities for a wide variety of recreation activities. Hiking, bicycling, rock climbing, wildlife viewing, roadside camping, windsurfing, kite boarding, sightseeing, and other recreational activities occur in the park. There are no known recreation facilities on the parcels themselves. The Turnagain Arm mudflat parcels are difficult to access and do not provide a safe

area for recreation. The upland material site areas may be used by off-trail hikers, but any use is likely to be occasional low-density use. Most park users accessing the park from along the Seward Highway use established parking areas or park along the highway to access trails, rock climb, watch wildlife, or view scenic vistas.

Park users seeking a more remote experience typically access trails away from the Seward Highway or hike from the Seward Highway trailheads back into the park.

The closest recreation facilities to the proposed material sites (Figure 9) are:

- MP 108.4 – Rainbow trailhead parking.
- MP 106.9 (Windy Corner) – Scenic viewpoint, double-ended paved turnout on the south (Turnagain Arm) side of the highway. A popular pullout for viewing Dall sheep.
- MP 106.7 – Paved pullout with Turnagain Arm trail access.
- MP 106.6 – Large paved turnout on the south. Another popular location for viewing Dall sheep.
- MP 105.7 – Falls Creek trailhead parking.
- MP 104 – Indian Valley Mine Historic Site.



Photograph 10: Trailhead Facilities along Turnagain Arm

National Parks, Preserves, Monuments, and Wild and Scenic Rivers

CSP is a state park. There are no national parks, preserves, monuments, or wild and scenic rivers located at or in the vicinity of the proposed conversion sites.

State Refuges/Critical Habitat Areas/Sanctuaries

There are no state refuges or sanctuaries at or adjacent to the proposed conversion sites. The critical habitat for Cook Inlet Beluga whales was discussed above.

Accessibility for Populations with Disabilities

There are currently no facilities on the proposed conversion parcels, and they are not accessible to populations with disabilities.

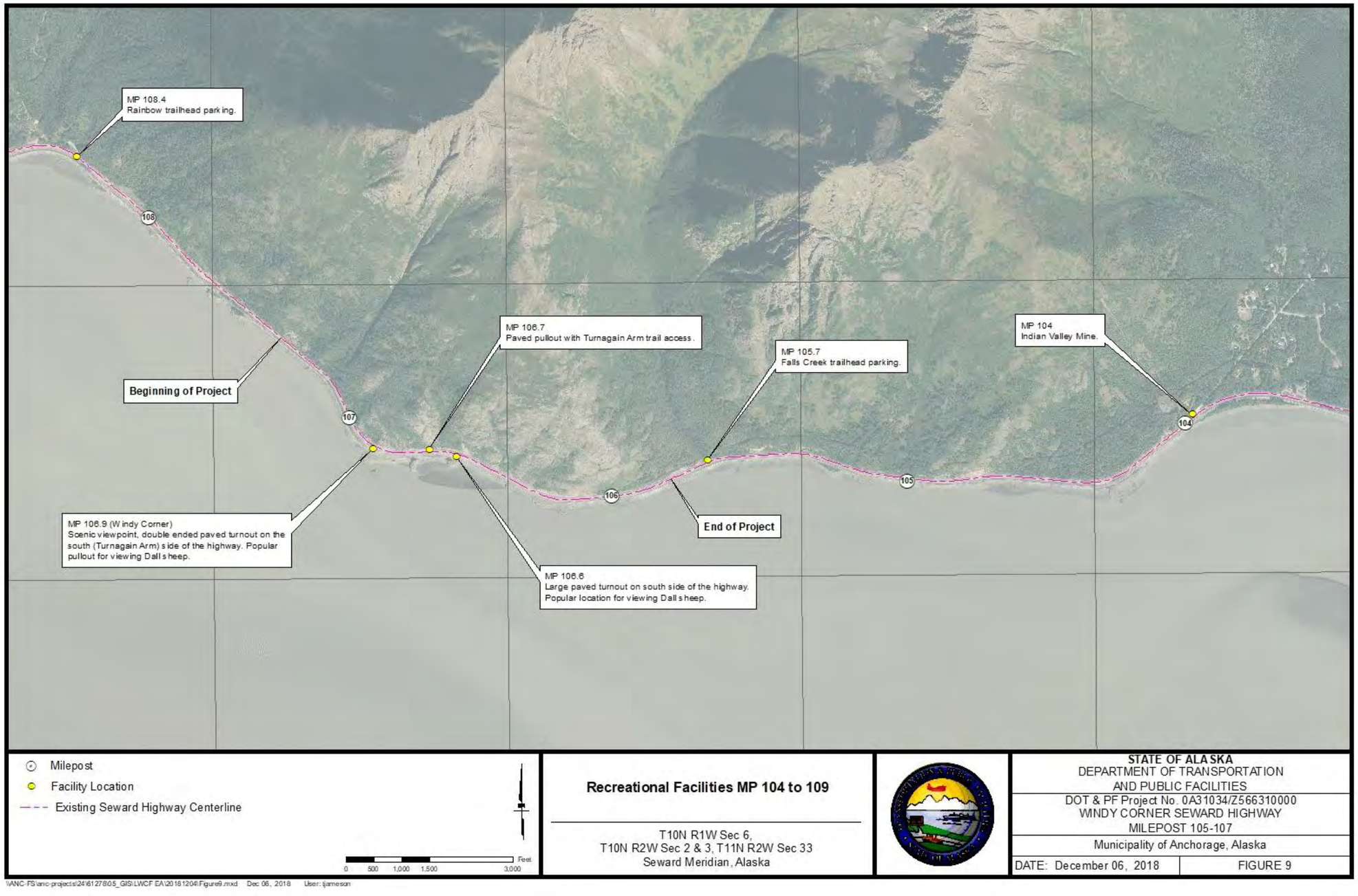


Figure 9: Recreational Facilities Milepost 104 to Milepost 109

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Overall Aesthetic/Special Characteristics/Features

CSP and Turnagain Arm are highly scenic areas with steep mountain topography next to marine views. This high scenic quality has resulted in the Seward Highway being designated a Scenic Byway and All-American Road. Protection of the high scenic value of areas within CSP was cited as one of the five primary reasons for the creation of CSP in 1970.

Historical/Cultural Resources

Table 5 lists cultural resources that occur in the vicinity of the conversion parcels based on a review of the Alaska Heritage Resource Survey (AHRS) and field studies conducted for the Seward Highway Improvements Project at Windy Corner. A description of the properties and their eligibility follows Table 5.

Table 5: Cultural Resources in the Vicinity of the Conversion Parcels

AHRS Site Number	Period	Eligibility
SEW-00131	Prehistoric	The site has been determined not eligible.
SEW-00029/ ANC-04057	Historic	Turnagain Arm of the Alaska Railroad. SEW-00029 was assigned to the entirety of the railroad system in Alaska. ANC-04057 was assigned for the 36.6-mile Turnagain Arm District of the Alaska Railroad. The site has been determined eligible as of February 6, 2015.
SEW-00566/ ANC-00279	Historic	Potter Connecting Trail, part of the historic Iditarod Trail. No Determination of Eligibility (DOE) or nomination has been completed for this site.
SEW-01579	Historic	Can dump. The site is being recommended as not eligible.
ANC-04069	Historic	The Seward Highway. No DOE or nomination has been completed for this site. The highway is located in the Area of Potential Effect (APE), but is exempt from Section 106 review.

SEW-00131 is a prehistoric lithic scatter, with flakes of chert and a chipped, stemmed projectile point. The site was identified during construction of a communications tower. The artifacts were not found in geological context nor in situ, and the site has been determined not to be eligible for the National Register of Historic Places (NRHP).

ANC-04057 was determined eligible for the NRHP, following an evaluation by Cultural Resource Consultants LLC (Yarborough et al., 2014). The assessment looked specifically at the Portage to Potter corridor segment, called the Turnagain Arm District in the ARRC archival documents. ANC-04057 is eligible under Criterion A for a significant and demonstrable association with transportation, economic development, and settlement. The railroad opened a region of Alaska with few roads or navigable rivers to settlement and development. The Turnagain Arm mudflat parcels proposed for conversion are adjacent to the Alaska Railroad corridor.

The Potter Connecting Trail (SEW-00566/ANC-00279) runs along the mountainside between Potter and Indian Creek and to the north connects to the Turnagain Arm Trail (ANC-00102), also known as the Johnson Trail (Reger, 2001:14, 17). Part of the Iditarod Trail, the Potter

Connecting Trail was established in 1915 during railroad construction along Turnagain Arm and functioned as a supply route for Alaska Engineering Commission (AEC) construction camps (Carberry and Lane, 1986:151). Although the trail may exist in remnant form in MS6, modifications to the area over decades have left little evidence of an uninterrupted trail.

SEW-01579, a can dump, was found during the 2015 survey of MS6. The site is similar to several other can dumps recorded along Turnagain Arm over the years. Most can dumps were associated with construction camps. The lack of structures at this site suggests a short-term use rather than a long-term dump site.

Socioeconomics

Conversion of the parcels would allow construction of the Seward Highway improvements. The highway construction would result in short-term indirect economic benefits from increases in construction wages and employment in Anchorage. Long-term indirect effects on the social and economic environment are beneficial due to safer and more efficient highway and rail transportation through this corridor.

Minority and Low-Income Populations

The conversion parcels are located in CSP, adjacent to existing road and rail infrastructure. No minority or low-income populations are located in proximity to the conversion sites.

Energy Resources (geothermal, fossil fuels, et cetera)

No energy resources are located within the conversion parcels, and no fossil fuels are currently used on these sites.

Other Agency or Tribal Land Use Plans or Policies

There are no other agencies' or tribal land use plans or policies in effect for the conversion parcels.

Contamination/Hazardous Materials

There are no open records of contaminated sites occurring on the proposed conversion parcels.

Other Important Environmental Resources to Address

No other important environmental resources remain to be addressed for the proposed conversion site.

Federal Recreation Areas

No federal recreation areas exist within the project corridor.

Navigable Waters

Turnagain Arm is considered a navigable water per the U.S. Army Corps of Engineers (USACE) and the U.S. Coast Guard (USCG) (USCG, 2012).

Proposed Replacement Parcel

Geological Resources

This parcel is currently developed as part of the Seward Highway. The replacement site has the same geological components as described for the proposed conversion parcels. Natural geological features were modified during construction of the Seward Highway by blasting and leveling of the ROW.

Air Quality

The replacement site has the same ambient air quality conditions described for the conversion parcel.

Sound/Noise Impacts

The replacement parcel has the same noise conditions as those described for the conversion parcel.

Water Quality/Quantity

There are no waterbodies present on the replacement parcel. Water quality in the area is the same as described for the conversion parcel.

Stream Flow Characteristics

There is a single drainage on the replacement parcel. This small waterway flows down from a crease in the Turnagain Arm uplands at a significant gradient and is routed through a 24-inch culvert under the existing highway to the intertidal mudflats.

Marine/Estuarine

There are no marine/estuarine resources located at the replacement site.

Floodplains/Wetlands/Other Waters of the U.S.

There are no wetlands on the proposed replacement site.

Land Use/Ownership Patterns/Property Values/Community Livability

The replacement site is adjacent to the Turnagain Arm conversion site; land use patterns are the same as described above.

Circulation/Transportation

The replacement site is adjacent to the Turnagain Arm conversion site; circulation and transportation issues are the same as described above.

Plants/Animals/Fish and State or Federal Listed or Proposed Species

Plants

There are no plants of special concern located on the replacement site.

Animals

There are no animals of special concern on the replacement site.

Fish

There are no fish or fish habitat on the replacement site.

Federally Listed Species/Habitat of Special Concerns

There are no habitats of special concern on the replacement site.

Unique Ecosystems/World Heritage Sites/Old-Growth Forests/Et cetera

There are no unique ecosystems, world heritage sites, or old-growth forests located at the replacement site.

Unique or Important Fish Habitat

There is no unique or important fish habitat located at the replacement site.

Fish/Essential Fish Habitat (EFH)

There is no EFH within the replacement site.

Invasive Species (Plant or Animal)

The same invasive species discussed for the conversion sites are relevant for the proposed replacement site.

Recreation Resources

Recreation Resources

The replacement site is adjacent to CSP; CSP recreational resources were described above.

The replacement site is located between Seward Highway MP 106 and MP 107. The recreation sites listed in the vicinity of the conversion sites are also in the vicinity of the replacement site.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers

The replacement site is not located within any national park or preserve or adjacent to any monument or wild and scenic river.

State Refuges/Critical Habitat Areas/Sanctuaries

The replacement site is not located within any refuge, critical habitat area, or sanctuary.

Accessibility for Populations with Disabilities

The replacement site is currently part of the highway ROW.

Overall Aesthetic/Special Characteristics/Features

The replacement site is adjacent to CSP and Turnagain Arm and has the same overall aesthetic values described for the conversion site.

Historic/Cultural Resources

There are no historic/cultural resources on the replacement parcel.

Socioeconomics

The replacement parcel is currently used as ROW for the Seward Highway.

Minority and Low-Income Populations

There are no identified minorities or low-income populations located near the replacement site.

Energy Resources (geothermal, fossil fuels, et cetera)

There are no energy resources identified on the replacement site. The site is currently part of the Seward Highway ROW. Fossil fuels are used by vehicles using the highway.

Other Agency or Tribal Land Use Plans or Policies

There are no agency/tribal land use plans for the replacement site.

Contamination/Hazardous Materials

There are no land/structures or contaminated sites located at the proposed replacement site.

Other Important Environmental Resources to Address

Federal Recreation Areas

The proposed replacement site is not in a federal recreational area.

Navigable Waters

There are no navigable waters on the replacement site.

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CHAPTER 4—ENVIRONMENTAL IMPACTS

This section discusses the direct effects of the conversion of park lands to transportation use and the relinquishment of the replacement parcel to CSP. It also discusses the indirect effects associated with construction and operation of the highway improvements. Figures providing additional information on the scope of the highway improvements are provided in Appendix F.

No Action Alternative

The No Action Alternative, involving no conversion of federal LWCF coverage from any of the lands in CSP necessary to construct the proposed highway realignment, would have little or no environmental effect with regards to the resource categories listed below.

Proposed Conversion Parcels

Geological Resources

Direct impacts on 3.97 acres of mudflats will occur within fill limits and be converted to transportation use include fill of the area, substantially altering the landform. Soil erosion during construction will be mitigated through the implementation of best management practices (BMPs) under a Stormwater Pollution Prevention Plan (SWPPP).

Indirect effects associated with construction of the Seward Highway improvements include placement of approximately 2,000,000 cubic yards of fill into the Turnagain Arm. This fill will convert a marine intertidal area to a developed area used as a transportation corridor. The project design has avoided and minimized effects on Waters of the U.S. to the extent practicable. The currently proposed highway and railroad realignments were shifted 110 feet inland and the fill placement was reduced by 7 acres (from 45 to 38 acres) as compared with the proposed action in the 2004 CE. However, the need to realign the highway and rail line to improve the geometry of these facilities and the location of the facilities between the steep topography of CSP, the protected Dall sheep habitat at Windy Corner, and the waters of Turnagain Arm result in no practical alternatives to fill in intertidal areas.

Air Quality

The conversion of lands would not have a long-term effect on air quality.

Indirect effects would include short-term and temporary impacts on air quality, as a result of the proposed project, due to construction activities and equipment. These temporary effects would be felt by local recreationalists, and perhaps within the nearby community of Rainbow. No increase in traffic is expected to occur as a result of the proposed improvements. The potential for fewer severe accidents in this segment could reduce air emissions, as a result of fewer highway closures resulting in cars idling in place on the highway during closures.

Sound/Noise Impacts

The direct impacts of the conversion would not affect noise.

Indirect effects of the road improvements would include short-term increases in noise during construction. This noise increase would be audible to local recreationalists and to residents of the nearby community of Rainbow. No long-term changes in traffic volumes or traffic noise are anticipated.

Water Quality/Quantity

The conversion would result in fill on the conversion parcels in Turnagain Arm and could result in short-term increases in sediment in adjacent waters during and immediately following construction. Extraction of materials from the two upland sites could also result in higher sediment loads in runoff related to rainstorms. The proposed project would be constructed in compliance with the DEC's Construction General Permit, and water quality impacts would be mitigated through the implementation of best management practices (BMPs) under a SWPPP.

The indirect effects from road improvements are expected to be minimal. Construction effects on water quality would be mitigated through BMP implementation. The amount of impervious surface will increase, as additional parking and access lanes are developed. Drainage from the road would flow into roadside drainage ditches or vegetated areas, before discharging into Turnagain Arm. The area affected by the highway improvements contributes a small fraction of the total amount of stormwater discharging into Turnagain Arm. The project is not anticipated to have any long-term adverse effects on water quality/quantity within Turnagain Arm.

Stream Flow Characteristics

There are no streams on the conversion parcels and no direct effects on stream flow characteristics.

Culverts in the highway alignment would be upgraded to 36-inch culverts as part of the project. Although volumes of stormwater generated are well below the capacity of the 24-inch culverts, the 36-inch culvert would be used for freshwater streams, due to the potential for icing.

Marine/Estuarine

As described above, the intertidal mudflat parcels will be filled for development of the realigned highway and railroad. Approximately 300,000 cubic yards of fill would be placed on the converted mudflat parcels.

Indirect impacts of the road improvements would include approximately 2,000,000 cubic yards of fill placed within 26.3 acres of intertidal mudflats. This would have a minor adverse effect on the marine environment. As described above, the existing location of the transportation corridor makes avoiding the marine areas impractical. The adverse effect is minor in the context of the marine habitat available in Turnagain Arm. Adverse effects on marine habitat are discussed in more detail under the beluga whale discussion below.

Floodplains/Wetlands/Waters of the U.S.

The conversion parcels are not in special flood hazard areas. Direct effects on floodplains will be minimal.

Indirect effects of the road improvements project include approximately 2,000,000 cubic yards of fill to be placed within 26.3 acres of Turnagain Arm intertidal mudflats. The existing location of the transportation corridor makes avoiding wetlands and Waters of the U.S. impractical. Design efforts have already avoided and minimized potential wetland impacts, to the greatest extent practicable. The DOT&PF will work with the USACE to determine appropriate mitigation for impacts to wetlands and Waters of the U.S. Mitigation will be satisfied by either an in-lieu fee payment and/or the purchase of credits from an approved wetlands mitigation bank. The road improvements will occur outside special flood hazard zones and will not require a flood hazard permit. Indirect effects on floodplains are anticipated to be minor.

Land Use/Ownership Patterns/Property Values/Community Livability

Conversion of the CSP parcels will change use of those areas from recreation areas to transportation uses. The specific areas to be converted had low recreation use levels. Land ownership will change with DOT&PF and ARRC obtaining land from DNR south of the highway into Turnagain Arm and DNR obtaining land north of the realigned highway adjacent to CSP. Property values and community livability are not expected to be affected, although the proposed MP 109 material site may temporarily affect livability in the nearby community of Rainbow.

Indirect effects from the highway improvements would be beneficial to community livability by improving the traffic operations and safety on the Seward Highway to and from Anchorage.

Circulation/Transportation

Land conversion as a result of the project would not affect long-term traffic circulation or transportation and would instead indirectly result in substantial and beneficial impacts to traffic circulation and transportation. Some temporary traffic delays would occur during construction.



Photograph 11: Vegetation on South Side of Seward Highway

This segment of the Seward Highway has a high rate of high-severity accidents. The improvements are designed to improve traffic operations and safety by allowing slower traffic to exit the highway through lanes to sightsee and view wildlife. This will reduce conflicts associated with traffic slowing or stopping in the through lanes and with travelers parking on the shoulders and exiting their cars near or into through traffic.

Plants/Animals/Fish and State or Federal Listed or Proposed Species

Plants

The conversion would result in removal of vegetation from the proposed upland conversion parcels. The vegetation to be cleared is common in the area and would not result in a substantive loss of vegetation or habitat in the area.

The proposed conversion would not affect federal or State listed plants or proposed species.

Indirect effects on plants from the highway improvements construction would be minor. A limited amount of vegetation exists south of the Seward Highway. This vegetation would be lost during realignment of the highway and rail line.

Animals

The proposed conversion would affect habitat for a range of species, including birds, small mammals, and those species listed in Chapter 3, such as Dall sheep, moose, and black bear. Under a worst-case scenario involving complete excavation of both proposed material sites, approximately 35 acres of undisturbed, mixed upland habitat would be affected. However, it should be noted that CSP occupies 495,200 acres, most of it uplands. The proposed conversion is not expected to significantly affect any species through reduction of available habitat.

Per input from ADF&G on avoidance and minimization of potential impacts to Dall sheep, DOT&PF has designed the project to swing out into Turnagain Arm, rather than cutting further into the point at Windy Corner. In addition, the proposed facilities on the replacement parcel have been designed to keep a greater separation distance between wildlife viewers and Dall sheep.

Fish

Effects on fish habitats are discussed under EFH below.

Federally Listed Species/Habitat of Special Concerns

The only federally listed species is the Cook Inlet population of beluga whales. The whales and their critical habitat, including Turnagain Arm, are discussed below.

The Cook Inlet population of beluga whales is the only federally listed species. Turnagain Arm is designated as critical habitat for these whales. Conversion of 3.97 acres of mudflats within fill limits will occur in Turnagain Arm and result in a minimal loss of habitat.

The indirect effects of the road improvements would result in 26.3 acres of tidelands being filled, other construction occurring adjacent to Turnagain Arm, and future occasional rescue vehicle use from the proposed launch area. A biological assessment was conducted to identify and assess potential impacts to the Cook Inlet population of beluga whales (Appendix G). The findings of

the biological assessment and the determination of project effects under the Endangered Species Act are summarized in Table 6.

Table 6: Potential Effects on Cook Inlet Beluga Whales

Action	Potential Effect	Mitigation Measures Proposed?	Determination
Fill	• habitat alteration • pollution • reduction in availability or quality of prey species • injury or mortality • noise	Yes	May affect; not likely to adversely affect
Blasting	• habitat alteration • reduction in availability or quality of prey species • noise • injury or mortality	Yes	May affect; not likely to adversely affect
Use of Rescue Vessel	• noise • illegal harassment • injury or mortality	Yes	May affect; not likely to adversely affect

Mitigation Measures

The DOT&PF will follow the following mitigation measures to protect beluga whales and their critical habitat:

1) The proposed highway and railroad realignments were shifted 110 feet (34 meters) inland and the fill placement was reduced by 7 acres (originally proposed to fill 45 acres).

2) In-water fill placement will not occur from April 1 through June 15.

3) Fill placement will only occur during daylight hours and will be restricted to within six hours of low tide (three hours before and/or after local low tide).

4) On-shore blasting will only occur during daylight hours and will be restricted to within six hours of low tide (three hours before and/or after local low tide).

5) Blasting activities will not occur at or below the intertidal zone.

6) Protected Species Observers (PSOs) will be on-site to accurately identify beluga whales at safety zone distances identified for the 160 decibels (dB) and the 120 dB isopleths (Table 7).

Table 7: The Proposed Impulsive (160 dB) and Continuous Noise (120 dB) Activities in Turnagain Arm and the Required Safety Zones

Activity	Threshold (dB re 1 µPa$_{rms}$ SPL)	Safety Zone
Blasting	160	1.5 kilometers (4,921 feet)
Fill and Pre-Fabricated Concrete Slab Placement	120	300 meters (984 feet)

rms = root mean square; SPL = sound pressure level; µPa = micropascal
Source: National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service, 2015b

7) PSOs will scan the 160 dB safety zone prior to impulsive acoustic output and the 120 dB safety zone prior to continuous acoustic output for beluga whales and other marine mammals for 30 minutes, before commencing in-water noise activities.

   a. If one or more beluga whales or other marine mammals are present within the 160 dB safety zone for impulsive noise or 120 dB safety zone for continuous noise during this 30-minute observation period, in-water noise activities shall not begin until all marine mammals vacate the safety zone of their own accord or until no marine mammals have been observed in the safety zone for 30 minutes.

   b. PSOs will continuously monitor the 160 dB safety zone during work producing impulsive noise and the120 dB safety zones during work producing continuous noise to prevent takes of any marine mammals.

   c. Should the activity producing in-water noise cease for more than 60 minutes, PSOs shall scan the 160 dB or the 120 dB safety zone for beluga whales and other marine mammals for 30 minutes before again commencing work resulting in in-water noise of more than 120 dB.

8) Blasting activities will only occur when all marine waters within 4,921 feet (1.5 kilometers) of the blasting site are visible by the PSO.

9) PSOs will have binoculars, charts, a compass, and a rangefinder (or equivalent) and have the ability to use these instruments to plot the positions of all observed marine mammals within 328 feet (100 meters) of the marine mammals' locations and shall keep a record of all marine mammal sightings and associated data.

10) PSOs will have the authority and means (direct communication) to shut down or stop activities producing in-water noise capable of harassing a marine mammal when a marine mammal(s) is detected within or is about to enter the 160 dB safety zone (for impulsive noise) or the 120 dB safety zone (for continuous noise).

11) PSOs will work shifts of four hours or less, with at least a one-hour break between shifts, and shall not work more than 12 hours in a 24-hour period.

12) PSOs will stop in-water noise-producing activities immediately, if one or more beluga whales or other listed marine mammals enter the safety zone for the equipment in use or, in the opinion of the PSO, are about to enter that safety zone.

13) A preliminary report on activities and results of the monitoring and mitigation program will be submitted to the NMFS Alaska Regional Office (AKR) within 90 days after terminating the construction season.

    a. The report will provide summaries of the dates and locations for construction operations and a copy of the completed marine mammal observation spreadsheet.

    b. All technical reports will provide full documentation of the methods, results, and interpretation for all monitoring tasks.

14) The final report on activities and results of the monitoring and mitigation program will be submitted to NMFS AKR within 120 days of terminating the construction season.

15) Access to the rescue-craft ramp will be controlled via a locked gate and/or locked posts preventing access and use by the general public.

16) Permanent signs will be posted and maintained at the ramp to inform the public that the ramp is only for emergency rescue-craft and authorized use, as determined by DOT&PF.

17) Staging areas will be located in upland areas adjacent to the proposed project area.

18) The DOT&PF will develop and implement a SWPPP and Spill Prevention Control and Countermeasure Plan.

Unique Ecosystems/World Heritage Sites/Old-Growth Forests/Et cetera

No direct or indirect impacts to unique ecosystems, world heritage sites, or old-growth forests are anticipated.

Unique or Important Fish Habitat

Fish/Essential Fish Habitat (EFH)

Conversion of the upland parcels would not affect EFH. Conversion of the mudflats parcels has the potential to adversely affect EFH, due to a loss of 3.97 acres of marine habitat will be converted and filled.

Construction of the highway improvements requires moving the transportation corridor into Turnagain Arm, resulting in indirect effects on EFH.

The DOT&PF will abide by the following recommendations to minimize the potential for effects to EFH:

- In-water construction work will be avoided from April 1 through June 15 to avoid disturbances to out-migrating salmonid fry and smolts.
- In-water work and intertidal construction work will be conducted at low tide, to the extent possible; fill material used in the project will come from clean shot rock. Contaminated materials, if unexpectedly encountered, will not be used for fill.
- Measures will be taken to prevent the trapping of fish on embankment surfaces and during construction activities.

After review, NMFS has determined that no further consultation regarding EFH is needed (Appendix H).

Invasive Species (Plant or Animal)

Roads, along with waterways, are considered primary transport vectors for many invasive species. Clean fill would be used on the converted mudflats to reduce the potential for introduction of invasive species. Excavation of material sites would expose currently vegetated areas to disturbance and provide an opportunity for the spreading of invasive plants. Exposed soils at the material site would be stabilized following construction and seeded with a DOT&PF-approved mix of grasses, subject to DNR's approval of this measure in a reclamation plan. Exposed bedrock or riprap would not be seeded and is not expected to promote invasive species.

Indirect effects associated with construction of the highway improvements could occur, due to disturbance of soils. Exposed roadside soils would be stabilized following construction and seeded with a DOT&PF-approved mix of grasses. This should minimize the potential for the spread of invasive species.

Recreation Resources

Recreation Resources

The proposed conversion would have a minimal effect on recreation and recreational resources. The mudflats area is currently accessible only at low tide and is not actively used for recreation. The two upland material sites are not crossed by trails or near parking areas and have low levels of use. Although the conversion would remove federal LWCF coverage from 39.56 acres of the 495,000-acre park, the lands being converted are not high-use areas as compared with other areas of the park. This loss will be partially mitigated through the 14.7 acres of ROW relinquished to CSP and construction of recreation facilities on the 14.7 acres.

Indirect effects on recreation from the highway improvements project are expected to be minimal. The realignment of the transportation corridor encroaches into Turnagain Arm and

non-Section 6(f) tidelands that are within the CSP boundary, but the area affected is not expected to reduce uses of Turnagain Arm. The highest level of use in the area is for sightseeing and hiking. The highway provides access to trailheads and scenic viewpoints and would continue to provide that access.

The proposed highway realignment, material site development and reclamation, and replacement parcel development are all in accordance with the long-term CSP goals as stated in the CSP Management Plan.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers

The proposed conversion would not directly or indirectly affect national parks, preserves, monuments, or wild and scenic rivers.

State Refuges/Critical Habitat Areas/Sanctuaries

The proposed conversion would not directly or indirectly affect state refuges or sanctuaries. Critical habitat for the Cook Inlet population of beluga whales was discussed previously.

Accessibility for Populations with Disabilities

The sites to be converted have no ADA facilities. The replacement parcel will provide two new parking and viewing areas along the highway, including ADA-accessible parking spaces and interpretive signage.

Overall Aesthetic/Special Characteristics/Features

The Seward Highway is a National Scenic Byway, characterized by rugged, steep mountains surrounding the waters of Turnagain Arm. The proposed conversion would affect overall aesthetics and characteristics of the project area. Conversion of the mudflats to transportation use will change the character of the scenic Turnagain Arm shoreline in the immediate vicinity of the improvements. The shoreline was previously modified when the highway and rail line were originally constructed; most of the existing cliff face between MP 115 (Potter Marsh) and MP 103 (Indian) is due to blasting and rock excavation for original construction of the highway and railroad. The long-term effect on the aesthetics and features would be minor in context as it is similar to other areas of the highway.

The conversion of two upland areas to material sites would affect the overall aesthetics in these areas. The material sites would introduce a more developed industrial use in an otherwise naturally vegetated undeveloped setting. Designs for the material sites include measures to mitigate the effect on the viewshed and aesthetics, including vegetative and topographic screening. Although this conversion would result in adverse effects on the aesthetics in these areas, the effect is minor in the context of the overall park and along the Scenic Byway.

The indirect effects of the highway and rail realignment would move the transportation corridor farther from the steep rocky slopes of CSP and would encroach into Turnagain Arm. Overall effects on aesthetics would be minor in the context of the corridor. The provision of parking and

areas for scenic views of the CSP cliffs and Turnagain Arm would mitigate the change in aesthetics.

Historic/Cultural Resources

The proposed conversion would have no direct impact on significant historic or cultural resources.

Indirect effects from highway construction would occur where ANC-04057, a significant historic property, would be realigned for approximately 2.0 miles of the 36.6-mile corridor, moving the corridor a maximum of 425 feet from its current alignment at the proposed Gorilla Rock parking area and turnout. The grade of the railroad would remain below and parallel to the existing highway and continue to follow along the shoreline of the Turnagain Arm. The reconstructed single-track railroad would contain the same basic features as before, but with replacement in-kind materials. The State Historic Preservation Office has concurred that this would result in no adverse effect to ANC-04057 (Appendix E).

Socioeconomics

The proposed conversion will have no direct impacts of the social or economic factors. The parcels being converted have low use levels and would have negligible impacts on recreation uses and users.

Indirect socioeconomic effects from the highway improvements include increased employment and income from construction activities and spending. The improved traffic flow and safety is a social benefit, as this highway is a key travel route for residents who live south of the project area and commute to Anchorage to work, shop, and conduct business.

Minority and Low-Income Populations

The conversion parcels are all on CSP land and would have no direct impacts on any populations.

Indirect effects from the highway improvement project are not anticipated to result in disproportionate effects on low-income or minority populations. All travelers using the Seward Highway will be adversely affected by construction delays in the short-term during construction and will benefit from the improvements in the long-term.

Energy Resources (geothermal, fossil fuels, et cetera)

The proposed conversion would not affect energy resources. Construction activities at the material sites would require use of some fossil fuels; however, this would not be enough to affect supply or prices.

Indirect effects from highway construction would result in more use of fossil fuels. These effects are expected to be minor and would not affect fuel supply or prices.

Other Agency or Tribal Land Use Plans or Policies

The proposed conversion would not directly or indirectly affect other agency or tribal land use plans or policies.

Contamination/Hazardous Materials

There are no known contaminated sites or hazardous materials on the proposed conversion parcels.

Indirect effects from highway construction are possible. There are no known contaminated sites or hazardous materials in the proposed project area, and the potential for adverse effects is minimal.

Other Important Environmental Resources to Address

Federal Recreation Areas

The proposed conversion would not have direct or indirect effects on federal recreation areas.

Navigable Waters

Proposed conversion of 3.97 acres of mudflats within fill limits would affect the navigable waters of Turnagain Arm. The mudflats parcels are adjacent to the existing transportation corridor and shoreline, and effects on navigation would be negligible.

Indirect effects from realigning the highway and the rail line into Turnagain Arm will result in the loss of almost 30 acres of tidal areas. This would have a minor adverse effect on navigable waters but would not affect navigability on Turnagain Arm overall. There would also be a beneficial indirect effect on navigation from construction of a new emergency access for rescue crews responding to people or vessels in distress in Turnagain Arm.

Proposed Replacement Parcel

Geological Resources

The replacement parcel is currently within the Seward Highway ROW. The area will be regraded and redeveloped with parking, a viewing shelter, interpretive signs, a boardwalk, a trailhead, and a vault toilet. The direct effects on geological resources and landforms from development of the replacement parcel would be negligible.

Indirect effects on geological resources from construction of the road improvements were discussed under the conversion parcels discussion.

Air Quality

Direct impacts from construction of recreation improvements on the replacement parcel would be minor and adverse in the short term in the vicinity of work areas, due to construction activities and equipment emissions. No long-term effects are anticipated.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Sound/Noise Impacts

Direct impacts from construction of recreation improvements on the replacement parcel would be minor and adverse in the short term in the vicinity of work areas, due to construction activities and equipment noise. No long-term effects are anticipated.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Water Quality/Quantity

The proposed conversion would have minimal direct effects on water quality or quantities. The replacement parcel contains a single, small, unnamed drainage. This feature currently drains into Turnagain Arm via a culvert under the highway. The drainage would be rerouted to create a water feature with a boardwalk on the replacement parcel. Because of this redesign, water quality is anticipated to be improved, as the water would have a higher residence time and lower energy, allowing sediment and matter to settle out of the water prior to discharge to Turnagain Arm.

During construction, water quality may be temporarily impacted by increased sediment and soil erosion. An Erosion and Sediment Control Plan will be implemented on-site to minimize the potential for water quality effects.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Stream Flow Characteristics

Direct effects on stream flow on the replacement parcel are minor. Drainage from north of the highway would continue to discharge to Turnagain Arm but would be detained on the replacement parcel prior to discharge.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Marine/Estuarine

Construction on the replacement parcel would have minimal direct effects on the marine environment. Drainage on the replacement parcel would continue to discharge into the marine environment, but water quality of the discharge may be improved as the water is retained on the parcel prior to discharge.

Indirect effects on the marine environment from the road improvement project are discussed above under the conversion parcels discussion.

Floodplains/Wetlands/Other Waters of the U.S.

The replacement parcel is in Zone D, which has an undetermined flood risk. Construction of the proposed improvements would not require a flood hazard permit. Since the area is currently developed as part of the highway corridor, there would be no change in flood hazards from the proposed improvements. There are no wetlands within the replacement parcel.

Indirect effects on floodplains and wetlands from fill associated with the road improvement project are discussed above under the conversion parcels discussion.

Land Use/Ownership Patterns/Property Values/Community Livability

Land use on the replacement parcel would change from transportation use to recreation use. Property values and community livability are not expected to be directly impacted from the conversion.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Circulation/Transportation

The replacement parcel will contain parking areas and other recreation areas. Circulation would change, with turn pockets to aid access and egress into the new parking area. Transportation and circulation would be improved by providing an area for sightseers and wildlife viewers to get off the highway through lanes in a safe and efficient manner.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Plants/Animals/Fish and Federal Listed or Proposed Species

Plants

The replacement parcel is currently within the highway ROW. There are no direct effects on plants.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Animals

The replacement parcel is currently within the highway ROW. There are no direct effects on animals.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Fish

The replacement parcel is currently within the highway ROW. There are no direct effects on fish.

Indirect effects on fish are discussed above under the conversion parcels discussion.

Federally Listed Species/Habitat of Special Concerns

The replacement parcel is currently within the highway ROW. There are no direct effects on the Cook Inlet population of beluga whales or their critical habitat.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Unique Ecosystems/Old-Growth Forests/Et cetera

The proposed conversion would have no effect on unique ecosystems, world heritage sites, or old-growth forests.

Unique or Important Fish Habitat

There is no fish habitat on the replacement parcel. Indirect effects from the highway improvements are discussed under EFH below.

Fish/Essential Fish Habitat (EFH)

There would be no direct effects on fish habitat related to the replacement parcel. Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Invasive Species (Plant or Animal)

Reconstruction of the replacement parcel could result in a low potential for the introduction of invasive species. However, soils will be stabilized as quickly as possible, and weed-free seed would be used for vegetated areas.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Recreation Resources

Recreation Resources

The replacement parcel would partially offset the conversion of CSP parcels by providing an additional 14.7 acres to the park. The replacement parcel would be reconstructed to contain recreation facilities, including parking, improved trailhead access, a vault toilet, a viewing shelter, and a boardwalk. This would be a beneficial effect on recreation resources.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers

The proposed conversion would have no direct or indirect effect on national parks, preserves, monuments, or wild and scenic rivers.

State Refuges/Critical Habitat Areas/Sanctuaries

The proposed conversion would have no direct or indirect effect on state refuges or sanctuaries. Effects on critical habitats were discussed previously.

Accessibility for Populations with Disabilities

The replacement parcel would be reconstructed to include parking facilities, interpretive signage, and ADA-accessible features, including some small paths and scenic viewpoints. This would result in a beneficial effect on accessibility.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Overall Aesthetic/Special Characteristics/Features

The replacement parcel is currently part of the Seward Highway ROW. Reconstruction of the parcel into a new parking and interpretive and wildlife viewing area would not adversely affect the overall aesthetics of the area. The new parking and viewing areas will provide new opportunities for users to view the aesthetic features of the area.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Historic/Cultural Resources

The replacement parcel is currently part of the developed Seward Highway ROW. Redevelopment of the area is not anticipated to affect cultural resources.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Socioeconomics

Construction of facilities on the replacement parcel would have short-term minor beneficial effects on employment and wages associated with construction expenditures. The new facilities and transfer of the site to CSP would not directly affect the economy or social conditions.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Minority and Low-Income Populations

Construction of facilities on the replacement parcel and transfer of the site to CSP would not affect any populations.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Energy Resources (geothermal, fossil fuels, et cetera)

Construction activities on the replacement parcel would require some quantity of fossil fuels for construction activities; however, this would not be enough to affect supply or prices.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Other Agency or Tribal Land Use Plans or Policies

The proposed conversion would have no direct or indirect effects on other agency or tribal land use plans and policies.

Contamination/Hazardous Materials

The replacement parcel is not known to contain any contaminated sites or hazardous materials, and no direct effects are anticipated from conversion.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

Other Important Environmental Resources to Address

The proposed conversion of the replacement parcel into parkland would have no direct or indirect effect on other important environmental resources not mentioned previously.

Federal Recreation Areas

The proposed conversion of the replacement parcel into parkland would have no direct or indirect effect on federal recreation areas.

Navigable Waters

The proposed conversion would have no direct effect on navigable waters within the replacement parcel, as there are no navigable waters within the replacement parcel.

Indirect effects from the road improvement project are discussed above under the conversion parcels discussion.

CHAPTER 5—COORDINATION AND CONSULTATION

The following public outreach has been conducted for the Seward Highway, MP 105 to MP 107, Windy Corner Project. The conversion was discussed as part of the highway project meetings (Table 8).

Table 8: Public Outreach

Date	Type of Meeting	Purpose
February 18, 2013	Girdwood Board of Supervisors	Project kick-off
March 4, 2013	Public Meeting #1	Project kick-off
May 9, 2013	Turnagain Arm Community Council	Project kick-off
May 28, 2013	Technical Advisory Group (TAG) Meeting #1	Initial agency feedback on preliminary scope
July 10, 2013	Alaska Railroad Corporation (ARRC) Coordination Meeting	Initial feedback from ARRC on preliminary scope
August 8, 2013	TAG Meeting #2	Collect agency input on design options
August 27, 2013	State of Alaska Department of Natural Resources (DNR)	Discussions with DNR on design options and necessary permitting
November 1, 2013	TAG Meeting #3	Collect agency input on design options
November 2, 2013	Girdwood 2020	Present concept design to Girdwood 2020
April 9, 2014	TAG Meeting #4	Discuss design details and environmental work
April 24, 2014	Public Meeting #2	Present and answer questions about current design
May 8, 2014	Turnagain Arm Community Council	Present and answer questions about current design
June 4, 2015	TAG Meeting #5	Discuss design details and changes; solicit agency input

Agency scoping was also conducted as part of the Windy Corner Improvement project. Agency scoping letters were sent on March 5, 2013 to relevant resource agencies. These letters requested feedback by April 1, 2013. In addition, an agency scoping meeting was held on March 20, 2013.

Appendix I contains all public outreach materials associated with each event listed above. Additionally, a Facebook page and website were also developed for this project.

The preparers of this EA are listed in Table 9.

Table 9: Environmental Assessment Preparers

Name	Education/Experience	Role
DOWL Staff		
Maryellen Tuttell	M.S., Food and Resource Economics 28 years	Environmental Assessment Lead
Erin Gora	B.S., Marine Biology 5 years	Co-Lead Author
Patrick Whitesell	M.S., Environmental Science, Policy, and Management 14 years	Co-Lead Author
Lucy Zuccotti	M.A., Physical Anthropology 15 years	Cultural Resources
Aaron Christie	M.S., Environmental Engineering 14 years	Design Engineer
Steve Noble	M.S., Civil and Environmental Engineering 19 years	DOWL Project Manager
Kristen Hansen	M.S., Environmental Science 17 years	Environmental Manager/ Quality Assurance
State of Alaska Department of Transportation and Public Facilities (DOT&PF) Staff		
Tom Schmid	B.S., Mechanical Engineering 19 years	DOT&PF Project Manager
Mark Boydston	M.S., Agronomy 11 years	DOT&PF Environmental Analyst/ Quality Assurance

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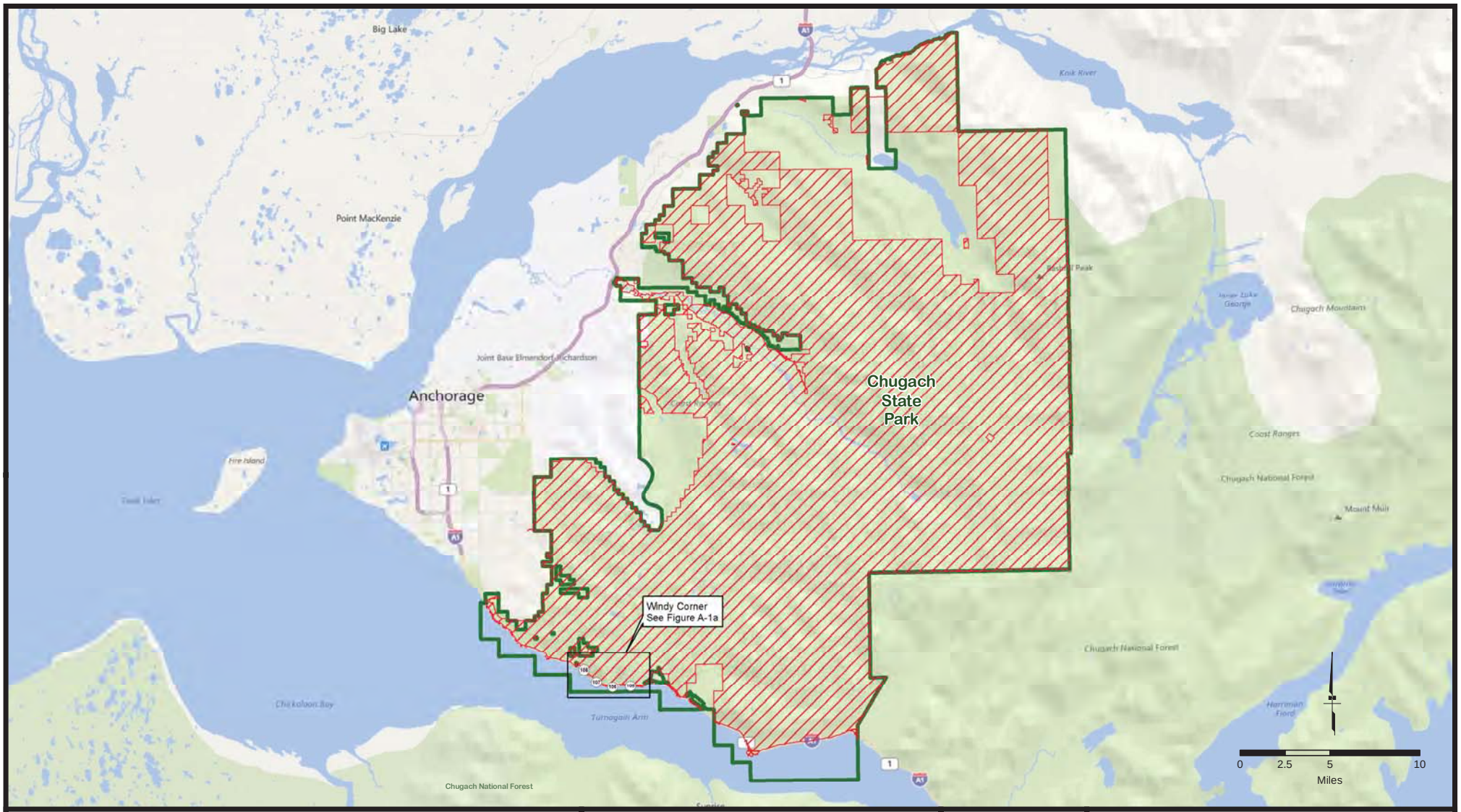
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APPENDIX A

Land and Water Conservation Fund Section 6(f) Maps

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Chugach State Park Boundary and Protected LWCF Lands

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

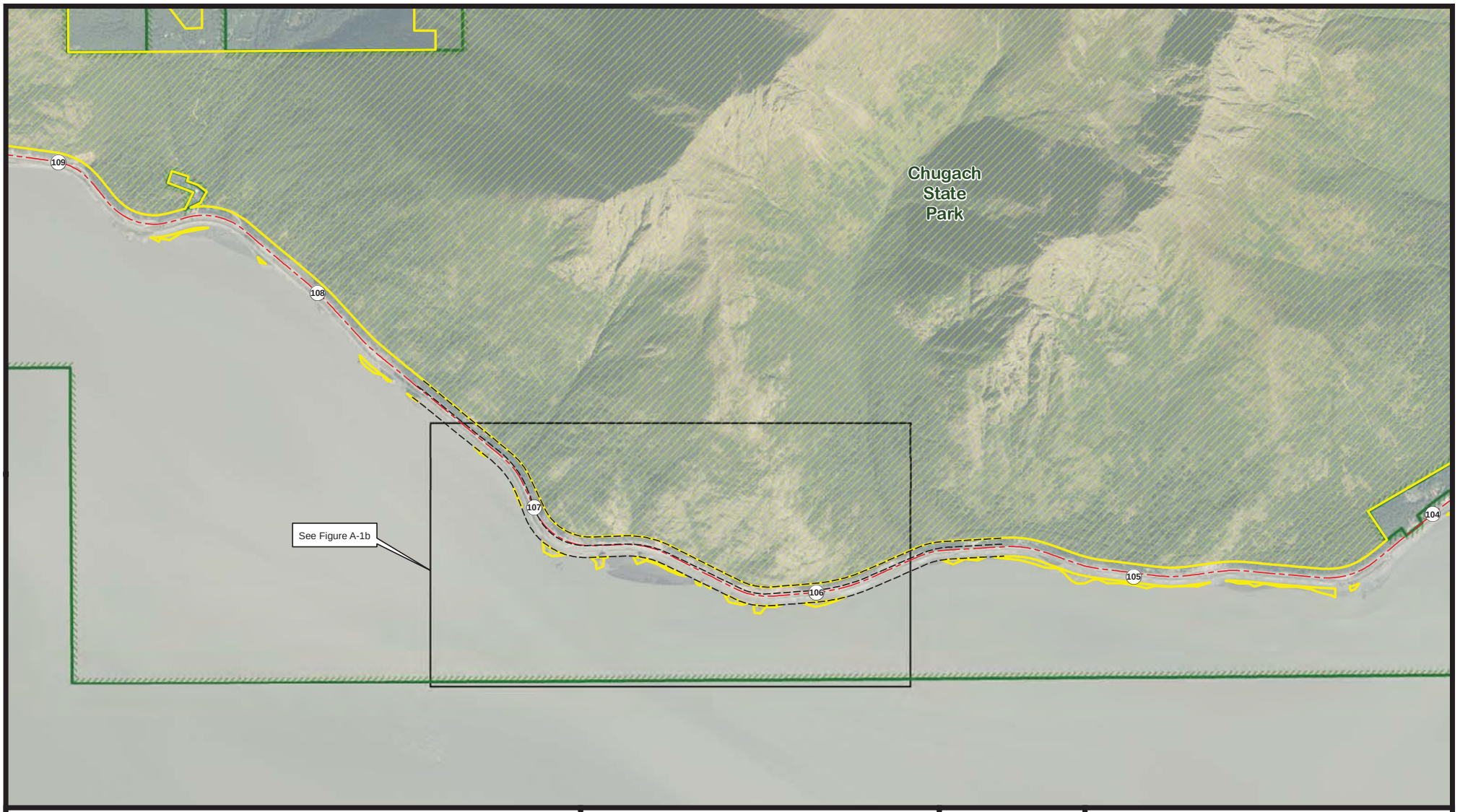
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE A-1

P:\Projects\D61278\GIS\2015_08_WC\FigA-1.mxd Sep 03, 2015 User: zricketts



Chugach State Park Boundary and Protected LWCF Lands (Project Area)

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

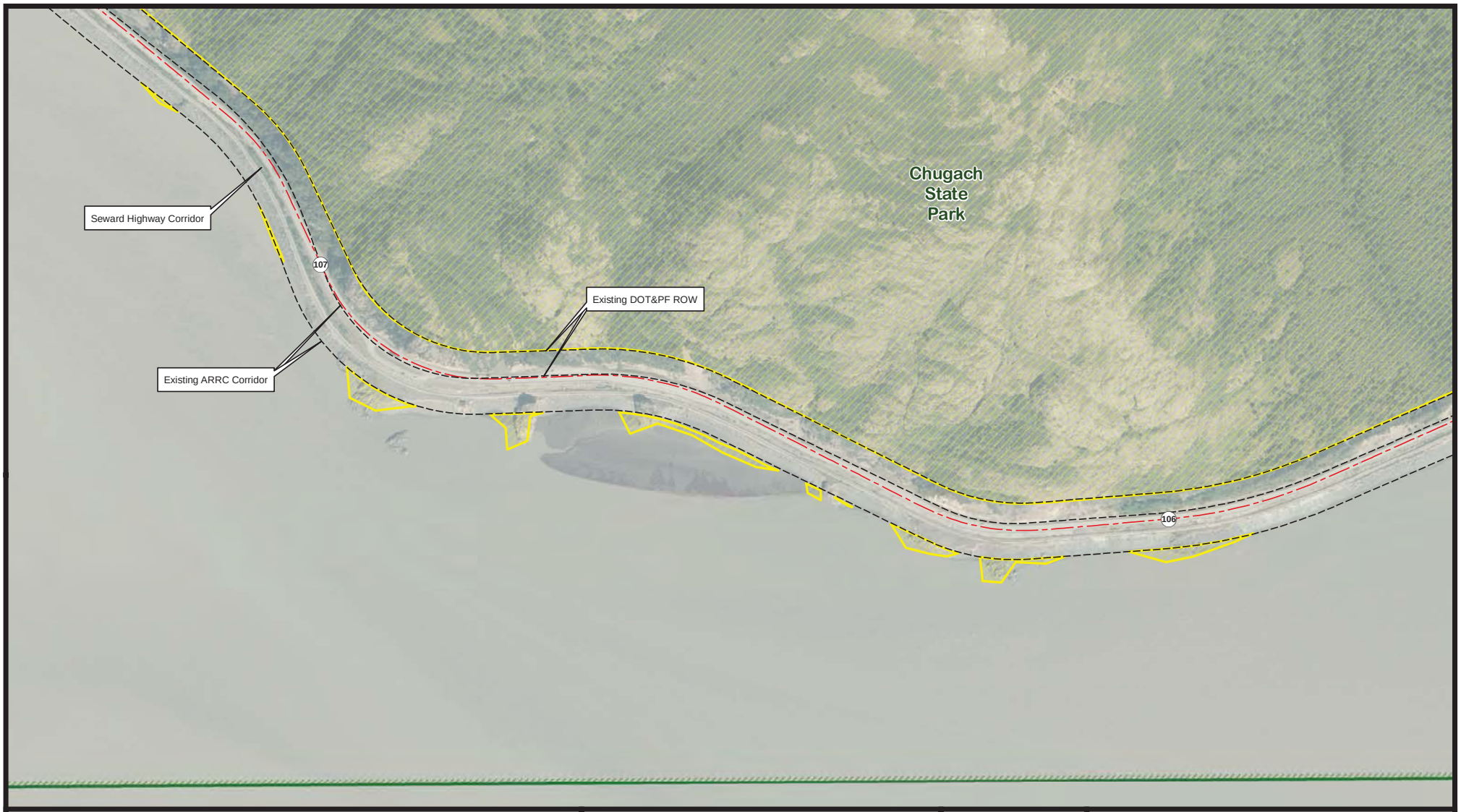
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE A-1a

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Chugach State Park Boundary and Protected LWCF Lands (Project Area)

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

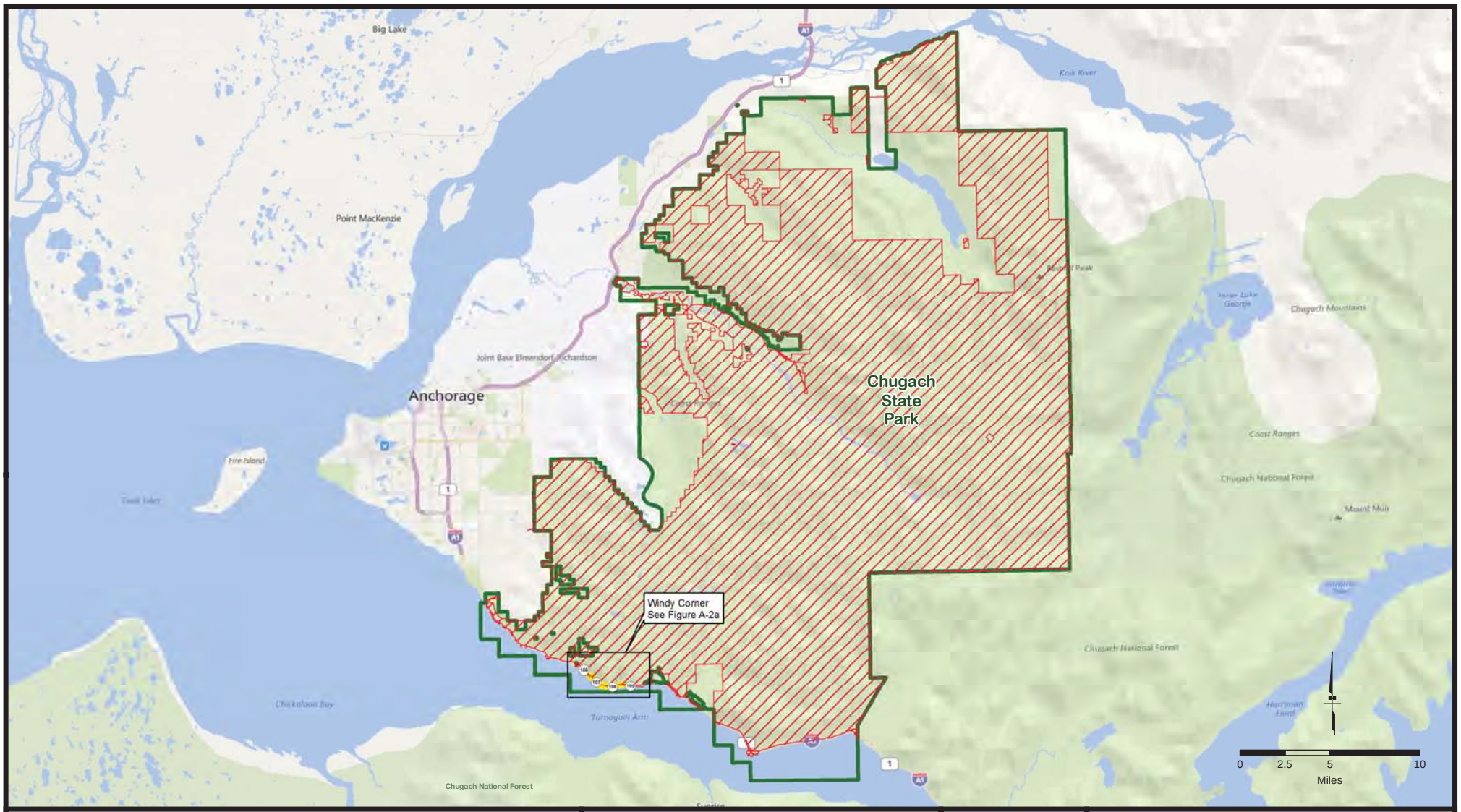
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE A-1b

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Milepost
Section 6(f) Protected Lands
Chugach State Park

0 2.5 5 10 Miles

Chugach State Park Boundary and Protected LWCF Lands After Conversion

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

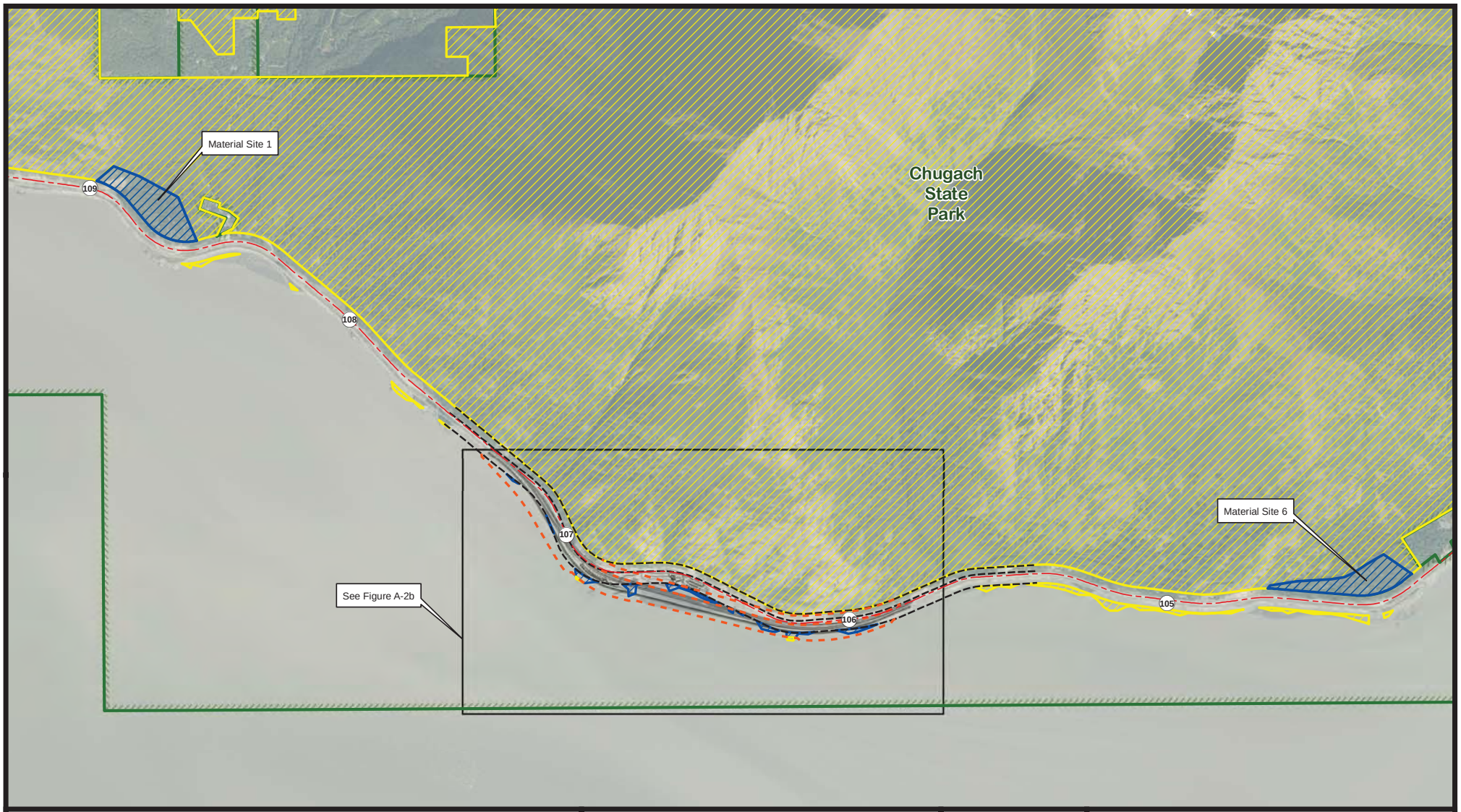
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE A-2

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Chugach State Park Boundary and Protected LWCF Lands After Conversion (Project Area)

T16N R1W Sec 36 E2NW4 NE4, NW4SE4, NE4SW4
Seward Meridian, Alaska

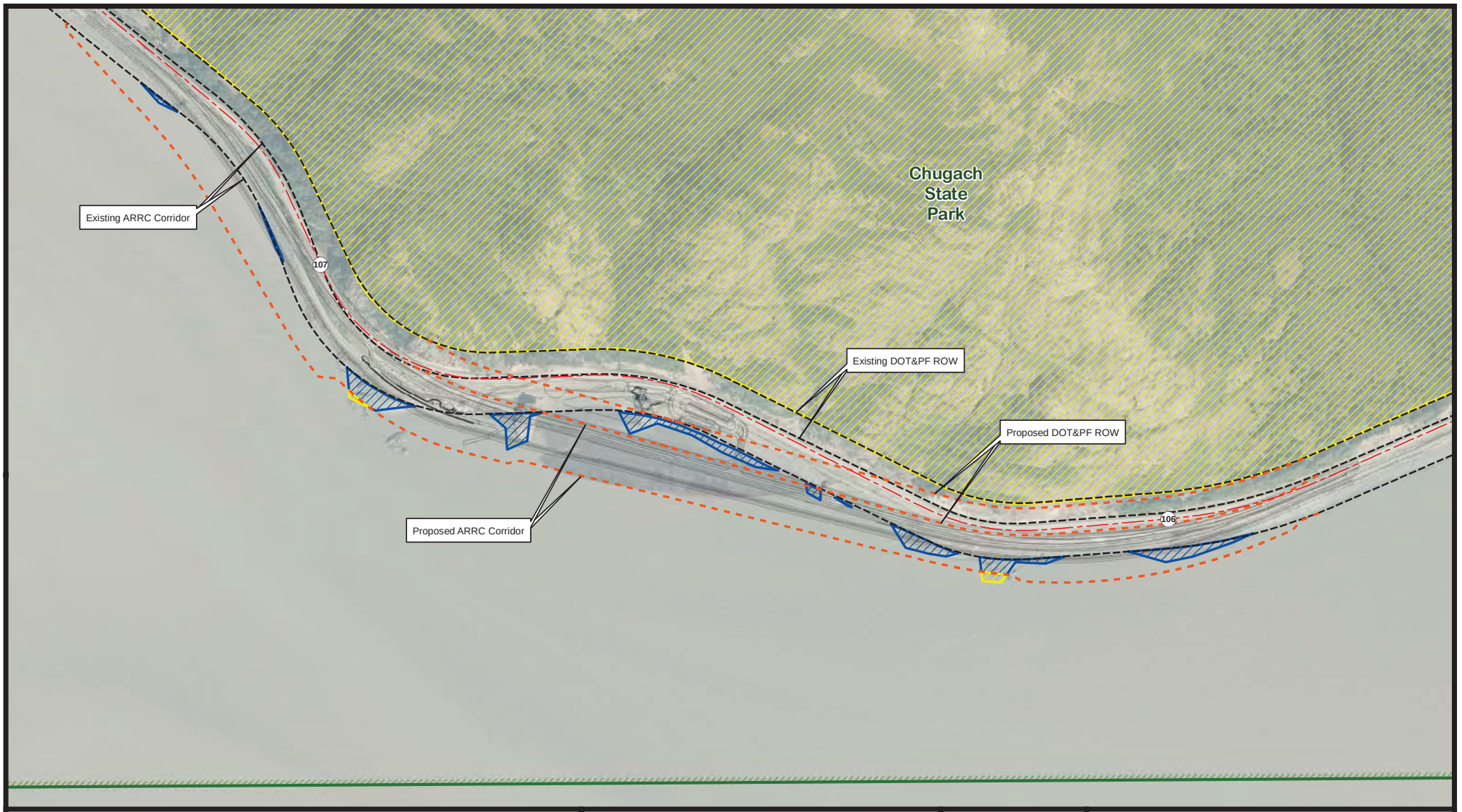
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE A-2a

P:\Projects\D61278\GIS\2015_08_WC\FigA-2a.mxd Sep 03, 2015 User: zricketts



Chugach State Park Boundary and Protected LWCF Lands After Conversion (Project Area)

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE A-2b

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APPENDIX B

2001 Memorandum of Agreement

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MEMORANDUM OF AGREEMENT

This Memorandum of Agreement memorializes certain agreements reached between the parties hereto regarding the improvement of certain public facilities (including realignment of the Alaska Railroad corridor, the Seward Highway, or both) and resulting conveyances of certain public property interests between Potter Station and Girdwood in Southcentral Alaska. A secondary purpose of this agreement is to develop an overall cooperative framework for a multi-phased highway improvement project currently planned by one of the parties but, in addition, to foster future cooperation in the overall planning, development, operation and maintenance of the Alaska Railroad and Seward Highway corridors within or adjoining Chugach State Park.

I. PARTIES

THIS MEMORANDUM of AGREEMENT ("MOA") is by and between the STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES ("DOTPF"), whose address is P.O. Box 196900, Anchorage, Alaska 99519-6900, the ALASKA RAILROAD CORPORATION ("ARRC"), whose address is P.O. Box 107500, Anchorage, Alaska 99510-7500, and the STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES ("DNR"), whose address is Office of the Commissioner, 550 West Seventh Avenue, Suite 1400, Anchorage, Alaska 99501-3561, hereinafter referred to collectively as the "Parties".

II. RECITALS

WHEREAS, the Parties acknowledge and agree that:

1. Each party to this MOA is a public entity with a separate mission and diverse functions, owning or managing land or facilities along Turnagain Arm between Potter Station and Girdwood, Alaska (see Exhibit "A", attached). The affected lands encompass both the Chugach State Park and transportation and utility corridors (hereinafter referred to as the "Area of Interest");

2. It is the parties' intention for this MOA to express a mutual commitment to cooperative planning, development and operation of their diverse

functions, recognizing that each function is of significant public benefit, all of which can be compatible and complementary with sufficient good faith efforts by all Parties;

3. Chugach State Park was created, in part, to protect areas of unique and exceptional scenic value, and to provide public recreational opportunities by establishing areas for specific uses and constructing the necessary public facilities for the uses in those areas. Scenic viewing, recreating along the highway corridor and driving for pleasure along the Seward Highway are primary public recreational uses in the Turnagain Arm portion of Chugach State Park. Enhancing the scenic and recreational values of Chugach State Park is an important consideration in the design and construction of the highway and/or railroad improvements to which this agreement pertains;

4. That portion of the Seward Highway located within the Area of Interest provides the sole highway link between the Kenai Peninsula and the remainder of the state highway system, is an interstate highway on the national highway system, a State Scenic Highway, a National Scenic Byway, and an All-American Road;

5. That portion of the Alaska Railroad located within the Area of Interest is the sole railway way link between the open water ports of Seward and Whittier and the Kenai Peninsula and the remainder of the Alaska Railroad transportation system. The Alaska Railroad transports both passengers and freight and is an essential government function and critical component of the state's transportation infrastructure;

6. These sections of the Seward Highway and the Alaska Railroad which are located within the Area of Interest are affected by avalanches and other actual and potential operational constraints which pose significant threats to the safe, continued and uninterrupted use and operation of these essential public transportation facilities;

7. The realignment and/or widening of the Seward Highway and the related relocation of the Alaska Railroad within the Area of Interest will significantly enhance the reliability and safety of these vital transportation facilities;

8. Realignment and/or relocation of the Alaska Railroad within the Area of Interest can significantly improve both public safety and operating efficiencies in numerous ways, including reduction of track curvature;

installation of grade-separated crossings; and adding or better designing buffer zones between the industrial usage that occurs in the railroad corridor and the traveling and recreating public, thereby decreasing the opportunity for trespass and personal injury;

9. The realignment and relocation of the highway and railroad corridors will also involve the relocation and reconstruction of adjacent utilities;

10. The realignments and relocations of the highway, railroad and utility facilities will involve the establishment of new rights-of-way, easements, and other property interests as well as the relinquishment of abandoned rights-of-ways and easements through Chugach State Park;

11. Redefining the locations of the various property interests will help resolve and identify any unresolved or unclear easement locations within the Area of Interest, and may reduce the total amount of Chugach State Park acreage encumbered by easements;

12. Relocating and/or realigning sections of the Seward Highway and the Alaska Railroad tracks will reduce snow avalanche safety hazards for highway and railroad users as well as maintenance costs for DOTPF and ARRC;

13. Wherever possible, it is in the public interest to convert existing, abandoned sections of the Seward Highway within the Area of Interest into park facilities such as pull-out areas and interpretive sites or into avalanche catchment areas and other similar, beneficial uses;

AND WHEREAS, in recognition of the principles contained in the foregoing recitals, the Legislature of the State of Alaska adopted findings and policy under Ch. 116 SLA 2000, effective June 7, 2000, regarding the Parties and the public benefit of the improvements herein described that authorized the "...grants or conveyances of interests in public land among the [Parties] to relocate or widen the Seward Highway, to relocate railroad facilities, and to relocate adjacent utility facilities from Potter Station to Girdwood...".

NOW, THEREFORE, in order to:

1. Implement the intent of the Legislature as expressed in Ch. 116 SLA 2000, Sections 5 - 8;

2. Memorialize the agreement of the parties as to the principles and procedures to be used to accomplish the relocation of the DOTPF right-of-way and/or the ARRC utility corridor and other utilities, with safety of use and operations being a high priority;

3. Establish the procedures and methods to be used to document the relocation of facilities and exchanges of property interests between the Parties (or any two of them, as the case may be);

4. Provide for improvements to the Seward Highway, associated parking and turnout areas, and other highway related recreational facilities; and

5. To reflect the intent of the Parties to cooperate in planning, design, construction, and operation of their respective facilities within the Area of Interest;

the Parties agree to the principles and terms specified herein.

III. Existing Corridors

DOTPF and ARRC currently hold property interests within the Area of Interest, within which their respective facilities have been constructed. The following paragraphs generally describe those property interests :

1. DOTPF has a 300-foot right-of-way, 150 feet each side of the existing Seward Highway centerline. The DOTPF right-of-way has been relocated or straightened on numerous occasions since the original construction of the Seward Highway. DOTPF and DNR have assumed that the right-of-way has moved with relocation of the highway centerline. Most recently, the Seward Highway right-of-way was relocated under a Memorandum of Understanding between DNR and DOTPF dated August 10, 1990, and amended August 26, 1993.

2. ARRC has a 200-foot corridor, 100 feet each side of the railroad centerline as established by U.S. Survey Nos. 9010-14 and conveyed to the corporation under the Alaska Railroad Transfer Act of 1982 ("ARTA"), 97 Pub. Law 468, by Exclusive License dated January 5, 1985. Pursuant to ARTA, the ARRC is entitled to a patent to said corridor conveying the full interest of the United States therein, but in any event not less than an exclusive use easement as defined by 45 U.S.C. §1202(6). The ARRC track facility has been relocated in part between Bird Point and Girdwood

under a Memorandum of Agreement between ARRC and DOTPF dated August 26, 1993 ("the 1993 MOA"). Pursuant to the 1993 MOA, DOTPF committed to obtain legislative approval for transfer of an additional title interest to ARRC for the new rail alignment. Chapter 116, 2000 SLA was enacted, in pertinent part, to address this commitment as well as to enable other similar transfers.

3. The DOTPF right-of-way and the ARRC corridor overlap in part. By a Blanket Permit dated April 7, 1989, ARRC Contract No. 6012, DOTPF and ARRC agreed on highway use of the ARRC corridor in various locations in Southcentral Alaska. DOTPF and ARRC agreed, by the 1993 MOA, to modify the Blanket Permit to apply the management and other provisions of the 1993 MOA to the Bird Point-to-Girdwood segment of the highway improvement project. DOTPF and ARRC now agree to manage the overlapping interests at other locations within the Area of Interest and covered by the Blanket Permit as provided below.

The Area of Interest also encompasses utility easements, permits and rights-of-way aligned generally within or adjacent to the ARRC corridor and/or the DOTPF rights-of-way.

IV. Construction and Relocation Plans

DOTPF is the lead agency in accomplishing the Seward Highway realignment/relocation goals herein specified. It is DOTPF's direct responsibility to design, schedule, budget, build and maintain the highway realignments envisioned, subject to DNR consent and consistent with AS 41.21.122, and to design, schedule, budget and build its appurtenant utility realignments consistent with AS 19.05.040 and vested contractual rights. In addition, it will be DOTPF's direct responsibility to design, schedule, budget, and build the railroad and its appurtenant utility alignments affected by the highway realignment projects, subject to ARRC consent and consistent with AS 42.40 and any vested contractual rights.

DOT must pay for it all

The Parties agree that the realignment and relocation of the highway, railroad, and utilities within the Area of Interest will take place over several years and be accomplished in several separate phases of design and construction. DOTPF has developed a general approach and schedule for the multiple project phases, as shown in "Exhibit B" hereto. Periodically, DOTPF may revise, update and amend Exhibit B in response to evolving conditions or emerging opportunities.

Although this Agreement relates specifically to the planning, design, construction and

Interim operation of the Seward Highway through the Area of Interest, DOTPF and the DNR recognize the value of further cooperative efforts in the long-term operation and maintenance of the Seward Highway within the Chugach State Park. To this end, the DOTPF and DNR agree to continue to work cooperatively toward the establishment of a long-term maintenance and operations agreement for the affected portions of the Seward Highway and Chugach State Park.

Further, the Parties recognize the value of cooperative efforts in the long-term development, operation and maintenance of their respective adjacent properties, particularly in light of the industrial nature of ARRC's business and the human safety considerations arising from the close proximity of railroad activities to the recreating public. The Parties agree to cooperate in long-term planning and operations in order to minimize potential public-railroad incidents, to increase public awareness and observance of railroad safety protocols, and, subject to the discretion of each party, to jointly and individually seek funding to enhance these goals;

Pursuant to the foregoing, the parties agree to undertake and perform the following duties:

DOTPF herewith agrees to:

1. Cooperate with DNR and ARRC during the planning, design, and construction of the relocation of various portions of the Seward Highway, the tracks of the ARRC, and related utilities within the Area of Interest;

2. Recognize the scenic and recreational values of the Seward Highway corridor and Chugach State Park and, insofar as practical, design, build and maintain the Seward Highway in a manner compatible with and supportive of those values;

3. Recognize the importance to ARRC of a corridor fully 200 feet in width for the safe conduct of rail operations, and the continuing need for ARRC to maintain full management authority within its corridor, whether original or relocated, subject to the establishment of a surface management authority line in specific locations whether the highway and rail facilities are both necessarily within the 200-foot rail corridor. It is intended that operation of such a management authority line will be similar to that provided in previous agreements between ARRC and DOTPF;

4. Recognize the human and operational safety considerations that can adversely impact ARRC and the public interest when the motoring or

recreating public are afforded a more direct and inviting access to facilities adjacent to or in the vicinity of an operational railroad track and, insofar as practical, design, build and maintain the Seward Highway in a manner compatible with and supportive of these considerations;

5. Cooperate with DNR to construct and maintain highway turnouts and other roadside facilities along the Seward Highway for the purposes of highway safety, recreation, and scenic viewing. Such maintenance to include snow removal and maintenance of the asphalt surface and other facilities installed by DOTPF;

6. Recognize the importance to ARRC of the existence and exact location of utilities within the rail corridor, and, insofar as practicable, plan and design the individual projects in a manner so as to place ARRC in its new alignment in the same position relative to utilities as it was within the old alignment, unless placement otherwise is approved by ARRC;

7. Enter into temporary construction permits or similar agreements authorizing entry onto ARRC property for individual phases of the project, subject to ARRC approval of design plans and specifications as they relate to or affect ARRC property or operations; and execute amendments to the Blanket Permit adding relocated rail corridor thereto upon completion of a project phase;

8. Give reasonable consideration to ARRC requests to accommodate toe of slope or fill needs outside the 200-foot corridor limits where justified by geographic conditions;

9. Appraise the existing Seward Highway corridor, the ARRC corridor, and the relocated highway and railroad corridors within the Area of Interest, and provide separate valuations for any additional area required by DOTPF or ARRC that are outside the existing corridors;

10. Provide preliminary right-of-way maps for the new segment alignments to DNR and ARRC according to the schedule indicated in Exhibit B.

11. Provide as-built surveys of all relocated rights-of-ways and railroad corridor to DNR and the ARRC. DOTPF shall undertake said surveys in a diligent and timely manner following completion of construction activities and will use its best efforts to complete the as-built surveys within 12 months following completion of construction activities under this MOA;

12. Provide a legal description of the relocated railroad corridor to DNR sufficient to enable the Commissioner of DNR to convey property interests to ARRC as required by Section 6 of Ch. 116, SLA 2000.

13. Relocate the 300-foot Seward Highway right-of-way based upon the as-built survey of centerline and right-of-way limits after completion of all phases of construction, relinquishing to the appropriate party any right, title, and interest of DOTPF to those lands outside the relocated right-of way;

14. Define and monument the relocated 200-foot ARRC corridor and any and all affected, relocated utilities based upon a survey of centerline and corridor limits after construction. The relocation survey will establish survey control ties to the affected 9000 Series U.S. surveys;

15. Conduct all land title research and prepare all property interest transfer documents or conveyance plats with the cooperation and assistance of DNR's Division of Mining, Land and Water's Realty Services Section and, with respect to existing and relocated railroad corridor, with the cooperation and assistance of ARRC's Real Estate Department;

16. In cooperation with ARRC and DNR, draft and submit to the Legislature the information required under Ch. 116 SLA 2000, Section 8.

DNR herewith agrees to:

1. Cooperate with DOTPF and ARRC during the planning, design, and construction of the relocation of various portions of the Seward Highway, the tracks of the ARRC, and related utilities within the Area of Interest;

2. Cooperate with ARRC and DOTPF to identify and take steps during the planning and design stage of any part of a project within the Area of Interest to minimize actual or perceived public access to the active rail corridor in the interest of public safety;

3. Upon completion of the multi-phased project, convey to ARRC a property interest in land identical in quality to that received by ARRC from the United States pursuant to ARTA with respect to the existing railroad corridor;

4. Prior to execution of a final conveyance of the relocated railroad corridor,

and following any required public notice, Issue ARRC an interim exclusive permit or other property interest that will provide ARRC with sole management authority over the relocated corridor consistent with AS 42.40, including but not limited to the power to issue permits, licenses or other contracts to third parties for activities within the railroad corridor and retain revenues therefrom;

5. Cooperate with DOTPF in matters of highway maintenance and operation to provide for safe and efficient highway operation as well as to optimize highway-related scenic and recreational opportunities;

6. Cooperate with DOTPF in the relinquishment of rights-of-way rendered no longer necessary as a result of the relocation activities, and the establishment of new rights-of-way as needed to accommodate the newly established alignments of same. This reconciliation of abandoned and new rights-of-way is to occur at the end of the multi-phased project;

7. Permit DOTPF reasonable access to the existing alignment, and any portion of the realigned Seward Highway within the Area of Interest for the purposes of maintenance and operation such as working on avalanche catchment basins;

8. Grant DOTPF a right-of-entry under a Special Park Use Permit, subject to 11 AAC 18 and reasonable permit stipulations, for access to and along the existing Seward Highway alignment, proposed realignments, and any new alignments within the Area of Interest during construction of the relocated highway, railroad and utilities, to construct roadside facilities and avalanche control features, and any other reasonable activities necessary to the conduct of activities herein described;

9. Cooperate with ARRC in the planning, design and construction of other ARRC-initiated realignments that may not affect the Seward Highway but may afford the ARRC significant operational and safety enhancements;

10. Provide advance notice to DOTPF and ARRC of plans for the development and operation of park facilities or programs that may affect highway and/or railroad operations and cooperate with DOTPF and/or ARRC to minimize the impact of such facilities or programs on facility safety and operations.

ARRC herewith agrees to:

1. Cooperate with DOTPF and DNR in all matters described above, particularly with respect to the timely review, approval and consent to all necessary ARRC realignments that arise as a result of the Seward Highway realignment;

2. Provide timely input into the planning, design and construction processes for highway and park projects, and for specific relocations of various portions of the ARRC tracks within the Area of Interest, with a particular focus on railroad and public safety;

3. Accept the relocated 200-foot railroad corridor based upon a monumented survey of centerline and corridor limits after construction of all phases of construction;

4. Relinquish to the appropriate party any right, title, and interest of ARRC to those lands outside the relocated corridor, provided that the ARRC may, subject to approval of DNR and DOTPF, select additional rights-of-way from adjacent and contiguous properties to augment the realigned ARRC right-of-way. It is the intent that such additional rights-of-way will be linear in shape, that the additional rights-of-way be necessary for specific, intended uses (such as rail sidings, parking, or slope containment) and that the total land area included within the combined realigned and additional rights-of-way will not exceed the total land area that had been included within the previously existing ARRC rights-of-way;

5. Diligently pursue and seek to obtain a revision to ARTA that would revoke or substantially modify the reversion provisions which apply to ARTA-transferred property no longer used for transportation, communication or transmission purpose, so as to make more feasible the relinquishment of old corridor to DNR for park purposes;

6. For purposes of new right-of-way acquisition for the realigned ARRC corridor and the relinquishment of previously existing rights-of-way outside the relocated corridor, the ARRC agrees to include the Bird Point to Girdwood segment of the realignment project as part of this MOA.

7. Grant DOTPF a right-of-entry for access to and along the existing ARRC alignment, proposed realignments, and any new alignments within the Area of Interest for activities necessary to the conduct of activities herein described.

V. Additional Terms

1. This MOA may be amended by consent of the parties.

2. Nothing in this MOA is intended to conflict with any federal, state, or local law or regulation.

3. The term of this MOA is ten (10) years, unless extended or terminated sooner by mutual consent or otherwise terminated due to a material breach at the option of the non-breaching party.

4. The term of the Blanket Permit, as previously modified by the 1993 MOA and as applicable within the Area of Interest, is extended to a period of 35 years from the date of execution of this MOA.

The Parties do herewith accept and agree with the principles and obligations herein set forth as evidenced by their signatures below.

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

By: _____ Oct 16, 2001
~~Marty K. Rutherford~~ Pat Pourchot Date
Its: ~~Deputy~~ Commissioner

STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

By: _____ Oct 10, 2001
David R. Eberle Date
Its: Director, Central Region

ALASKA RAILROAD CORPORATION

By: _____ 10/11/01
Patrick K. Gamble Date
Its: President & CEO

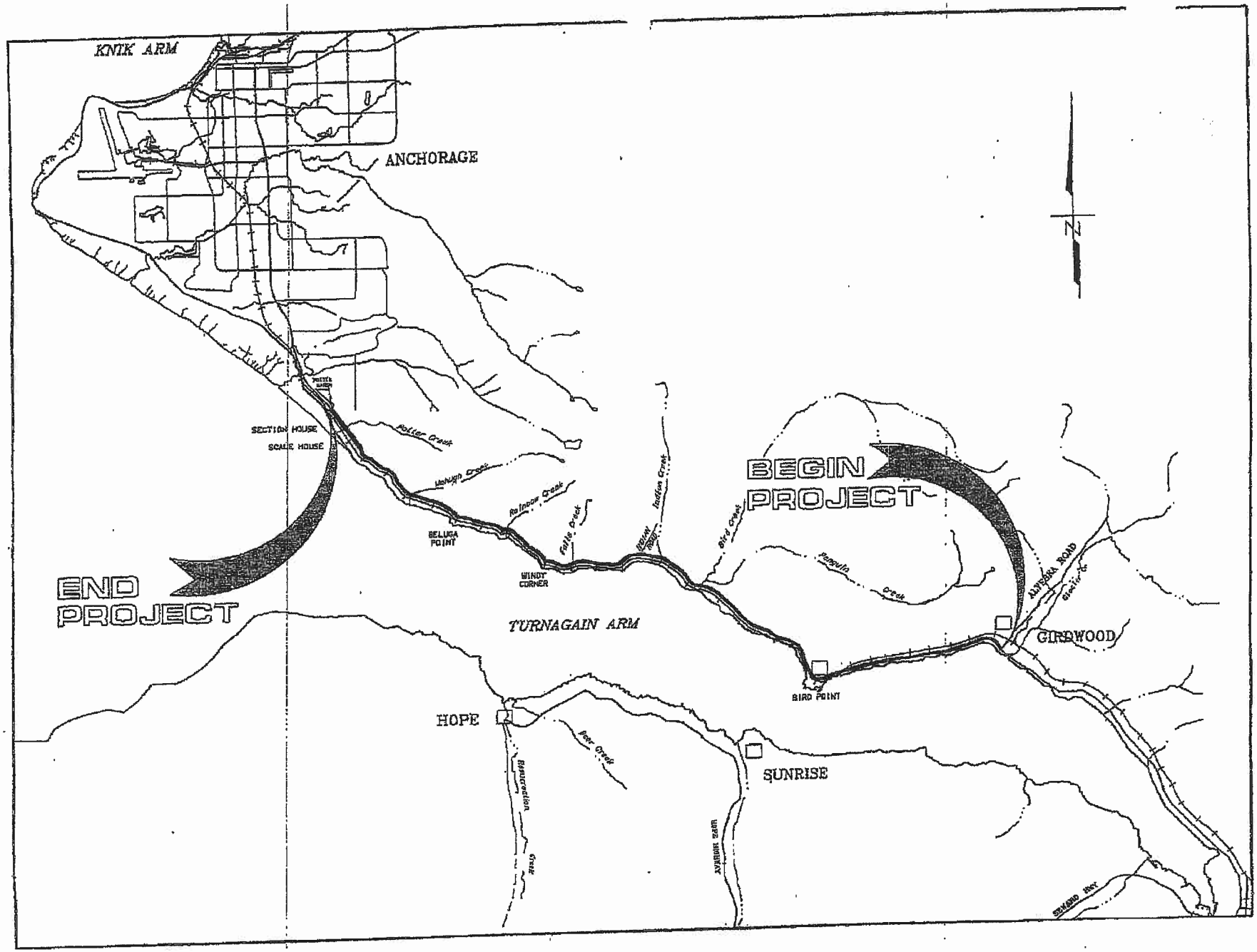

KNIK ARM
ANCHORAGE
SECTION HOUSE
SCALE HOUSE
Rolley Creek
Lehigh Creek
Rainbow Creek
Falls Creek
Indian Creek
BELUGA POINT
WINDY CORNER
BEGIN PROJECT
Bird Creek
Penguin Creek
ALYESKA ROAD
Glacier Cr
END PROJECT
TURNAGAIN ARM
GIRDWOOD
BIRD POINT
HOPE
Bear Creek
Resurrection Creek
SUNRISE
JUNEAU
SEWARD HWY

Exhibit B
to
Memorandum of Agreement

Seward Highway Realignment – Potter Station to Girdwood

The phasing schedule for the Seward Highway Realignment, as of the date of the Memorandum of Agreement, is as follows:

Phase	Planning & Design	Construction	ROW Map
MP 97 - 99	2000 - 2001	2002-2003	Spring 2002
MP 104 - 115	2002 - 2003	2004-2005	Spring 2004
MP 99 - 104	2004 - 2005	2006	Spring 2006

APPENDIX C

Appraisals

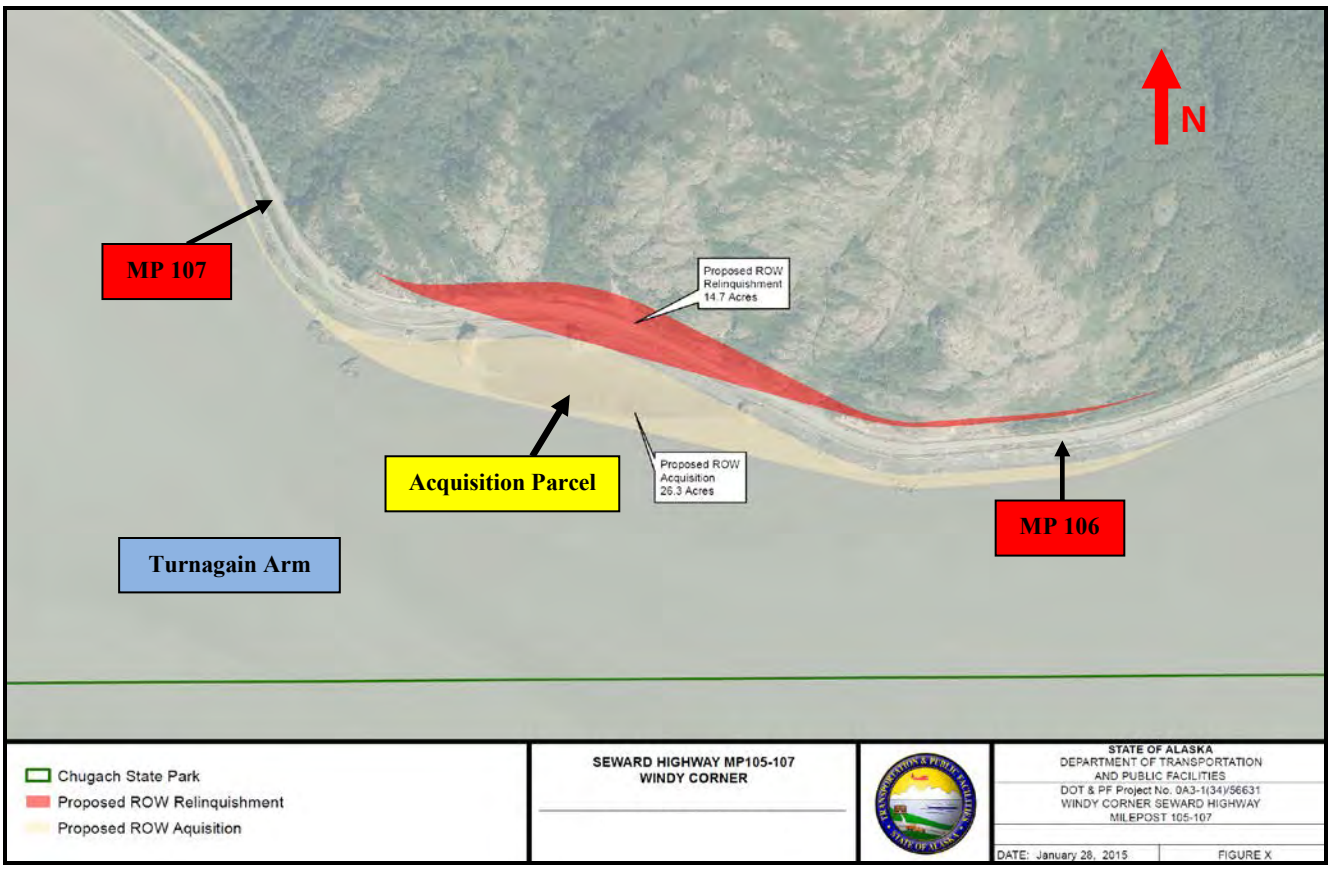
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MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

APPRAISAL REPORT

Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
“Acquisition Parcel”



Effective Appraisal Date: August 8, 2018 File No. 18-3182(A)

Submitted To:

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

MacSwain Associates LLC

4401 Business Park Blvd., Suite 22
Anchorage, Alaska 99503
Telephone: 907-561-1965
Facsimile: 907-561-1955
s.macswain @macswain.com

Acquisition Parcel

August 10, 2018

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

Re: Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
"Acquisition Parcel"

Dear Ms. Mueller:

We have prepared an *Appraisal Report* that analyzes the above-referenced property affected by the Windy Corner Seward Highway Project. The purpose of the appraisal is to estimate the market value of property rights acquired pertaining to the partial acquisition of an 87.63-acre parcel, as of August 8, 2018 (effective date of value). The property rights appraised is the fee simple interest. Totaling 26.30 acres, the acquired land consists entirely of tidelands adjacent to level land and steep sloping bedrock, between Rainbow and Indian, Alaska. We note that MacSwain Associates LLC appraised "Acquisition Parcel" effective April 13, 2017, for the same client, intended use, and intended users. Our opinion of value of the property rights acquired was $35,700. Although we uncovered and analyzed new sale data during this new assignment, our analysis resulted in the same opinion of value.

Importantly, we were instructed by DOWL, Inc. to disregard any improvements, and to appraise the property as if under a single ownership, the State of Alaska. Therefore, analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

The appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP). Since UASFLA states an estimate of market value tied to exposure and marketing time is inappropriate and requires exclusion from the appraisal report, we invoke the jurisdictional exception rule permitted in USPAP.[1] This departure represents the only conflict between UASFLA and USPAP.

Based on the data, reasoning, and analysis contained in the appraisal report, it is our opinion the market value of the appraised property before and after the acquisition is as follows.

Value Before Acquisition	***Value After Acquisition***
$1,124,500	***$1,088,800***

Therefore, it is our opinion the market value of the property rights acquired, as of August 8, 2018, is as follows.

Market Value of Acquisition	**$35,700**

We direct your attention to the Assumptions and Limiting Conditions on Page 6 for an explanation of the restrictions and limitations of the report. If you have questions regarding our analysis or conclusion, please contact our office.

Respectfully submitted,

Steve MacSwain, MAI
State of Alaska Certificate No. 42

[1] Standard Rule 1-2(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their market value opinion. Section D-1b of UASFLA provides legal authority for invoking the Jurisdictional Rule.

Table of Contents

Title Page

Transmittal Letter **1**

Table of Contents **3**

Appraiser Certification **4**

Assumptions and Limiting Conditions **6**

Appraisal Summary **7**

Chapter 1: Premise of the Appraisal **8**

Chapter 2: Neighborhood Analysis **17**

Chapter 3: Property Description and Analysis **20**
Property Photographs **23**
Property Photograph Location Maps **26**

Chapter 4: Highest and Best Use Analysis **27**

Chapter 5: Property Valuation – Before Acquisition **30**

Chapter 6: Property Valuation – After Acquisition **55**

Chapter 7: Market Value of Acquisition **58**

Addendum
Comparable Land Sales
Appraiser Qualifications

Appraiser Certification

The undersigned certifies that to the best of their knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and legal instructions, and are the personal, unbiased professional analysis, opinions, and conclusions of the appraisers.
- The appraisers have no present or prospective interest in the property appraised and no personal interest or bias with respect to the parties involved.
- The compensation received by the appraisers for the appraisal is not contingent on the analyses, opinions, or conclusions reached or reported.
- The appraisal was made and the appraisal report prepared in conformity with the *Uniform Appraisal Standards For Federal Land Acquisitions* (UASFLA).
- The appraisal was made and the appraisal report prepared in conformity with Appraisal Foundation's *Uniform Standards of Professional Appraisal Practice* (USPAP), except to the extent that the *Appraisal Standards For Federal Land Acquisitions* (UASFLA) required invocation of USPAP's Jurisdictional Exception Rule, as described in Section D-1 of the *Appraisal Standards For Federal Land Acquisitions*.
- The appraisers have made a personal inspection of the property appraised. Property owner contact information was not provided to the appraisers.
- Jim Dahl provided significant professional assistance to the appraiser.
- The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of Professional Appraisal Practice of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- As of the date of this report, Steve MacSwain, MAI has completed the continuing education program of the Appraisal Institute.
- As of the date of this report, Steve MacSwain, MAI is a certified General Real Estate Appraiser in the State of Alaska, and has completed the education requirements through June 2019.

- MacSwain Associates LLC appraised the subject parcel effective April 13, 2017, for the same client, intended use, and intended users. We have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

- Our opinion of market value of the property rights acquired, as of August 8, 2018, is $35,700.



Steve MacSwain, MAI
State of Alaska Certificate No. 42

8/10/18
Date

Assumptions and Limiting Conditions

This appraisal report is subject to the following **Hypothetical Condition**. Use of this hypothetical condition might have affected the assignment results.

- We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.

This appraisal report is subject to the following Assumptions and Limiting Conditions.

- We assume no responsibility for the legal descriptions provided or for other matters pertaining to legal or title considerations. We assume title to the appraised property is marketable unless otherwise stated.
- We appraise the property free and clear of all liens or encumbrances unless otherwise stated.
- We believe the information furnished by others is reliable, but we do not guarantee its accuracy.
- We assume all engineering studies are correct. We believe all maps, surveys, and other illustrative material are accurate. We include these exhibits only to help the reader visualize the appraised property.
- We assume there are no hidden or unapparent conditions that render the property more or less valuable. We assume no responsibility for such conditions or for obtaining the engineering studies that may be required to discover them.
- We assume the appraised property is in full compliance with all applicable federal, state, and local environmental regulations and laws unless the lack of compliance is stated, described, and considered in the appraisal report.
- Possession of this report, or a copy thereof, does not carry with it the right of publication.
- The appraisers are not required to give consultation, testimony, or attend court proceedings with reference to the subject property without prior arrangements.
- The appraisers acknowledge the appraisal report may be available for public review upon request. However, this right does not allow dissemination to the public through advertising, public relations, news, sales, or other media without prior written consent and approval from the appraisers.
- We did not observe any hazardous material or other type of environmental contamination that may affect the appraised property. Furthermore, we do not have any knowledge that such substances exist. However, the presence of environmental conditions may impair property value. Therefore, we urge the client to retain an environmental assessment for discovery and evaluation.

Appraisal Summary

Property Type:	Vacant land
Purpose of Appraisal:	Provide market value opinion of property rights acquired
Property Rights Appraised:	Fee simple interest
Legal Description:	Based on a review of the available information, the appraised acquisition is located within Sections 2 and 3, Township 10 North, Range 2 West, Seward Meridian.
Property Owner:	State of Alaska
Tax Parcel No:	N/A (exempt from taxation)
Location/Neighborhood:	Located from about Milepost 105.7 to 107.4 of the Seward Highway between Rainbow and Indian, Alaska
Land Area:	Larger Parcel – 87.63 Acres Acquisition – 26.30 Acres Remainder Parcel – 61.33 Acres
Access:	We presume legal road access
Topography:	Steep slope to the north; level to undulating; tidelands
Utility Service:	Electricity and telephone
Easements and Restrictions:	None identified
Zoning:	Located outside any zoning authority
Improvement Description:	None
Highest and Best Use:	Transport or distribution corridor
Environmental Condition:	No evidence of adverse environmental conditions observed
Property Inspection Date:	August 8, 2018
Effective Date of Appraisal:	August 8, 2018
Report Date:	August 10, 2018
Market Value Before Acquisition:	$1,124,500
Market Value After Acquisition:	$1,088,800

Market Value of Acquisition: $35,700

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

Chapter 1: Premise of the Appraisal

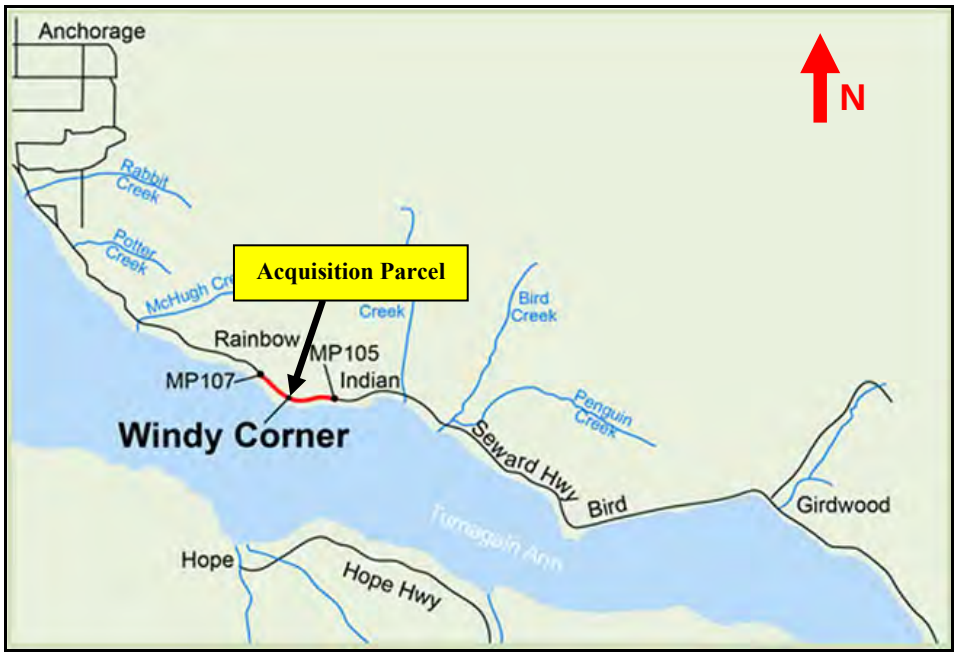
Overview

We have prepared an *Appraisal Report* that analyzes land within existing rights of way and adjacent tidelands. The State of Alaska intends to acquire 26.30 acres referred to as "Acquisition Parcel," of an 87.63-acre larger parcel as part of a proposed road improvement project. The appraised property is located from about Milepost 105.7 to 107.4 of the Seward Highway, between Indian and Rainbow, Alaska. The proposed partial acquisition is necessary in conjunction with construction of a road improvement project. This appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and *Uniform Standards of Professional Appraisal Practice* (USPAP).

Project and Acquisition Summary

Project Summary: The project intent is to address traffic safety concerns in the vicinity of Windy Corner by realigning the highway and the railroad to meet current design standards. The new alignment will also create space for new roadside recreational facilities and wildlife viewing areas (including parking and walkways) with acceleration and deceleration lanes for turning traffic.

Project Location Map



Specifically, the project, located within the Municipality of Anchorage between Indian and Rainbow, involves realigning and constructing a divided two-lane highway from Milepost 105 to 107, and relocating and realigning the Alaska Railroad Corporation (ARRC) tracks. The space created by the road and rail realignment will accommodate improved parking/pullout facilities on both sides of the highway with new auxiliary lanes to accommodate traffic entering and exiting the highway.

Acquisition Summary: The analysis and valuation reflects the partial acquisition of vacant land.

Purpose of Appraisal	The purpose of the appraisal is to form a market value opinion for a potential voluntary acquisition adhering to UASFLA and USPAP.
Client	Our client is DOWL, Inc.
Intended Use of the Appraisal Report	The intended use of the report is to assist with compensating the property owner for the property rights acquired. The appraisal report is not intended for any other use.
Intended Users of the Appraisal Report	The intended users of the report are DOWL, Inc., the State of Alaska, and the National Park Service.
Date of Property Inspection	August 8, 2018
Effective Date of Appraisal	The effective date of appraisal is August 8, 2018, which represents the property inspection date.
Report Date	August 10, 2018

Definition of Market Value

The definition of market value is the basis of our analysis and valuation of the appraised land. *Market value* is defined as follows.

Market value is the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of value, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property.[3]

Property Rights Appraised

The property rights appraised is the *fee simple interest, which* is defined as follows.

Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.[4]

Property Owner

A title report was requested from the client, but not provided. Based on review of public records, the appraised property is owned by various agencies of the State of Alaska. Importantly, our client has instructed us to appraise the property as if under a single ownership, the State of Alaska.

Legal Description

We requested a preliminary title report, but we did not receive this document. However, we did receive partial title abstracts from DOWL HKM, Inc. staff that included court decisions, Patents, Recorder's Office document displays and case abstracts, and Master Title Plats pertaining to the appraised property. Although we rely upon this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

Based on a review of the available information, the appraised acquisition is located within Sections 2 and 3, Township 10 North, Range 2 West, Seward Meridian.

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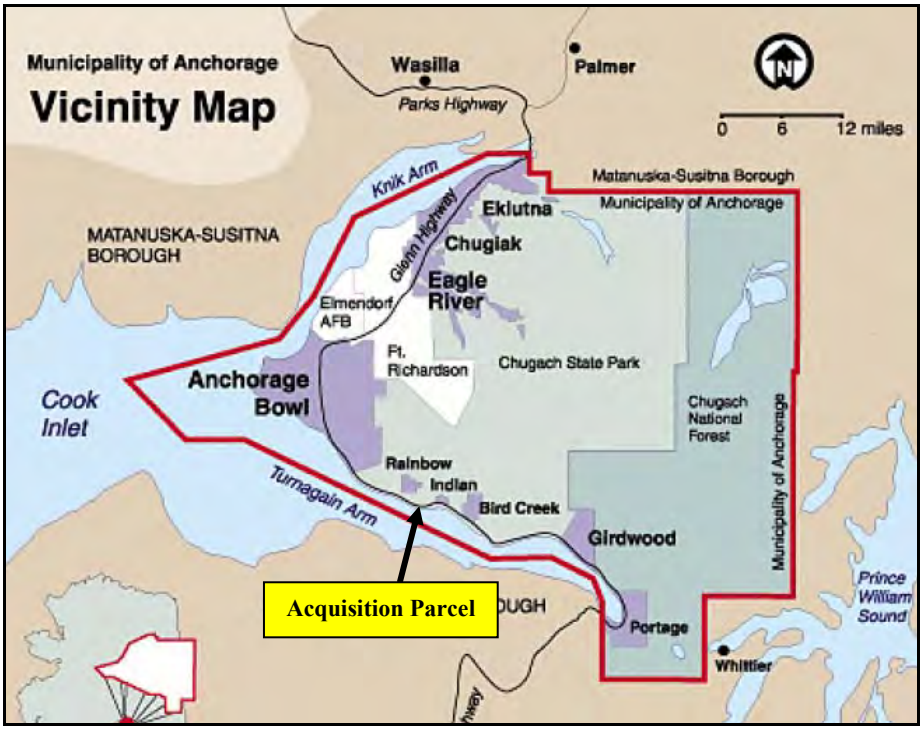
[3] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 10.

[4] *Appraisal of Real Estate*, Fourteenth Edition (2013), by the Appraisal Institute, p. 5.

Identification of Real Estate Appraised

Property Type:	Vacant land within a transportation corridor
Neighborhood:	Turnagain Arm
Location:	Located from about Milepost 105.7 to 107.4 of the Seward Highway between Rainbow and Indian, Alaska

Location Map



Property History

Property and Occupancy/Use History: The subject parcel is publicly owned land located within the boundaries of the Seward Highway and Alaska Railroad rights of way and adjacent tidelands. The current and historical uses of the property include the Seward Highway, Alaska Railroad tracks, and scenic/wildlife viewing areas.

10-Year Property Sale History: A title report was requested but not provided. Review of public records indicates no property sales in the past 10-year period.

Rental History: There is no record of rental or lease history for the subject parcel.

Assessed Value and Real Estate Taxes

The appraised parcel is owned by agencies of the State of Alaska, and not subject to taxation.

Larger Parcel Determination

We determined that the larger parcel is a portion of a transport or distribution corridor, which includes 87.63 acres of uplands and adjacent tidelands. Explanation of this determination is located in the highest and best use analysis section of this report.

Hypothetical Condition

We were instructed by DOWL, Inc. to disregard any improvements, and to appraise the property as if under a single ownership, the State of Alaska. Therefore, analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

Appraisal Methodology

Per UASFLA, we employ the before and after methodology to estimate the market value of the acquisition. First, we value the property before the acquisition; then we value the property that remains after the acquisition. The difference between the before and after values is the market value of the acquisition.

We determined that the appraised property, or larger parcel, represents a portion of a transport or distribution corridor that extends from Anchorage to the Kenai Peninsula. We employ the across the fence (ATF) methodology to estimate the value of the larger parcel. This methodology is a reliable technique of measuring land value for a corridor-type property. The premise of this methodology is the corridor land is as valuable as the land it passes, prior to consideration of corridor factor and usage factor adjustments. Since a majority of the corridor from Indian to the weigh station crosses through near-identical land, we use the key-parcel technique in the comparative analysis. Importantly, the land it crosses includes three different physical types of land (low-utility uplands, high-utility uplands, and tidelands) that contribute differently.

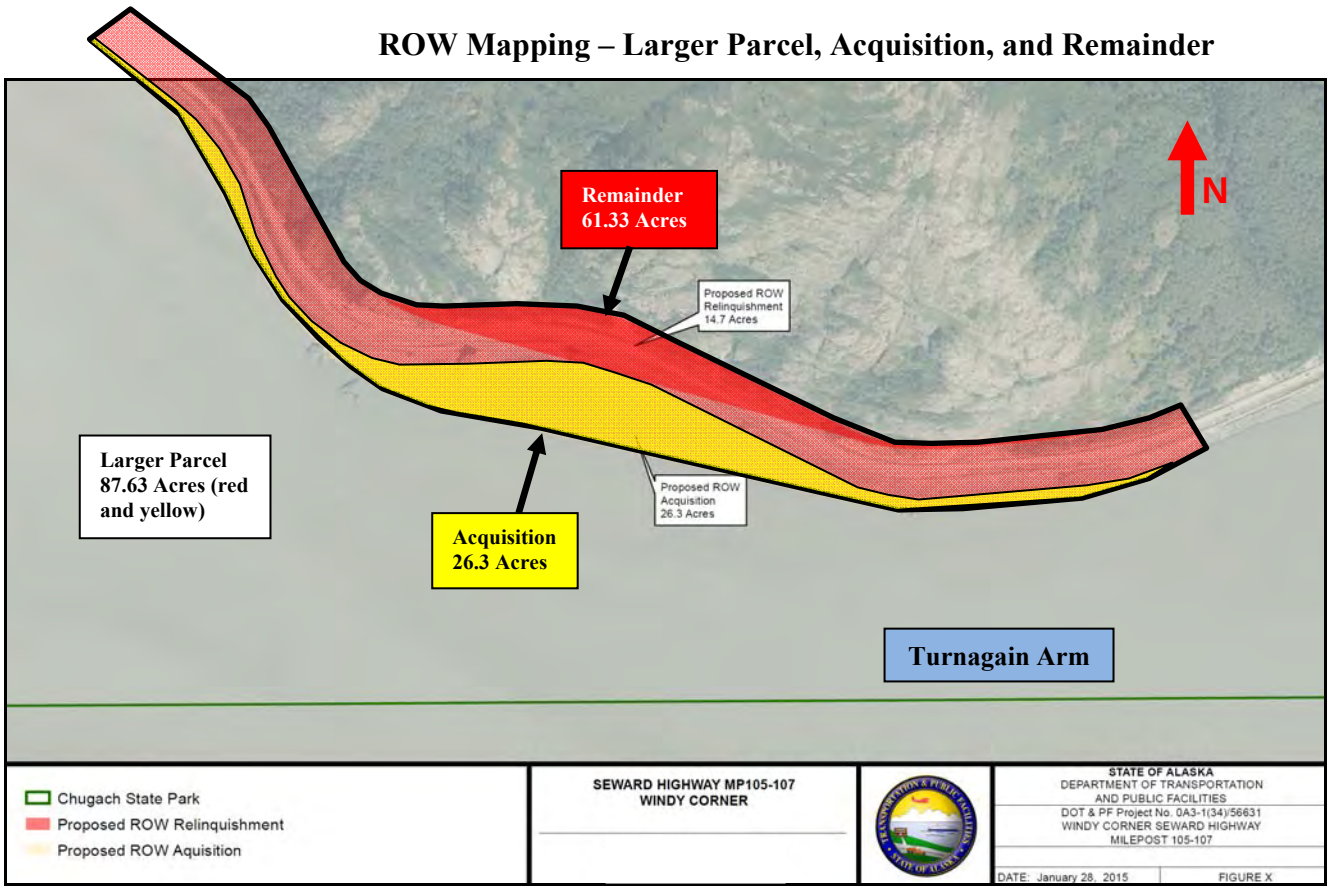
Because of a lack of sales with tidelands, high utility uplands, and low utility uplands, application of direct sale comparison to the key parcel is

not possible without significant appraiser judgment. Therefore, we apply an allocation technique that is similar to the concept of contribution. Though most often used to allocate land value to improved properties when land sale data is lacking, we believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. Again, this technique is utilized because a lack of market data prevents application of a more direct method.

Since the ATF methodology is a variation of the sales comparison approach, we made a comprehensive search of land sales and choose the most similar to perform the comparative analysis of each type of land that makes up the key parcel, relying upon qualitative analysis. After developing unit values of each type of land the corridor passes, we apply these unit values to the larger parcel to develop our estimate of market value before the acquisition. We then apply the same analysis to estimate the value of the remainder parcel, from which we develop our final estimate of value of the acquisition.

The ROW map below illustrates the partial acquisition affecting the appraised parcel, while the table on the following page provides a comparative analysis before and after the acquisition.

ROW Mapping – Larger Parcel, Acquisition, and Remainder



Before and After Acquisition Summary

	Larger Parcel (Before Acquisition)	Remainder Parcel (After Acquisition)
Land Area:	87.63 Ac.	61.33 Ac.
Low-Utility Uplands:	49.07 Ac.	49.07 Ac.
High-Utility Uplands:	12.26 Ac.	12.26 Ac.
Tidelands:	26.30 Ac.	0.00 Ac.
Shape:	Irregular	Similar
Road Access:	Yes	Same
Topography:	Tidelands, level lands, steep sloping	Level lands, steep sloping
Soils:	Mudflats, bedrock	Bedrock
Utilities:	E & T	Same
Easements and Restrictions:	None identified	Same
Improvements:	Assumed vacant	Same
Zoning:	Not zoned	Same
Highest and Best Use:	Transport or distribution corridor	Same

Scope of the Appraisal

Jim Dahl preformed the most current inspection of the appraised property, and assisted Steve MacSwain, MAI with data collection and analysis. In addition, Steve MacSwain, MAI administered the appraisal process, reviewed draft appraisals, and concluded with an opinion of value. The scope of the appraisal is summarized as follows.

- Steve MacSwain and Jim Dahl inspected the subject property on August 8, 2018, and prior dates;
- Reviewed information provided by DOWL, Inc. including parcel and project mapping;
- Reviewed Municipality of Anchorage (MOA) mapping;
- Reviewed Municipal Code pertaining to zoning;
- Reviewed *Turnagain Arm Comprehensive Plan;*
- Reviewed *Consulting Assignment for the Analysis of Corridor Enhancement Factor for a Portion of Alaska Railroad Corporation's Corridor* prepared in 2004 by Randy L. Seale, MAI of Allen, Williford & Seale, Inc.;
- Observed the land use pattern of the Turnagain Arm market district;
- Collected and analyzed economic data pertaining to the Turnagain Arm market district;
- Interviewed Brokers that list Turnagain Arm district properties or specialize in marketing these properties;

- Reviewed USGS topographical maps and aerial mapping;
- Performed a land use analysis;
- Collected and analyzed comparable land sales;
- Confirmed land sales with the buyer, seller, Broker, or other knowledgeable third party;
- Relied upon the ATF methodology (sales comparison and allocation technique) to estimate market value of the property before the acquisition;
- Relied upon the ATF methodology (sales comparison and allocation technique) to estimate market value of the property after the acquisition; and
- Concluded with an opinion of market value of the acquisition by relying upon the before and after methodology.

Exposure Time

We invoke the Jurisdictional Exception Rule permitted in USPAP to comply with Section 9 of UASFLA that states an estimate of market value linked to an exposure or marketing time must be excluded from the appraisal report.[5]

Statement of Competency

MacSwain Associates LLC has completed numerous appraisals of vacant tracts of land throughout Alaska, including along the Seward Highway from Anchorage to Girdwood. Representative clients include lending institutions, government agencies, property owners, property managers, and private parties. A summary of Steve MacSwain, MAI's experience and professional qualifications are located in the addendum. Steve MacSwain, MAI has the knowledge and experience required by the competency provision of USPAP to complete this appraisal assignment credibly.

Summary of Appraisal Problem

The special appraisal problem encountered was a lack of sales that included all three types of land the corridor passes. This resulted in employing an allocation technique that determined the contribution of each type of land based upon direct sale comparison. Although sale activity is scarce, we analyzed sufficient data to develop a market-

[5] Since Standard Rule 1-1(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their opinion of value, we invoke the Jurisdictional Exception Rule that permits departure.

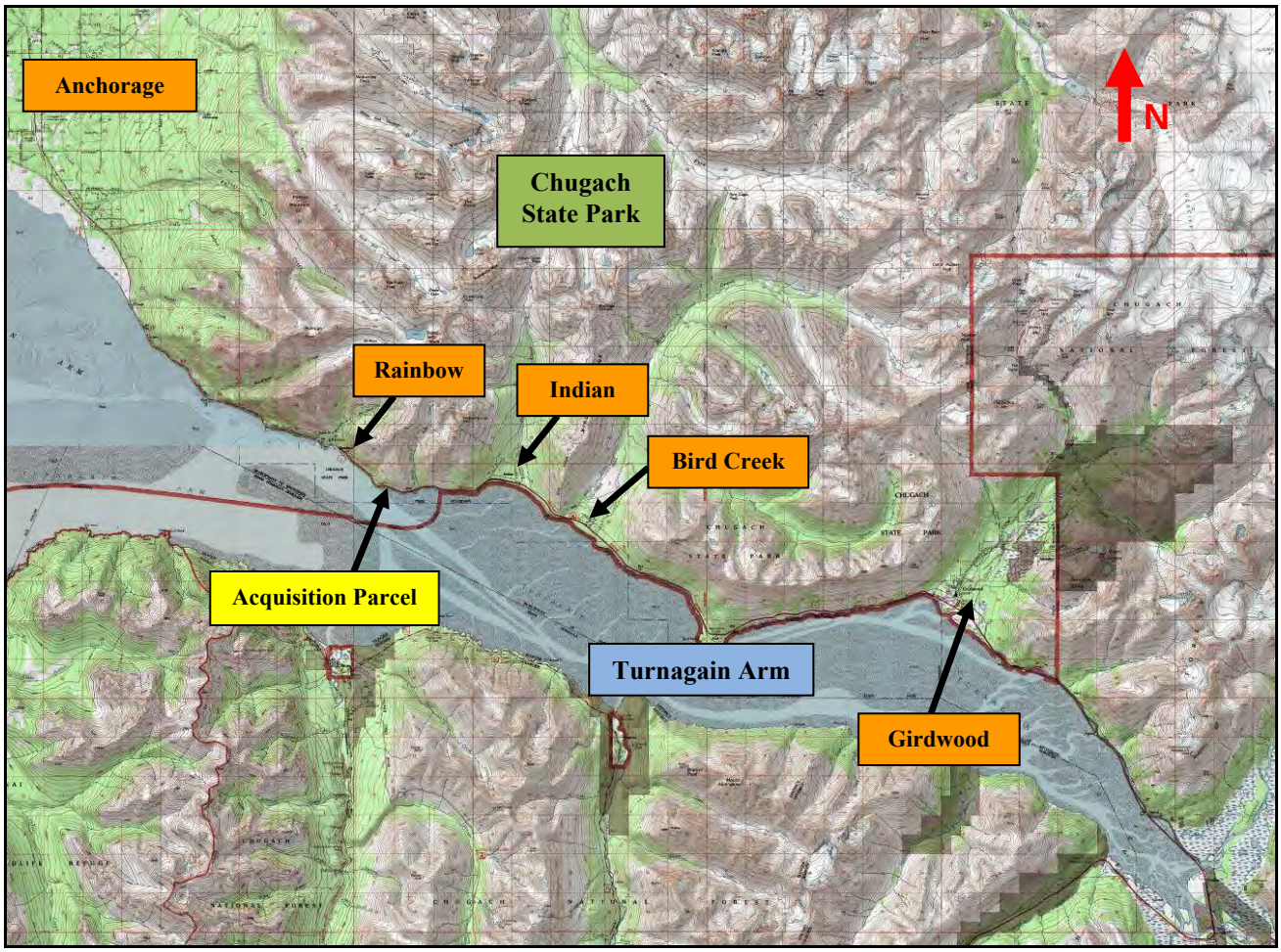
supported conclusion for each type of land. However, the scarcity of sales requires use of qualitative adjustment techniques rather than paired analysis that measures differences by quantification. Despite these deficiencies, we performed a reliable analysis that concludes with a credible estimate of market value.

Chapter 2: Neighborhood Analysis

Overview

The neighborhood is the Turnagain Arm District of the Municipality of Anchorage. The reader is referred to the maps below and on following pages that illustrate neighborhood boundaries.

Location Map

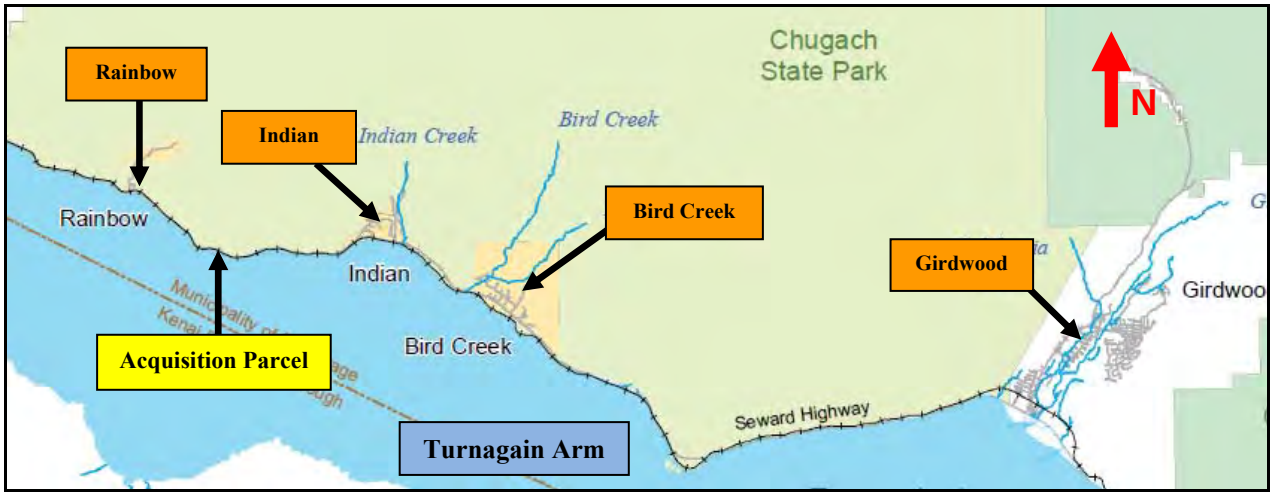


General Neighborhood

The general neighborhood is within the Turnagain Arm district and the area along the Seward Highway from Girdwood to Anchorage. The general neighborhood also includes the communities of Rainbow, Indian, and Bird Creek. According to the Municipality, the neighborhood has a population range from 350 to 375 residents. The predominate development pattern in the neighborhood is residential. Commercial development fronts the Seward Highway corridor and is located in Indian

and Bird Creek. Commercial development includes service and retail use such as restaurants, gas stations, automobile repair, and lodging.

Neighborhood Map



According to the Turnagain Arm Comprehensive Plan, Rainbow Valley developed under unusual circumstances with a group of landowners sharing plots of land for their individual homes, without actual platted lot boundaries. According to the homeowner's association, no vacant private land exists in the valley. All of the useable land is developed with rural residential homes and associated accessory use structures.

The Indian community includes a combination of large-lot rural residential developments with some scattered commercial uses along the Seward Highway and up-valley, including a small commercial nursery and Indian Valley meats, a large-scale meat processing facility. The east side of the valley includes a row of older homestead residences, some with renter cabins and two-family developments. Chugach Park View Subdivision in Indian is the most recent residential subdivision. The 35-lot subdivision is located between Indian Valley Road and Ocean View Road and offers large lots averaging 2.5± acres, paved streets, and partial Turnagain Arm and mountain views. The neighborhood offers various access points to Chugach State Park.

Bird Creek developed much like Indian, dominated by larger lot rural type residential development, with some scattered commercial uses along the highway and some small-scale commercial businesses within the residential area. A telecommunications facility is located along the highway and an automobile maintenance facility operates near the site's east end. A sawmill operates within the residential lots as a permitted use.

Chugach State Park contains approximately 495,000 acres of land and is one of the four largest state parks in the United States. The park's westernmost boundary lies in the western foothills of the Chugach Mountain Range and is a mere seven miles to the east of downtown Anchorage. The park is further defined by the Knik Arm on the north, Turnagain Arm on the south, and Upper and Lower Lake George and Chugach National Forest on the east.

Additional recreation opportunities in the neighborhood include State of Alaska campgrounds, seasonal salmon fishing at Bird Creek, and the "Bird to Girdwood" paved bike trail.

Summary

The Turnagain Arm district is an established community between Anchorage and Girdwood. Development in the district centers in the Indian, Bird Creek, and Girdwood. The Seward Highway and adjacent railroad bisects the area and is the primary arterial providing access to/from Anchorage to the Kenai Peninsula to the south.

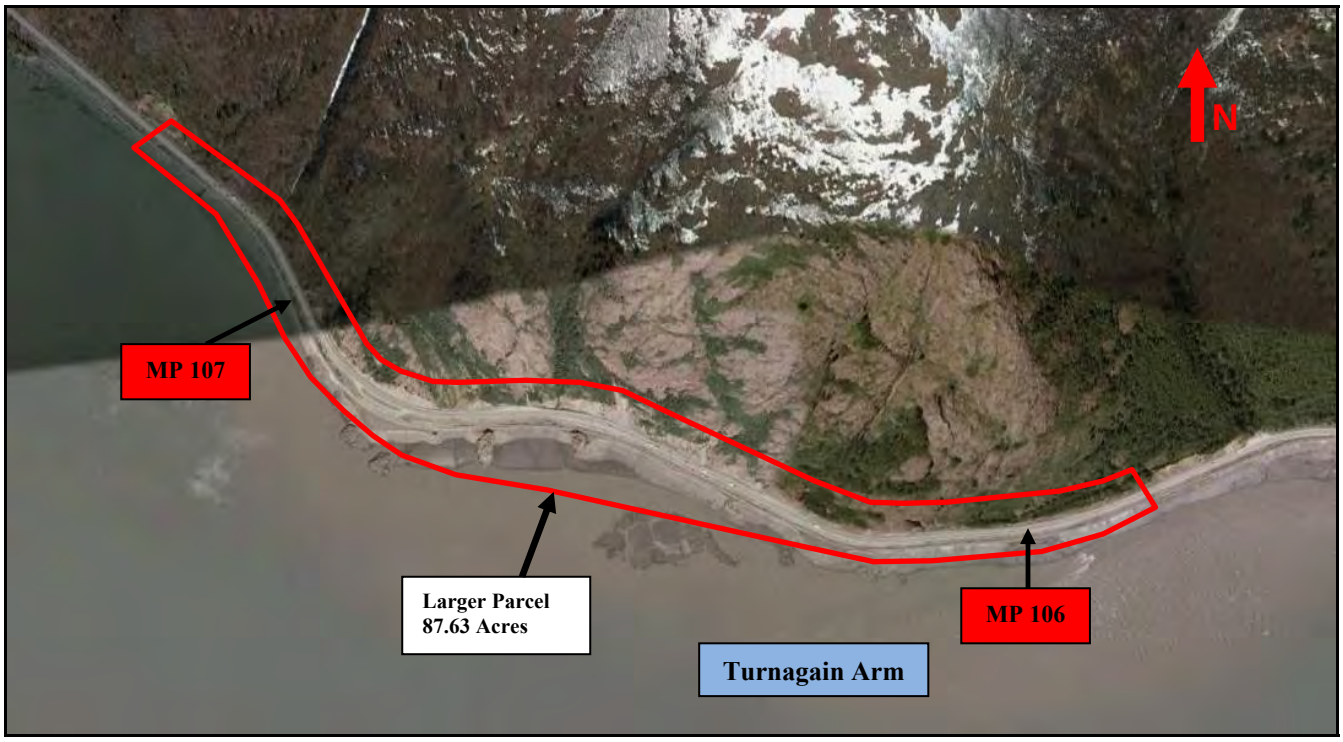
Chapter 3: Property Description and Analysis

Overview

Our appraisal inspection and available mapping are the principal data sources used to describe the appraised property. We requested a preliminary title report, but we did not receive this document. However, we did receive title abstracts from DOWL, Inc. staff that included deeds, easements, Recorder's Office document displays, Master Title Plats, and survey data pertaining to the appraised property. Although we rely upon this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

The subject larger parcel consists of a 87.63 acres located within the Seward Highway right of way and adjacent tidelands, from about Milepost 105.7 to 107.4, near Indian, Alaska. We use a tabular-type format to describe the physical character of the larger parcel. The most important physical factor that affects land use potential is topography and soil geology. We discuss zoning and other regulatory requirements that affect land use potential after describing the parcel. Photographs that follow provide a visual overview while inserted exhibits help illustrate the physical character of the parcel.

Google Earth Aerial Imagery (April 2011)



Land Description

Overview: The larger parcel consists of a swath of land ranging from about 300 to 750 feet wide and extends 1.5 miles along a northwest/southeast path. The parcel includes both uplands and adjacent tidelands. The utility of the parcel varies greatly by topography between tidelands (30% of larger parcel), high-utility uplands (14%), and low-utility uplands (56%). These high-utility uplands are generally level, and vary from about 40 to 120 feet wide.

Present Use: The Seward Highway, Alaska Railroad tracks, and scenic/wildlife viewing areas; *we assume the property is vacant and exclude from valuation all asphalt paving, railroad tracks and equipment, or any other improvements that may exist.*

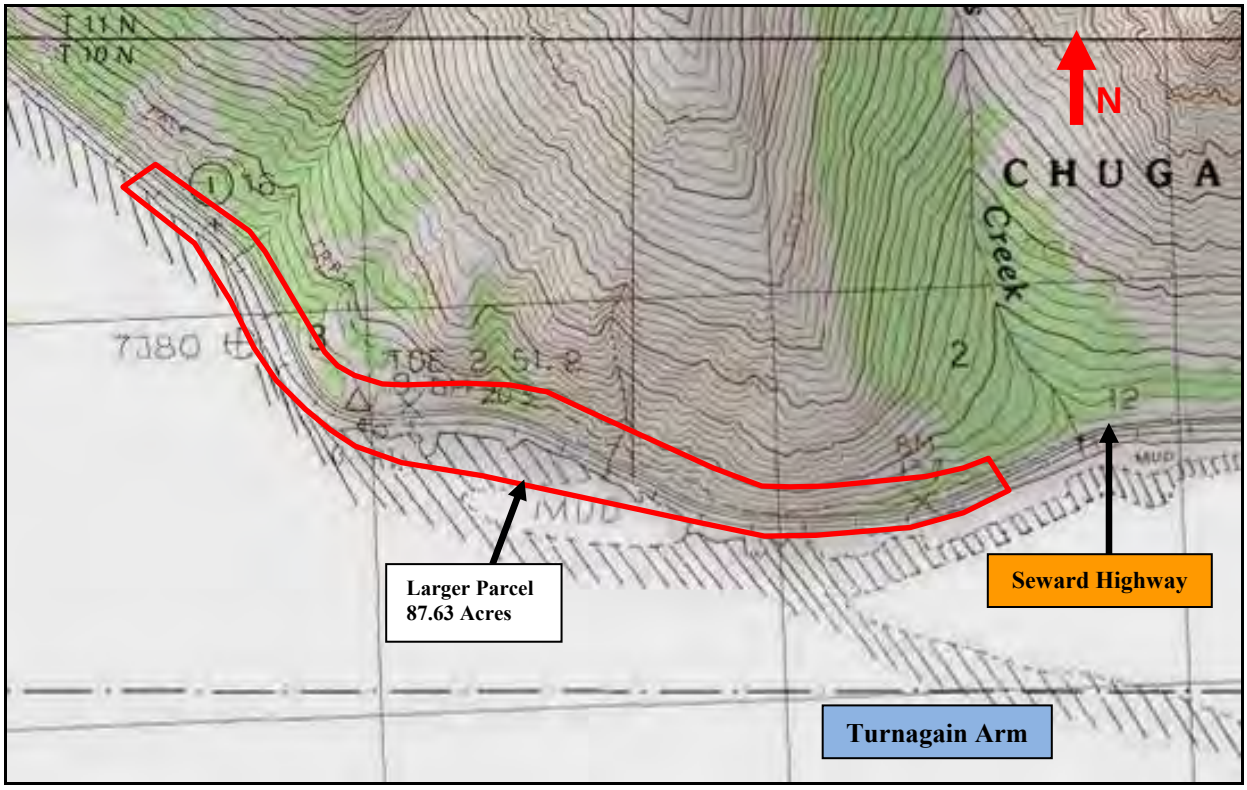
Total Land Area: 87.63± acres or 3,817,163± square feet

Land Area by Type: Tidelands – 26.30± Acres (30%)
Flat Uplands – 12.26± Acres (14%)
Sloping Uplands – 49.07± Acres (56%)

Land Configuration: Irregular, relatively narrow, elongated shape

Access: We presume legal road access

National Geographic Topo Map



Topography: Varies greatly between submerged tidelands (30% of larger parcel), flat to undulating uplands (14%), and steep sloping uplands (56%)

Soils: Bedrock; mud, silt and sand

Vegetation: Brush and grasses, alder, willow, cottonwood, birch cover sloping uplands

Public Utilities: Electricity and telephone on site

Easements: None identified

Environmental Assessment: No evidence of adverse environmental conditions observed during the property inspection

Zoning: Located outside of any zoning authority

Land Use Regulations

Located outside of a zoning authority, there are legal regulations of the U.S. Corps of Engineers that would regulate filling of wetlands or tidelands, and the Department of Environmental Conservation (DEC) would regulate water and wastewater systems.

Subject Property Photographs

On Pages 23 through 25 are photographs taken by Jim Dahl on August 8, 2018, with a map depicting location of photographs on Page 26.

Property Photographs

Taken By: Jim Dahl August 8, 2018



Southeasterly view of westernmost portion of larger parcel



Southeasterly view of western portion of larger parcel; flat, high-utility uplands and steep, low-utility uplands

Property Photographs

Taken By: Jim Dahl August 8, 2018



Easterly view of central portion of larger parcel; flat, high-utility uplands and steep, low-utility uplands



Southeasterly view of central portion of larger parcel toward tidelands

Property Photographs

Taken By: Jim Dahl August 8, 2018



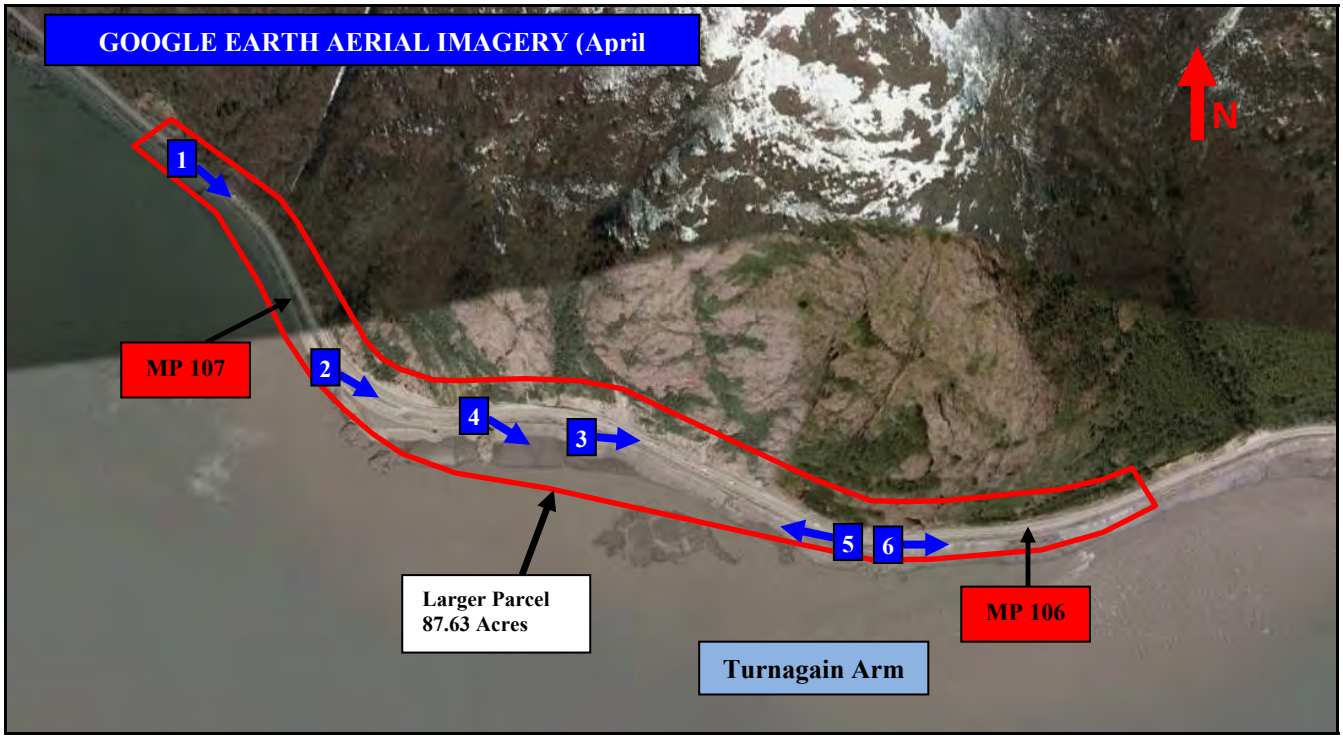
Westerly view of eastern portion of larger parcel toward tidelands



Easterly view of eastern portion of larger parcel

Property Photograph Location Map

Aerial Map Showing Photo Location and Direction



Chapter 4: Highest and Best Use Analysis

Overview

Highest and best use is a market-driven concept rather than a subjective conclusion based on the experience of the appraiser or a property owner's wishes. Economic incentive is the motivation that has a market-effect on the productivity or profitability of the land. Our market value estimate relies upon the following definition of *highest and best use*.

The highest and most profitable use for which the property is adaptable and needed or likely to be needed in the reasonably near future.[6]

The criteria for analyzing potential use are legally permissible, physically possible, financially feasible, and the degree of profitability. Importantly, USAFLA requires that the estimate of highest and best use must be an economic use. A highest and best use analysis follows.

Highest and Best Use Analysis

Physically Possible/Legally Permissible: The appraised larger parcel represents a swath of land that ranges from 300 to 750 feet wide and extends 1.5 miles along a northwest/southeast path. Located outside of a zoning authority, the only legal regulations pertain to permits for water and wastewater systems from Department of Environmental Conservation (DEC), and filling of tidelands from U.S. Corps of Engineers. Despite the presence of tidelands and low utility uplands, high utility uplands create a path between about 40 and 120 feet wide upon which development is most probable. Importantly, the parcel endpoints connect to other segments that are physically suitable for corridor-type development extending from Anchorage to Girdwood and beyond. Regarding the tidelands, a shallow offshore water depth, extreme tidal change, and intertidal sediment (mud, silt, sand) limit use. Because of shape and topographical constraints, few development alternatives are physically possible other than a corridor use.

Financially Feasible/Degree of Profitability: Transportation and utility development are financially feasible land use alternatives because of need for transport along Turnagain Arm, connecting Anchorage to the Kenai Peninsula and various communities along the way. Road, rail and utility transport provides an economic benefit to the supplier and a social benefit to the consumer. Thus, there is a financial incentive to undertake the risk and uncertainty of developing rail or utility lines.

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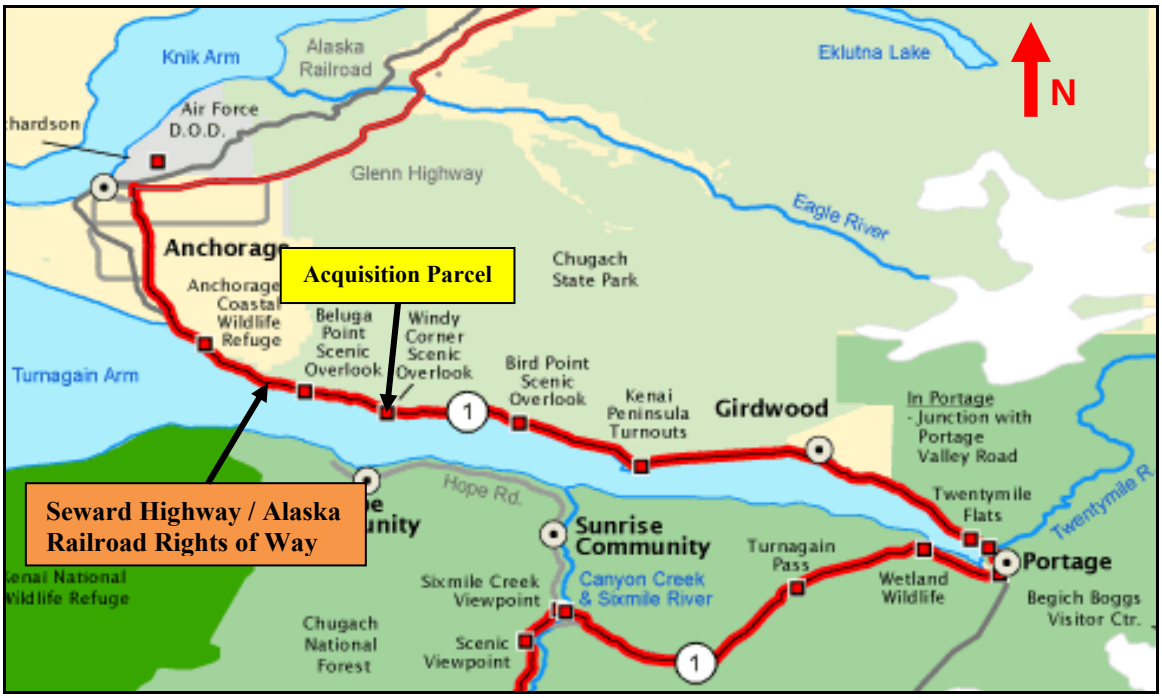
[6] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 22.

We consider transportation or utility development the most productive use of the appraised land. Since its endpoints connect to other segments that are physically suitable for corridor-type development, and provide economic and social benefits, we consider the appraised land a corridor. Thus, the highest and best use of the appraised land is a transport or distribution corridor.

Highest and Best Use	Transport or Distribution Corridor

Larger Parcel Consideration

Determining the larger parcel is a key to the appraisal problem. The three criteria for determining the larger parcel are unity of ownership, contiguity, and unity of use. Fundamental to the unity of use analysis is the principles of substitution, demand, and applied economics. Ignoring these principles will compromise the credibility of the larger parcel analysis.



The subject acquisition contains 26.30± acres of tidelands. Contiguous lands include the Seward Highway and Alaska Railroad rights of way, all owned by the State of Alaska. As stated, USAFLA requires that the estimate of highest and best use must be an economic use, and our analysis determined that use is transport or distribution corridor. While the corridor stretches along Turnagain Arm from Anchorage to the Kenai Peninsula, we determined that a 1.5-mile stretch of land around the

acquisition represents part of this corridor that is capable of being a distinct economic unit. This length of the corridor has relatively level to undulating terrain, as well as steep rock embankments and the acquired tidelands suitable for corridor expansion. Therefore, we determined the acquired parcel owned by the State of Alaska is a portion of an 87.63-acre portion of the corridor, considered the larger parcel.

Chapter 5: Property Valuation – Before Acquisition

Overview

We determined that the appraised property, or larger parcel, represents a portion of a transport or distribution corridor that extends from Anchorage to the Kenai Peninsula. We employ the ATF methodology to estimate the value of the larger parcel. This methodology is a reliable technique of measuring land value for a corridor-type property. The premise of this methodology is the corridor land is as valuable as the land it passes, prior to consideration of corridor factor and usage factor adjustments. Since a majority of the corridor from Indian to the weigh station crosses through near-identical land, we use the key-parcel technique in the comparative analysis. Importantly, the land it crosses includes three different physical types of land (tidelands, high utility uplands, and low utility uplands) that contribute differently.

Because of a lack of sales with tidelands, high utility uplands, and low utility uplands, application of direct sale comparison to the key parcel is not possible without significant appraiser judgment. Therefore, we apply an allocation technique that is similar to the concept of contribution. Though most often used to allocate land value to improved properties when land sale data is lacking, we believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. Again, this technique is utilized because a lack of market data prevents application of a more direct method.

Since the ATF methodology is a variation of the sales comparison approach, we made a comprehensive search of land sales and choose the most similar to perform the comparative analysis of each type of land that makes up the key-parcel. We rely upon qualitative analysis to measure differences between the sales and the three types of land making up the key parcel. After developing unit values of each type of land the corridor passes, we apply these unit values to the larger parcel.

Generally, a corridor-type property represents an assemblage of land that connects two destination points. Often, this assemblage produces greater utility, particularly land with multiple ownership and diverse use. Thus, the market value of the corridor may exceed the value indicated by the ATF methodology and require a market-derived “enhancement” factor. Our analysis indicates an enhancement factor does apply to the appraised lands because, though limited, demand from alternative users for the existing corridor exists.

Sales Comparison Analysis

Again, we use an allocation technique because a lack of market data prevents application of a more direct method. We believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. In the end, a comprehensive sales search provided sufficient data to perform reliable comparative analysis of the key parcel.

Our initial land sales search focused on the Turnagain Arm market district, but turned up limited sale data that offers a reasonable comparability to the subject uplands. Therefore, we expanded our search to include other similar access and topographical characteristics, and locations proximate to Chugach State Park, including Eagle River and Chugiak. Thereafter, we found eight sales to compare directly to the key-parcel uplands. The following table summarizes the primary sales we rely upon.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
10	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	12/13	$105,000	$42,000
11	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	9/08	$120,000	$48,000
14	West side of Ledyard Circle, north of Seward Highway near Milepost 103, *Indian*	TA	3.28	3/17	$115,000	$35,061
15	End of Reindeer Circle, and north side of Seward Highway near Milepost 103, *Indian*	TA	3.23	7/15	$215,000	$66,563

Sales 1, 3, 7 and 8 are located in Eagle River and Anchorage hillside and typify alternative home site or recreational lands with physical restraints comparable to the low-utility uplands of the key parcel. Sales 10, 11, 14 and 15 are located on or near the Seward Highway corridor along Turnagain Arm, and represent sites comparable to the high-utility uplands.

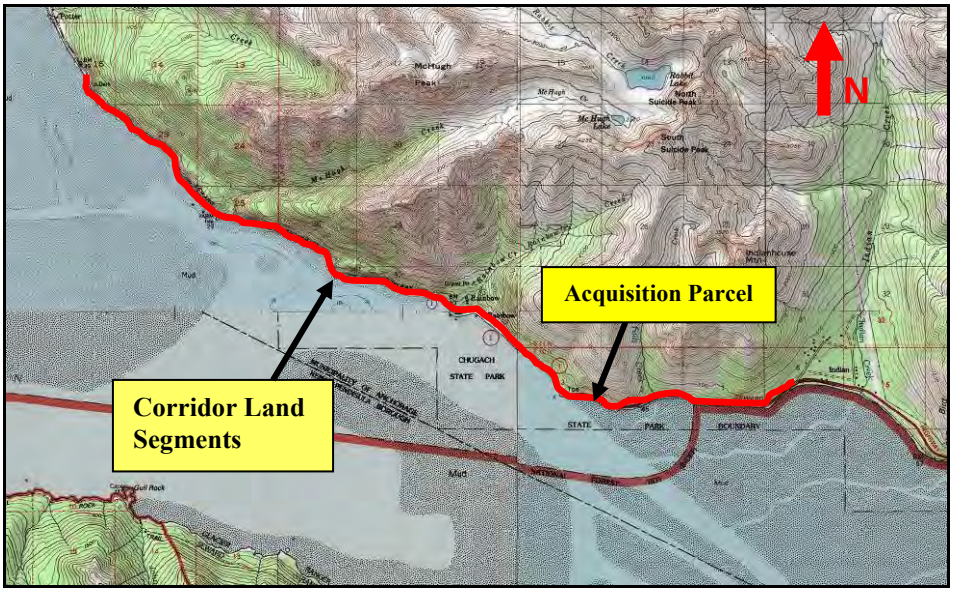
Regarding the comparative analysis, we use qualitative adjustments to measure differences between the sales and the subject. Qualitative adjustment uses a technique known as a relative comparison analysis, which represents a study of market relationships without recourse to quantification. By analyzing and interpreting market behavior, we rate various elements of comparison that influence price as superior, inferior, or similar. This adjustment technique is particularly useful in analyzing the comparable sales because of interrelationships between physical characteristics. The relative comparison grids on Pages 43 and 49 summarize the ratings of the primary land sales to the key parcel.

Since similar tideland sales do not exist, we estimate the value of adjacent uplands and then apply a market-supported price ratio to develop the tideland value. This ratio analysis allows comparison of tideland sales that differ in location and physical character, but have similar highest and best use. The rationale for employing this valuation technique is it reflects market behavior. Simply, our research found a distinct relationship between the price paid for tidelands and the adjacent uplands.

Key Parcel Description and Analysis

The key parcel represents typical-land adjacent to the corridor segments that start near the weigh station south of Potter's Marsh, and extend to the west end of Indian. Described on the next page is the physical, legal, and economic character of the key parcel.

Aerial Overview of Key-Parcel Physical Character



Property Rights Conveyed: Fee simple entitlements

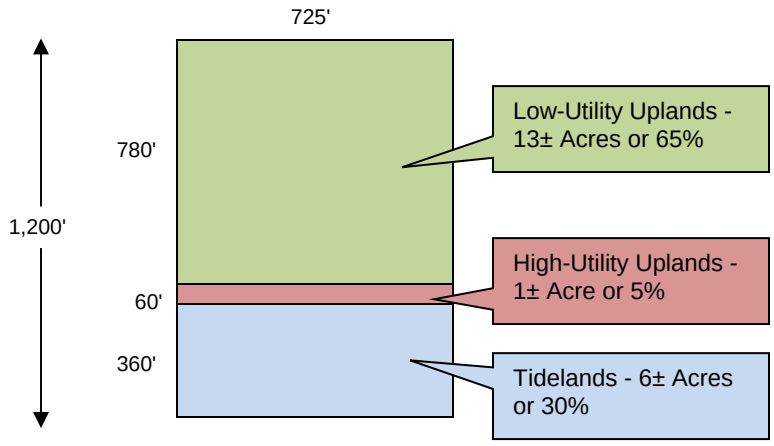
Location: The key parcel is located proximate to the northwest/southeast path of the Seward Highway and Alaska Railroad rights of way. Specifically, the key parcel represents a location from the weigh station south of Potter's Marsh to the west end of Indian.

Topography: This length of the corridor has a strip of relatively level to undulating terrain, as well as steep rock embankments and tidelands

Land Area: A crucial factor of the key-parcel analysis is estimating the size of land adjacent to the appraised corridor. We reviewed the current development pattern as well as land use requirements of this residential district. Parcels similar to the low-utility uplands range from 10± to 80± acres. Regarding the high-utility uplands, aside from the community of Rainbow, lands within this segment include similar narrow strips forming the corridor. These lands with relatively level to undulating terrain are generally about 40 feet wide, though there are small sections that widen to over 100 feet. Based on our analysis, we estimate the average width of the high-utility land is about 60 feet. After analysis, we determined the typical size of land segments adjacent to the corridor is 20± acres, with a width of 725± feet and depth of 1,200± feet. Based on a width of 60 feet for the high-utility uplands, this indicates a size of 1± acre or 5% of the key parcel. Regarding the tidelands, we estimate a size of approximately 30% of the key parcel or 6± acres. Therefore, the low-utility uplands represent 65% of the key parcel or 13± acres.

The following sketch displays the shape and size of the key parcel, with an allocation of the three types of land.

Key Parcel Sketch



Again, the key parcel consists of 13± acres of low-utility uplands, 1± acre of high utility uplands, and 6± acres of tidelands. We use these sizes through our allocation technique for comparison of each type of land.

Road Access: Presume legal road access

Other Physical Characteristics: The key parcel has a rectangular shape. Uplands soils are bedrock, while the tidelands consist of mudflats. Public utility infrastructure includes electricity in close proximity. View amenity includes Turnagain Arm and mountains. Tidelands characterized by shallow offshore water depth, extreme tidal change, and intertidal sediment (mud, silt, sand).

Highest and Best Use: Zoning of the key parcel is Turnagain Arm (TA) District. Permitted uses and densities within the TA District are to conform to the land use plan map, polices, land use definitions, and residential densities of the adopted *Turnagain Arm Comprehensive Plan*. The plan permits most types of low-density residential, commercial, and industrial use. However, physical character, particularly topography, does not support commercial or industrial use. By default, a recreation cabin or single-family home site are the most probable uses of the key parcel. Available data indicates price behavior does not differ significantly for Turnagain Arm District land used for single-family home sites or recreation lands. Therefore, we conclude that the highest and best use of the key parcel is recreation or residential home site.

Analysis of Elements of Comparison

The first step of the valuation process is to ascertain what comparative elements cause price to vary. Again, Sales 1, 3, 7, and 8 typify alternative home site or recreational lands comparable to the low-utility uplands of the key parcel. Sales 10, 11, 14 and 15 represent similar sites comparable to the high-utility uplands.

We determined conditions of sale, location and physical characteristics, i.e., size, access, topography, and utilities, have the greatest influence on price. Importantly, real property rights conveyed, financing terms, and market conditions had no effect on price behavior for these sales. An explanation of adjustments made follows.

Real Property Rights Conveyed

The property rights appraised is the fee simple interest, and each of the sales conveyed similar entitlements. Therefore, no adjustment is necessary for property rights conveyed.

Financing Terms

Based on the definition of market value we assume financing terms in cash, or on terms reasonably equivalent to cash, for the subject property. Sales 1 and 8 were owner-financed transactions. However, owner financing is common in this market, and had little to no effect on price behavior. Therefore, we do not adjust these comparables for financing terms.

Conditions of Sale

Sale 11 represents a transaction of a parcel that conveyed 3.72 acres, though a portion of the site was within a PLO and legal entitlement was in question. Subsequent to the sale, the State claimed legal jurisdiction to 1.22 acres, and the buyer retained entitlement to 2.50 acres. The buyer based the purchase price of $120,000 on a 2.5-acre site, but with potential entitlement to the additional 1.22 acres. As support to this purchase motivation, Sale 10 represents the resale of the same property in 2013 at a lower price of $105,000.

Regarding Sale 1 the buyer owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivation might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district. However, Sale 7 requires a downward adjustment because the adjacent owner was motivated to purchase the property for access. Sales 3, 8, 10, 14 and 15 do not indicate any atypical motivation.

Market Conditions

While analysis indicates modest appreciation from 2008 to the present day, we found no data to support a market conditions adjustment to the one sale that transpired in 2008. Therefore, we do not adjust the comparable land sales for change in market conditions.

Location

The neighborhood environment and proximity of shopping and services are location influences that affect price behavior. The appraised property is located 14 miles from Midtown Anchorage, and about ten miles from a South Anchorage shopping district. Sales 1 is located 15 miles from Midtown Anchorage, but within five miles of the Eagle River commercial core. Sales 3, 7 and 8 are about 10 miles from Midtown Anchorage. Sales 10, 11, 14 and 15 are located along Turnagain Arm, just south of the corridor. Overall, the neighborhoods offer similar locations removed from shopping and services. Therefore, we do not adjust the sales for location.

Physical Characteristics

As stated, size, access, topography, easements and restrictions, and utilities are physical factors that cause price to vary. Importantly, interrelationships between these physical features make it difficult to measure or quantify price differential. Thus, we measure physical differences by a qualitative rating of inferior, similar, or superior.

Size: In comparison to the 13.00± acres of the low-utility uplands, Sales 1, 3, 7 and 8 range from 20.00± acres to 80.00± acres. Typically, an inverse relationship between price and size reflects market behavior. However, this relationship is not linear. In fact, analysis of historical sales develops a price curve that has a steep slope for parcels containing less than 20.00 acres, a moderate slope for parcels ranging from 20.00 to 80.00 acres, and a modest slope for parcels greater than 80.00 acres. The weakness of this analytical process is the presumption that size is the sole price influence, which is an improbable dynamic. Thus, we use the price curve as an analytical tool to bracket value, but not quantify size adjustment. Based on the preceding analysis, we make a significant upward adjustment to Land Sales 1, 3 and 7 for a size over four to six times larger than the low-utility uplands. Additionally, we make an upward adjustment to Land Sale 8 for a size about 50-percent greater than the low-utility uplands.

Regarding the high-utility uplands, Sales 10/11, 14 and 15 are 2.50 to 3.28 acres, whereas the level to undulating uplands are 1.00± acre of the key parcel. Therefore, we make an upward adjustment to these sales for size over twice that of the high-utility uplands.

Access Comparisons: We presume the key parcel has legal road access; however, physical access to the low-utility uplands is marginal and includes substantial risk. Sale 1 does not have developed road access, but does have access via trail for ATV-type vehicles. Sale 7 has access via a dirt roadway. Overall, Sales 1 and 7 have physical and legal constraints similar to the low-utility uplands, and we make no adjustment. Sale 3 has access from a well-used, dirt road that supports multiple properties, and Sale 8 has access via gravel road. Therefore, we adjust these sales downward for access superiority to the low-utility uplands. Sales 10/11, 14 and 15 have highway or secondary road access, which we rate similar to the high-utility uplands. Importantly, access is an important physical characteristic that has a large effect on the price paid for land.

Topography Comparisons: The low-utility uplands have steep sloping topography that includes a steep rock faces along portions of the Seward Highway frontage. Sales 1 and 7 have similar steep sloping topography that limits development potential. Sales 3 and 8 have a more modest slope, which is a superior characteristic requiring a downward adjustment. The high-utility uplands are generally level to undulating. Sales 10/11 have sloping topography requiring an upward adjustment for the inferiority. Sales 14 to 15 are level to gentle sloping that we rate generally similar.

Easement and Restrictions: We do not identify any adverse easements or restrictions affecting the key parcel. However, Sales 3 and 8 are bisected by roadways, indicating an upward adjustment. Further, Land Sale 14

has setbacks from a bisecting creek, is affected by wetlands, and has CCRs that restrict use to single-family residential. Therefore, we make a large upward adjustment to Sale 14.

Utilities: The key parcel has electricity in the general proximity. Sales 1 and 7 do not have any utilities within the general proximity, and require upward adjustments for this inferiority. Sales 3 and 8 have electricity at the site, which is not significantly different from the subject. Sales 10/11 have electricity on site; with natural gas within the general neighborhood; Sales 14 and 15 have electricity and natural gas onsite. Therefore, we adjust sales 10/11, 14 and 15 downward for superior available utilities.

View Amenity: The key parcel has direct view of Turnagain Arm and surrounding mountains. While views differ, desirability of one view over the other is a subjective and personal assessment. Further, there is no data to support adjusting the sales for a view of Knik Arm versus Cook Inlet and Turnagain Arm. Therefore, we only adjust Sale 14 upward for inferior views.

Use (Zoning)

The key parcel is located outside a zoning district. If the parcel was in the private sector, it would be zoned Turnagain Arm (TA) District. This area is designated primarily for low-density residential land use, though some commercial uses are also allowed. Sales 1, 3, 7 and 8 are zoned R-10, a low-density residential district with a minimum lot area of 1.25 to 7.50 acres depending on average slope and soil geology of the parcel. Due to the sloping topography and bedrock soils of the comparable sales, the R-10 zoning is rated generally similar to the low-utility uplands indicating no adjustment is necessary. Sales 10/11, 14 and 15 are zoned R-11 or TA, similar to the high-utility uplands.

Comparative Land Sale Analysis – Low-Utility Lands

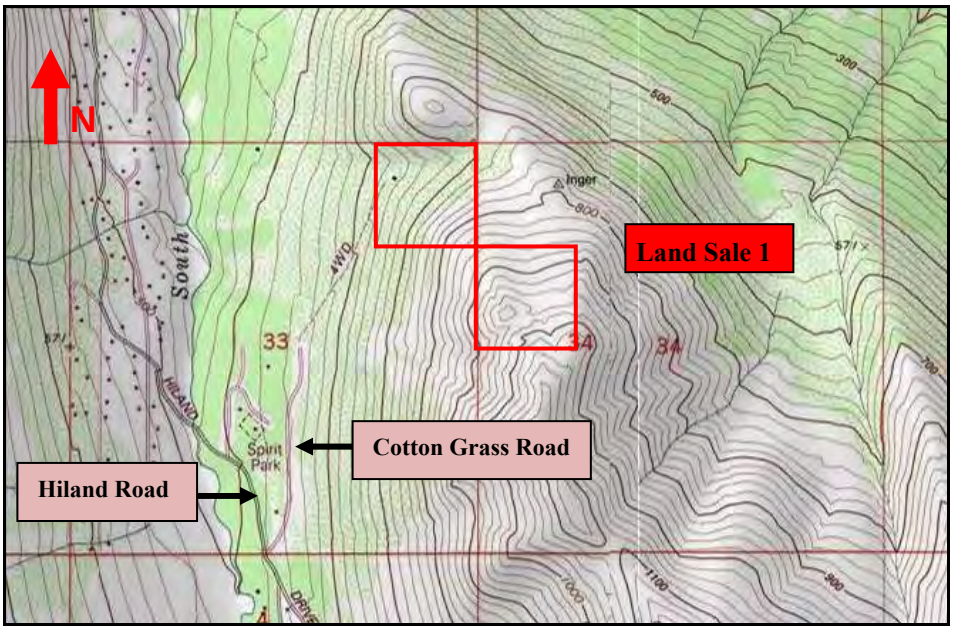
A tabular summary of the land sales used in comparative analysis of the low-utility uplands follows. The inserted map that follows provides a location reference, with additional details of the four comparable land sales in the addendum.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
	Low-Utility Uplands, Turnagain Arm	***TA Assumed***	***13.00***	***-- --***	***-- --***	***-- --***

Land Sale 1

Summary: This sale is an 80-acre parcel located in the South Fork Eagle River valley neighborhood accessible from Hiland Drive. Located adjacent to Chugach State Park boundaries, the parcel has a panoramic northwesterly view of Eagle River and Knik Arm. While trail access is possible to the westerly parcel area, it permits only ATV-type vehicles. Steep topography is the defining physical feature, which diminishes useable land area. Available utilities are within one-half mile.

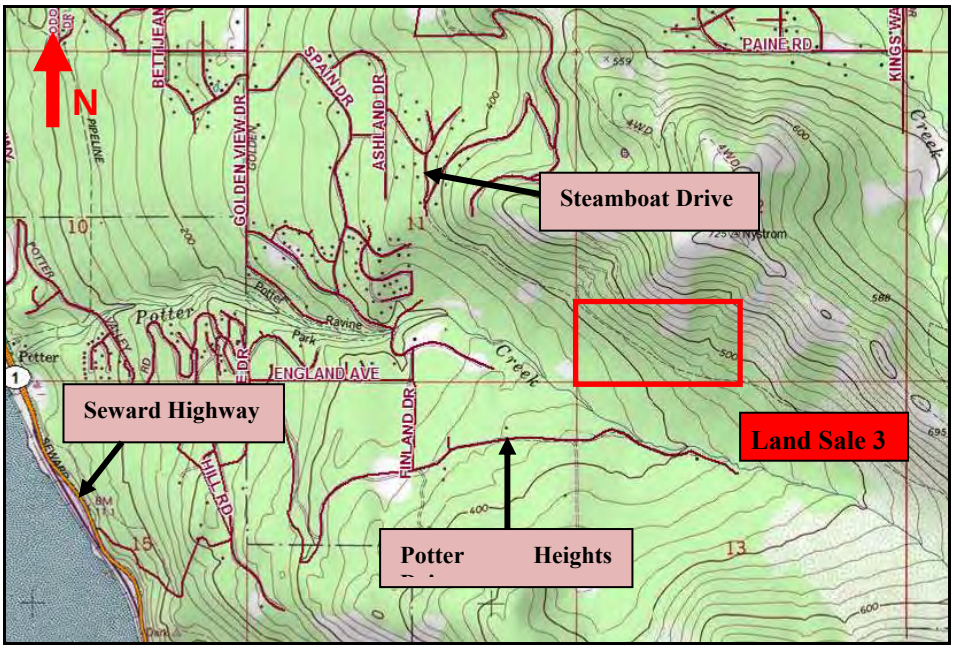


The buyer of Sale 1 owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivations might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district.

Comparative Analysis: Upward adjustments are necessary for inferior size and utilities. Therefore, the net adjustment to Land Sale 1 is upward, indicating a unit value greater than $2,215 per acre.

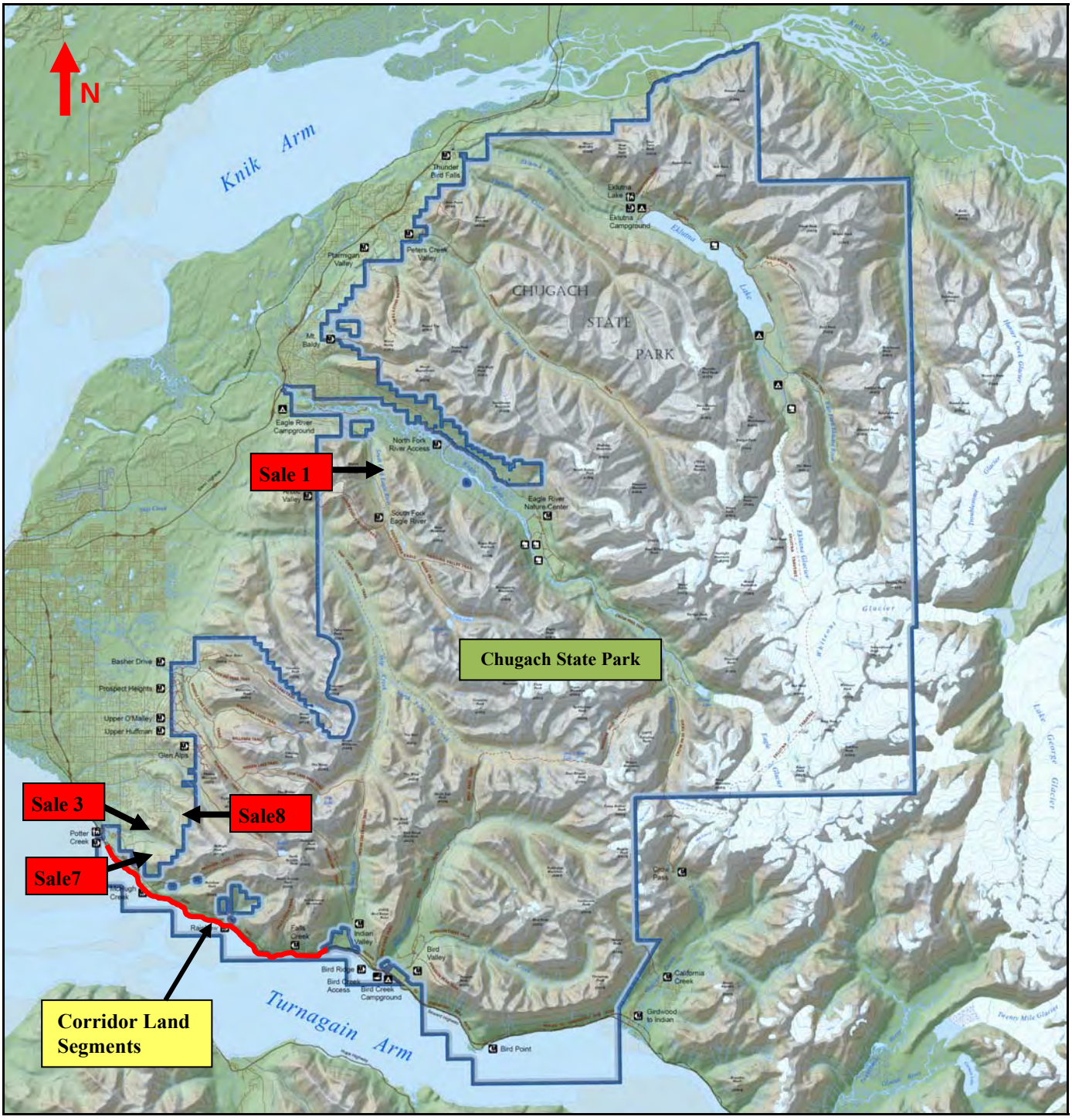
Land Sale 3

Summary: This sale is an 80.00-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Nystrom Peak, the parcel has a moderate to steep slope with southwesterly view of Anchorage and Turnagain Arm. Access is via a dirt trail extension of Steamboat Drive, which bisects the parcel as a 60-foot road easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is at the site.



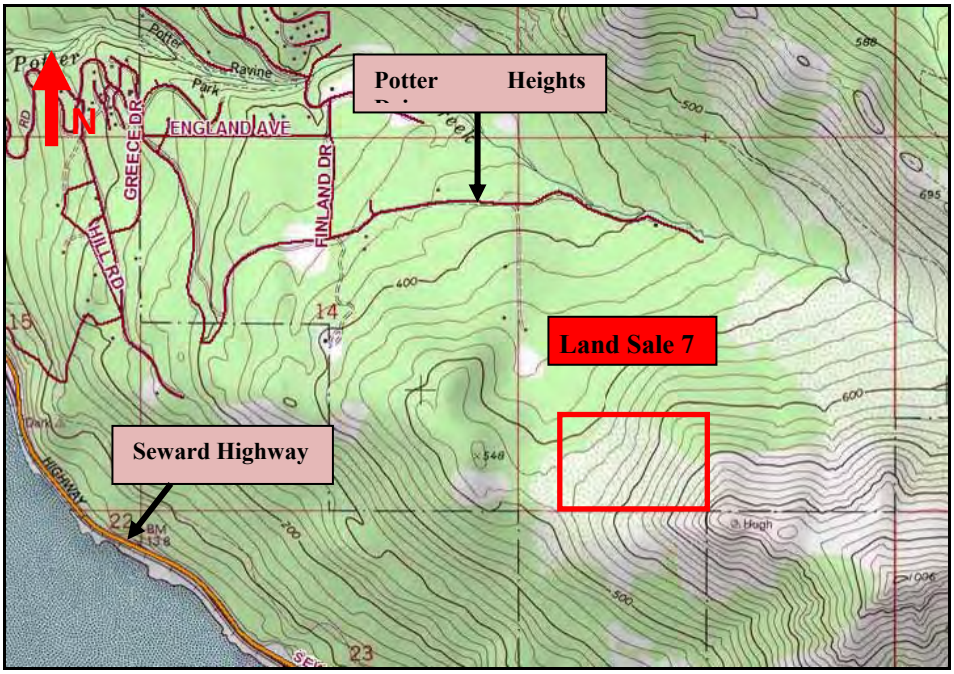
Comparative Analysis: Analysis supports upward adjustments for size and the bisecting roadway. However, access and topography are superior characteristics that outweigh inferiorities. Overall, the net adjustment to Land Sale 3 is downward, indicating a unit value less than $4,375 per acre.

Land Sale Map



Land Sale 7

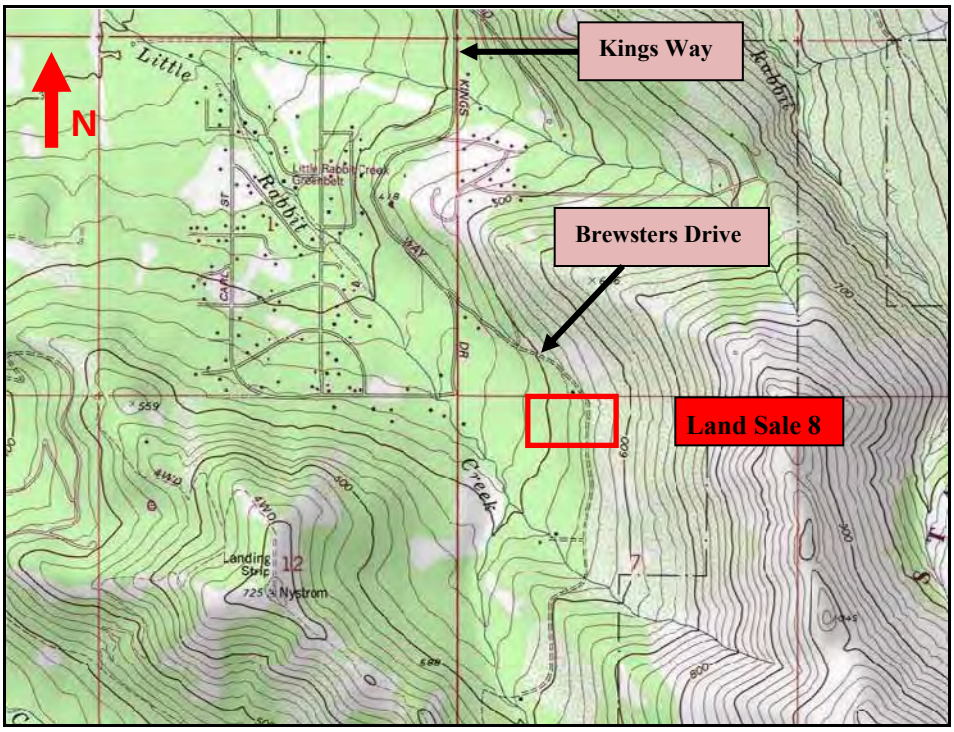
Summary: This sale is a 62.50-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Hugh Peak, the parcel has a moderate to steep slope with northwesterly view of Anchorage and Turnagain Arm. Access is via a dirt road, and an undeveloped section line easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is are about 1,500 feet to the northwest. The buyer is an adjacent property owner that purchased the parcel for access to a proposed homsite.



Comparative Analysis: Analysis supports a downward adjustment for conditions of sale. Conversely, size and lack of utilities are inferior characteristics that outweigh superiority. Overall, the net adjustment to Land Sale 7 is upward, indicating a unit value greater than $2,080 per acre.

Land Sale 8

Summary: This sale is a 20.00-acre parcel located in the Bear Valley neighborhood proximate to Chugach State Park. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage. Public electricity is along the northern boundary.



Comparative Analysis: Analysis supports downward adjustments for superior access and topography. Conversely, the bisecting public roadway and size are inferior. Overall, superior access and topography outweigh the inferior characteristics. Therefore, the net adjustment to Land Sale 8 is downward, indicating a unit value less than $7,450 per acre.

On the following page is an adjustment grid that summarizes the comparative land sale analysis.

Comparable Land Sale Adjustment Grid

Land Sale No.	Subject	Land Sale 1	Land Sale 3	Land Sale 7	Land Sale 8
Sale Price	-- --	**$177,200**	**$350,000**	**$130,000**	**$149,000**
Price/Acre	-- --	**$2,215**	**$4,375**	**$2,080**	**$7,450**
Property Rights Conveyed	*Fee simple*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Financing Terms	*Cash*	Owner-financed **-Similar-**	Cash **-Similar-**	Cash **-Similar-**	Owner-financed **-Similar-**
Conditions of Sale	*Assumed Typical*	**-Similar-**	**-Similar-**	**-Superior-**	**-Similar-**
Market Conditions	*8/18 (Date of value)*	7/14 **-Similar-**	6/17 **-Similar-**	9/15 **-Similar-**	9/15 **-Similar-**
Adjusted $/Acre	-- --	**$2,215**	**$4,375**	**< $2,080**	**$7,450**
Location	*Turnagain Arm*	**- Similar -**	**-Similar-**	**-Similar-**	**-Similar-**
Physical Character					
Size	*13.00 Ac.*	80.00 Ac. **-Inferior-**	80.00 Ac. **-Inferior-**	62.50 Ac. **-Inferior-**	20.00 Ac. **-Inferior-**
Access	*Road access*	**-Similar-**	**-Superior-**	**-Similar-**	**-Superior-**
Topography	*Steep bluff; sloping*	Steep sloping **-Similar-**	Modest to steep slope **-Superior-**	Modest to steep slope **-Similar-**	Modest slope **-Superior-**
Easements and Restrictions	*None*	**-Similar-**	**-Inferior-**	**-Similar-**	**-Inferior-**
Utilities	*Electricity in proximity*	None **-Inferior-**	Electricity **-Similar-**	None **-Inferior-**	Electricity **-Similar-**
View Amenity	*Turnagain Arm; Mountains*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Use (Zoning)	*TA (assumed)*	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-10** **-Similar-**
Overall Relative Comparison Rating		**Inferior**	**Superior**	**Inferior**	**Superior**
Adjusted $/Acre	-- --	**> $2,215**	**< $4,375**	**> $2,080**	**< $7,450**

Reconciliation of Comparative Land Sale Analysis – Low-Utility Uplands

The comparable land sales indicate an unadjusted unit value range from $2,080 to $7,450 per acre. After analysis, Land Sales 3 and 8 are superior indicating a value less than $4,375 per acre. In contrast, Land Sales 1 and 7 are inferior indicating a value greater than $2,215 per acre. We array the land sales and subject on an overall basis as follows.

Land Sale	$/Acre	Overall Rank	Net Adjustment
8	$7,450	Superior	↓
3	$4,375	Superior	↓
Subject	-- --	-- --	-- --
1	$2,215	Inferior	↑
7	$2,080	Inferior	↑

After qualitative adjustments, the range tightens to a value greater than $2,215 but less than $4,375. Sales 3 and 8 have superior access, which is an important physical characteristic that has a large effect on the price paid for land. Therefore, we estimate a value in the lower half of the indicated range or $2,800 per acre. This develops the following value estimate for the low-utility uplands.

Low-Utility Uplands $2,800/Acre

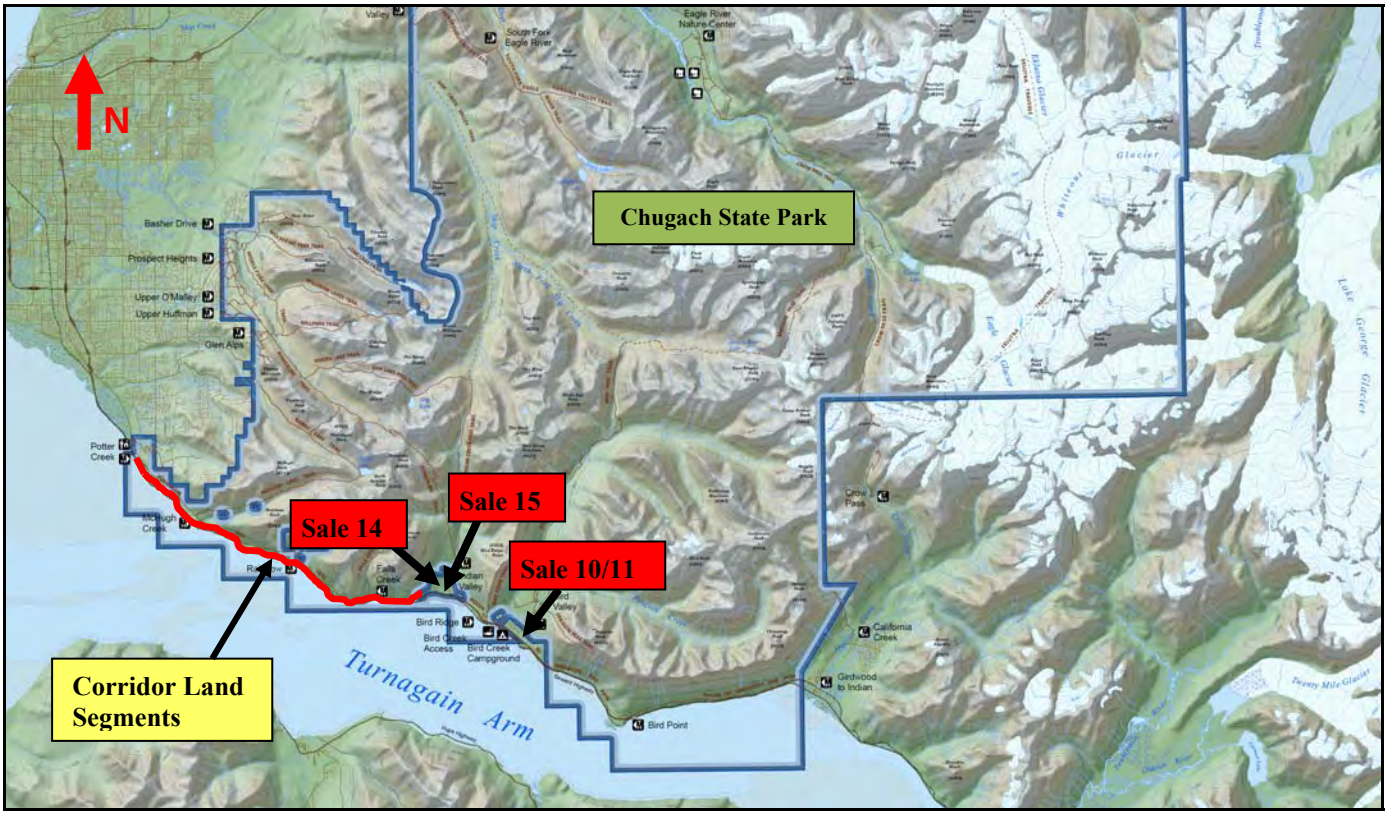
Comparative Land Sale Analysis – High-Utility Lands

A tabular summary of the land sales used in comparative analysis of the high-utility uplands is on the following page. The inserted map that follows provides a location reference, with additional details of the four comparable land sales in the addendum.

Comparable Land Sales

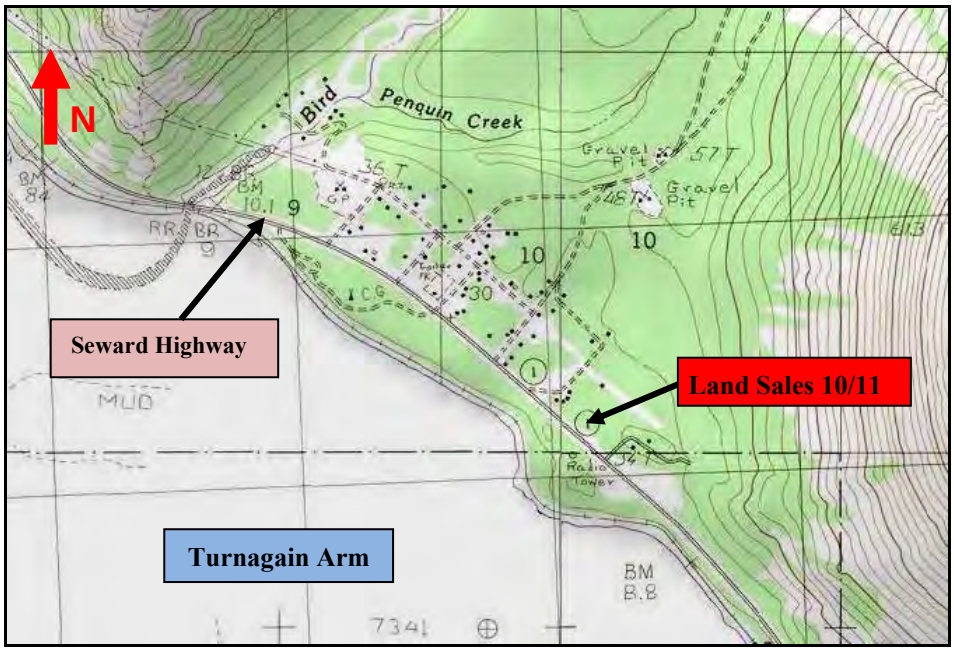
No.	Location	Zone	Size	Date	Price	Price/ Acre
10	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	12/13	$105,000	$42,000
11	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	9/08	$120,000	$48,000
14	West side of Ledyard Circle, north of Seward Highway near Milepost 103, *Indian*	TA	3.28	3/17	$115,000	$35,061
15	End of Reindeer Circle, and north side of Seward Highway near Milepost 103, *Indian*	TA	3.23	7/15	$215,000	$66,563
	High-Utility Uplands, Turnagain Arm	***TA Assumed***	***1.00***	-- --	-- --	-- --

Land Sale Map



Land Sales 10 & 11

Summary: Land Sales 10 and 11 represent a sale/resale of a parcel located on the Seward Highway, near Bird Creek. The parcel has panoramic views of Turnagain Arm and surrounding mountains. Topography includes a relatively steep slope at the south boundary, but the eastern portion of the site is generally level. A driveway provides direct Seward Highway access. Public utilities available include electricity, with natural gas in the general neighborhood.

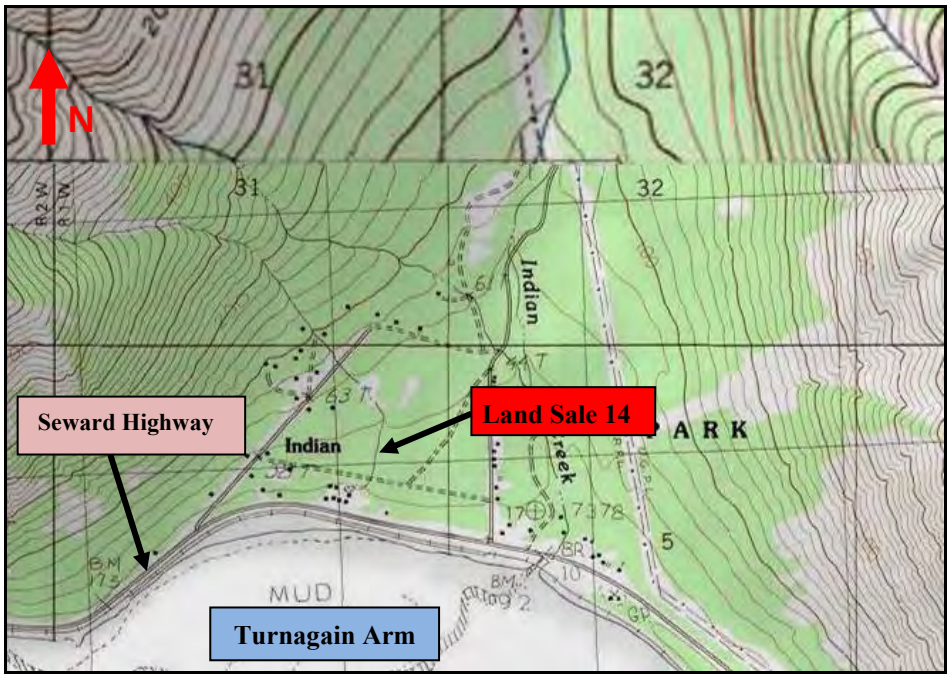


Comprised of two adjacent lots total land area transferred by deed is 163,350 square feet or 3.72 acres. The south lot (1.22 acres) is a highway remainder and private ownership was in question at the time of Sale 11. Subsequently, the State of Alaska has claimed jurisdiction to the 1.22 acres, while the buyer retained entitlement to 2.50 acres. The buyer of Sale 11 based the purchase price of $120,000 on a 2.5-acre site, but with potential entitlement to the additional 1.22 acres. As support to this purchase motivation, Sale 10 represents the resale of the same property in 2013 at a lower price of $105,000.

Comparative Analysis: Analysis supports upward adjustments for inferior size and topography. Conversely, superior shape and utilities require downward adjustments. Additionally, Sale 11 requires a downward adjustment for conditions of sale. After review, inferior topography and size override the superiorities of Sale 10, indicating a unit value greater than $42,000 per acre. However, the Sale 11 indicates a unit value approximating $48,000 per acre.

Land Sale 14

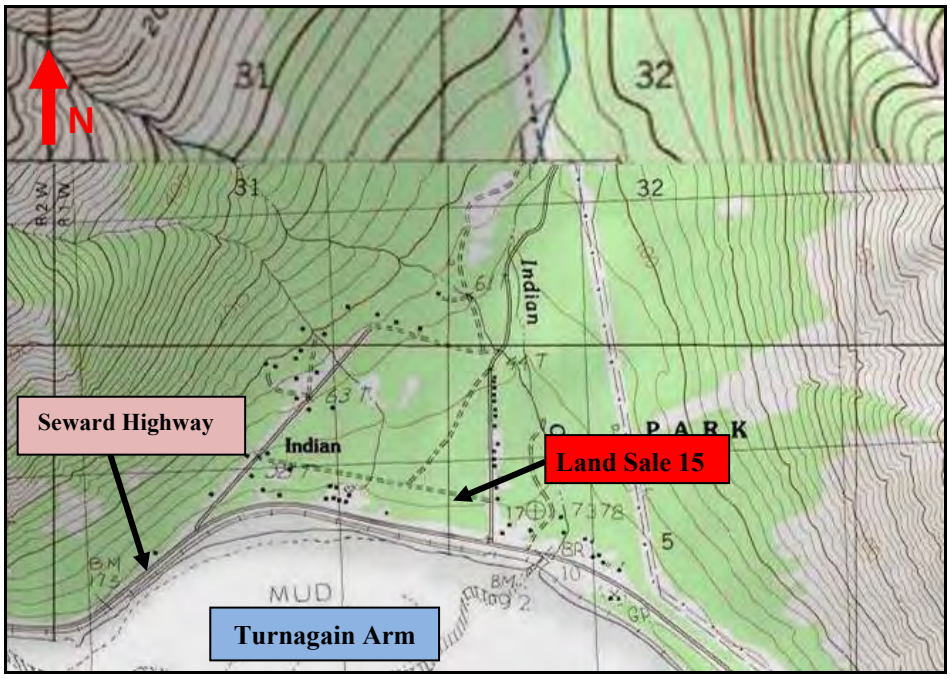
Summary: This sale is a 3.28-acre parcel located in a relatively new subdivision in Indian, north of the Seward Highway. Setting at a gentle slope, the parcel has partial mountain view of Bird Ridge. Access is via a paved Ledyard Circle. A small creek bisects the parcel, and creates a designated wetlands area restricting development potential and increasing development costs. Subdivision CCRs restrict use to single-family residential. Utilities at the site include electricity and natural gas.



Comparative Analysis: Analysis supports a downward adjustment for superior shape and utilities. Conversely, size, wetlands, and inferior view amenity require upward adjustments. Overall, the net adjustment to Land Sale 14 is upward, indicating a unit value greater than $35,061 per acre.

Land Sale 15

Summary: This sale is a 3.23-acre parcel located in a relatively new subdivision in Indian, fronting the Seward Highway. The parcel has panoramic views of Turnagain Arm and surrounding mountains. Access is via paved Reindeer Circle; the plat prohibits direct access to/from Seward Highway. Utilities at the site include electricity and natural gas. Although commercial use is allowable, lack of highway access diminishes commercial appeal.



Comparative Analysis: Analysis supports a downward adjustment for superior shape and utilities. Conversely, size requires an upward adjustment. Overall, the net adjustment to Land Sale 15 is downward, indicating a unit value less than $66,563 per acre.

On the following page is an adjustment grid that summarizes the comparative land sale analysis.

Comparable Land Sale Adjustment Grid

Land Sale No.	Subject	Land Sale 10	Land Sale 11	Land Sale 14	Land Sale 15
Sale Price	-- --	**$105,000**	**$120,000**	**$115,000**	**$215,000**
Price/Acre	-- --	**$42,000**	**$48,000**	**$35,061**	**$66,563**
Property Rights Conveyed	*Fee simple*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Financing Terms	*Cash*	Cash **-Similar-**	Cash **-Similar-**	Cash **-Similar-**	Cash **-Similar-**
Conditions of Sale	*Assumed Typical*	**-Similar-**	**-Superior-**	**-Similar-**	**-Similar-**
Market Conditions	*8/18 (Date of value)*	12/13 **-Similar-**	9/08 **-Similar-**	3/17 **-Similar-**	7/15 **-Similar-**
Adjusted $/Acre	-- --	**$42,000**	**< $48,000**	**$35,061**	**$66,563**
Location	*Turnagain Arm*	**- Similar -**	**- Similar -**	**- Similar -**	**- Similar -**
Physical Character					
Size	*1.00 Ac.*	2.50 Ac. **-Inferior-**	2.50 Ac. **-Inferior-**	3.28 Ac. **-Inferior-**	3.23 Ac. **-Inferior-**
Shape	*Narrow rectangle*	**-Superior-**	**-Superior-**	**-Superior-**	**-Superior-**
Access	*Road access*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Topography	*Level to undulating*	Level to steep slope **-Inferior-**	Level to steep slope **-Inferior-**	Gentle slope **-Similar-**	Level to undulating **-Similar-**
Easements and Restrictions	*None*	**-Similar-**	**-Similar-**	**-Inferior-**	**-Similar-**
Utilities	*Electricity in proximity*	Electricity; NG in area **-Superior-**	Electricity; NG in area **-Superior-**	Electricity & NG **-Superior-**	Electricity & NG **-Superior-**
View Amenity	*Turnagain Arm; Mountains*	**-Similar-**	**-Similar-**	**-Inferior-**	**-Similar-**
Use (Zoning)	*TA (assumed)*	**R-11** **-Similar-**	**R-11** **-Similar-**	**TA** **-Similar-**	**TA** **-Similar-**
Overall Relative Comparison Rating		**Inferior**	**Similar**	**Inferior**	**Superior**
Adjusted $/Acre	-- --	**> $42,000**	**= $48,000**	**> $35,061**	**< $66,563**

Reconciliation of Comparative Land Sale Analysis – High-Utility Uplands

The comparable land sales indicate an unadjusted unit value range from $42,000 to $66,563 per acre. After analysis, Land Sale 15 is superior indicating a value less than $66,563 per acre. In contrast, Land Sales 10 and 14 are inferior indicating a value greater than $42,000 per acre. Additionally, Land Sale 11 is rated generally similar indicating a value approximating $48,000 per acre. We array the land sales and subject on an overall basis as follows.

Land Sale	$/Acre	Overall Rank	Net Adjustment
15	$66,563	Superior	↓
11	$48,000	Similar	-- --
Subject	-- --	-- --	-- --
10	$42,000	Inferior	↑
14	$35,061	Inferior	↑

After qualitative adjustments, the sales support a value approximating $48,000 per acre. Based on the preceding data, reasoning, and analysis, we estimate a value of $48,000 per acre for the high-utility uplands.

High-Utility Uplands $48,000/Acre

Ratio Analysis of Tideland versus Adjacent Upland Sale Price

As stated, tideland sales are scarce because of their intrinsic productivity with adjoining uplands. Moreover, the public sector owns a majority of tidelands in rural Alaska communities with marine dependent economies. Further, most sales involving tidelands are improved properties with an integrated economic use. While sales of properties with tidelands transpire, it is difficult to extricate the tideland price from the total purchase. Consequently, we use a ratio method of valuing the appraised tidelands.

The ratio method is a common analytical tool founded on market behavior collected from several Alaska communities. The ratios reflect utility of the tidelands, as it relates to the adjacent uplands. The table on the following page summarizes four primary transactions with independent price negotiations for the uplands and adjoining tidelands.

The table also summarizes 10 secondary sales that illustrate price behavior between uplands and adjoining tidelands. While these transactions are credible indicators of market behavior, they are located in Kodiak and Southeast Alaska where private owned tidelands are more prevalent. We do not emphasize the secondary indicators, but they

bracket tideland price behavior involving tidelands with an integrated economic use with the adjoining uplands.

Summary Analysis of Upland Versus Tideland Price

No.	Location	Anticipated Use	Upland Price	Tideland Price	Ratio
	Primary Market Indicators				
T-1	Seward, Alaska	Oil Industry/Dock	$1.05/SF	$0.15/SF	**14.3%**
T-2	Nikiski, Alaska	Oil Industry/Dock	$1.10/SF	$0.18/SF	**16.4%**
T-3	Anchorage, Alaska	Residential	$3.48/SF	$0.35/SF	**10.0%**
T-4	Unalaska, Alaska	Fuel Dock	$5.22/SF	$1.05/SF	**20.0%**
	Secondary Market Indicators				
T-5	Kodiak, Alaska	Fish Processing	$16.20/SF	$6.34/SF	**39.1%**
T-6	Kodiak, Alaska	Fish Meal Plant	$5.59/SF	$1.42/SF	**25.4%**
T-7	Sitka, Alaska	Cold Storage	$14.97/SF	$4.50/SF	**30.1%**
T-8	Sitka, Alaska	Marina	$6.25/SF	$0.95/SF	**15.2%**
T-9	Ketchikan, Alaska	Dock	$14.60/SF	$3.35/SF	**23.0%**
T-10	Ketchikan, Alaska	Lodge/Dock	$1.28/SF	$0.32/SF	**25.0%**
T-11	Petersburg, Alaska	Fish Processing	$2.85/SF	$0.60/SF	**21.1%**
T-12	Petersburg, Alaska	Cargo Transfer	$3.00/SF	$0.76/SF	**25.3%**
T-13	Haines, Alaska	Dock	$1.50/SF	$0.25/SF	**16.7%**
T-14	Wrangell, Alaska	Warehouse	$3.00/SF	$0.62/SF	**20.7%**

The primary market indicators develop a price ratio ranging from 10.0 to 20.0 percent. Tideland Ratio 1 consists of 43± acres of uplands and 80± tideland acres, although only 15± acres sustain an integrated use. Therefore, excess tideland area, a majority of which has limited utility, trended the ratio downward. Tideland Ratio 2 fronts the east shore of Cook Inlet just north of Nikiski providing oil industry support services. Upland acreage total 31± acres that have an integrated use with the 29.35± acres of tidelands. Importantly, the tideland area extends 2,320± feet offshore to enhance access constraints caused shallow depth and severe tidal change. In addition, the tidelands include acreage for future expansion. These physical and economic factors trended the price ratio downward.

Tideland Ratio 3 is shallow, flat, bisected by an anadromous stream, and affected by large tidal shifts exceeding 30 feet. Located in Anchorage, the associated residential use of the uplands further limits the utility of the tidelands. Tideland Ratio 4 represents a fuel dock fronting Captain Bay in Unalaska. Although 31.01± acres of tidelands support the 25± acres of upland, the tideland acreage is necessary to berth more than one vessel for safety purposes.

Reconciliation of Tideland Ratio Analysis

We emphasize Tideland Ratios 2 and 3 in the reconciliation process. Tideland Ratio 2 compares to the subject in terms of shallow offshore water depth and Cook Inlet tidal change. Further, potential use of the tidelands for expansion is similar to the subject. Tideland Ratio 3 compares to the subject due to a similar physical character. However, the provide very limited utility to the adjacent upland use. Although the two ratio indicators represent the lower end of the bracket, the physical character of appraised tidelands warrant this comparison. After analysis, the market indicators support a ratio in the middle of the indicated range, or 15 percent of upland value.

Tideland Ratio 15%

Conclusion of Tideland Value

We rely upon a ratio analysis to estimate the unit value of the key parcel tidelands. We employ this methodology because similar tideland sales do not exist for direct comparison. We concluded with a unit value of $2,800 per acre for the low-utility uplands, and $48,000 per acre for the high-utility uplands. Thereafter, we performed a ratio analysis of integrated sales that require tidelands to support upland use. Analysis supports a 15 percent ratio between upland value and tideland value.

In order to apply the ratio analysis, we first develop a weighted average for the unit values of the adjacent uplands, which is developed as follows.

Low-Utility Uplands: 13.0 Ac. × $2,800/Ac.	***$36,400***
High-Utility Uplands: 1.0 Ac. × $48,000/Ac.	***+ $48,000***
Total Value of Key Parcel Uplands	***$84,400***
$84,400 ÷ 14.0 Ac. = $6,029/Ac.	

Based on the preceding, the blended unit value of the key parcel uplands is estimate at $6,029 per acre. Thus, we conclude the unit value indicated for the 6.0-acre key-parcel tidelands is $904 per acre.

$6,029/Upland Acre @ 15% Ratio = $904/Tideland Acre

Conclusion of Larger Parcel Value

Again, we employ the ATF methodology to estimate the value of the larger parcel. This methodology is a reliable technique of measuring land value for a corridor-type property. The premise of this methodology is the corridor land is as valuable as the land it passes, prior to consideration of corridor factor and usage factor adjustments. Since a majority of the corridor from Indian to the weigh station crosses through near-identical land, we used the key-parcel technique in the comparative analysis. Importantly, the land it crosses includes three different physical types of land (tidelands, high utility uplands, and low utility uplands) that contribute differently.

Because a lack of market data prevents application of a more direct method, we apply an allocation technique. We believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. Based on the preceding key-parcel analysis, unit prices of the three types of land are summarized as follows.

Low-Utility Uplands	***$2,800/Acre***
High-Utility Uplands	***$48,000/Acre***
Tidelands	***$904/Acre***

The next step is to apply these unit values to the larger parcel. This develops the following value indication for the larger parcel before acquisition.

Low-Utility Uplands: 49.07 Ac. × $2,800/Ac.	***$137,396***
High-Utility Uplands: 12.26 Ac. × $48,000/Ac.	***$588,480***
Tidelands: 26.30 Ac. × $904/Ac.	***+ $23,775***
ATF Value of Larger Parcel	***$749,651***

Analysis of Corridor Factor

The final step is to determine if an enhancement factor applies to the appraised lands. As stated, a corridor-type property represents an assemblage of land that connects two destination points. Often, this assemblage produces greater utility, particularly land with multiple ownership and diverse use. Thus, the market value of the corridor may exceed the value indicated by the ATF methodology and require a market-derived "enhancement" factor. While, the appraised property represents single underlying ownership, there are multiple users including highway, railroad, and utilities. Therefore, our analysis indicates an enhancement factor does apply to the appraised lands because, though

limited, demand from alternative users for the existing corridor exists. However, measuring its market-effect on price is difficult because of limited demand and scarcity of reliable sale data.

Significantly, we are not aware of any corridor sales in Alaska, although there are right-of-way leases that, reportedly, apply a CF to the ATF value. While corridor property sales located outside of Alaska transpire with regularity, they involve numerous comparative factors that exceed the scope of our knowledge and expertise. However, discussions with parties with knowledge of these transactions stated sale data indicates the CF is trending upward, albeit, the incremental change is relative small.

Importantly, we have reviewed a consulting assignment for the analysis of a potential corridor enhancement factor relating to a portion of Alaska Railroad Corporation's (ARRC) rail corridor. Prepared in 2004 by Randy L. Seale, MAI of Allen, Williford & Seale, Inc., this consultation cites 15 corridor enhancement factor transactions throughout the United States. The comparables have a corridor enhancement factor ranging from 1.00 to 7.05, though most fall within an enhancement factor range from 1.25 to 1.60. Based on several factors, Mr. Seale determined that an appropriate corridor enhancement factor for the ARRC segment is 1.50, as it relates to the ATF value.

Based on a similar-type corridor use, we concur with the data and analysis provided in the above-mentioned consulting assignment. Therefore, we conclude with a CF of 1.50 or a 50-percent enhancement to the ATF value.

Estimate of Corridor Enhancement Factor 1.50

Multiplying the estimated CF of 1.50 to the ATF value of the appraised property develops the following estimate of market value.

$749,651 (ATF Value) × 1.50 CF = $1,124,477

In conclusion, the market value of the property before the acquisition is estimated as follows.

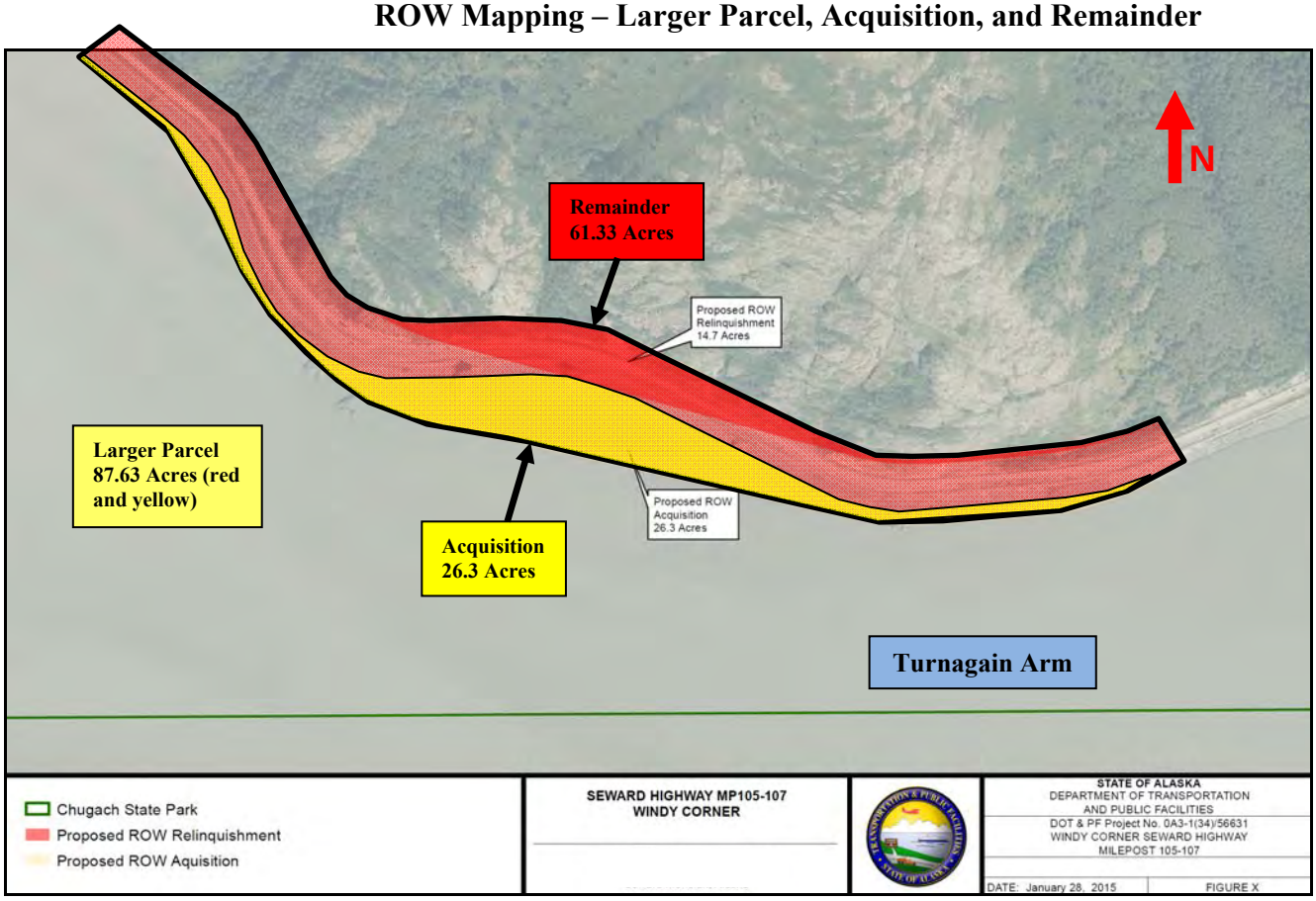
Market Value Before Acquisition	**$1,124,500**

Chapter 6: Property Valuation – After Acquisition

Overview

This chapter analyzes the property after the proposed acquisition, or the remainder parcel. The ROW map below illustrates the partial acquisition affecting the appraised property, while the table on the following page provides a comparative analysis before and after the acquisition.

ROW Mapping – Larger Parcel, Acquisition, and Remainder



Before and After Acquisition Summary

	Larger Parcel (Before Acquisition)	Remainder Parcel (After Acquisition)
Land Area:	87.63 Ac.	61.33 Ac.
Low-Utility Uplands:	49.07 Ac.	49.07 Ac.
High-Utility Uplands:	12.26 Ac.	12.26 Ac.
Tidelands:	26.30 Ac.	0.00 Ac.
Shape:	Irregular	Similar
Road Access:	Yes	Same
Topography:	Tidelands, level lands, steep sloping	Level lands, steep sloping
Soils:	Mudflats, bedrock	Bedrock
Utilities:	E & T	Same
Easements and Restrictions:	None identified	Same
Improvements:	Assumed vacant	Same
Zoning:	Not zoned	Same
Highest and Best Use:	Transport or distribution corridor	Same

Essentially, the proposed acquisition consists of all of the 26.30 acres of tidelands; the area of the high-utility uplands and low-utility uplands remains unchanged by the acquisition. Therefore, the area of the remainder parcel is reduced to 61.33 acres, with 49.07 acres of low-utility uplands, 12.26 acres of high-utility uplands, and no tidelands. Importantly, the acquisition does not cause a change to the highest and best use of the property.

Because the remainder is similar to the property before the acquisition, the market data used in the valuation of the larger parcel are also reliable comparisons in valuing the remainder. Therefore, we utilize our allocation technique and key-parcel analysis previously discussed. To review the key-parcel analysis, unit prices of the three types of land are summarized as follows.

Low-Utility Uplands	***$2,800/Acre***
High-Utility Uplands	***$48,000/Acre***
Tidelands	***$904/Acre***

The next step is to apply these unit values to the remainder parcel. This develops the following value indication for the property after acquisition.

Low-Utility Uplands: 49.07 Ac. × $2,800/Ac.	***$137,396***
High-Utility Uplands: 12.26 Ac. × $48,000/Ac.	***$588,480***
Tidelands: 0.00 Ac. × $904/Ac.	***+ $0***
ATF Value of Remainder Parcel	***$725,876***

Finally, we apply the estimated CF of 1.50 to the ATF value of the appraised property to develop the following estimate of market value after acquisition.

$725,876 (ATF Value) × 1.50 CF = $1,088,814

In conclusion, the market value of the property after the acquisition is estimated as follows.

Market Value After Acquisition	**$1,088,800**

Chapter 7: Market Value of Acquisition

Overview

We employ the before and after methodology to value the acquisition of the Acquisition Parcel. Analysis concluded with market value estimate before the acquisition as follows.

Value Before Acquisition	***$1,124,500***

Analysis concluded with market value estimate before the acquisition as follows.

Value After Acquisition	***$1,088,800***

The value of the acquisition is the difference between the before and after opinions of market value. Thus, the value of the acquisition of the Acquisition Parcel is as follows.

Market Value of Acquisition	***$35,700***

Market Value of Acquisition

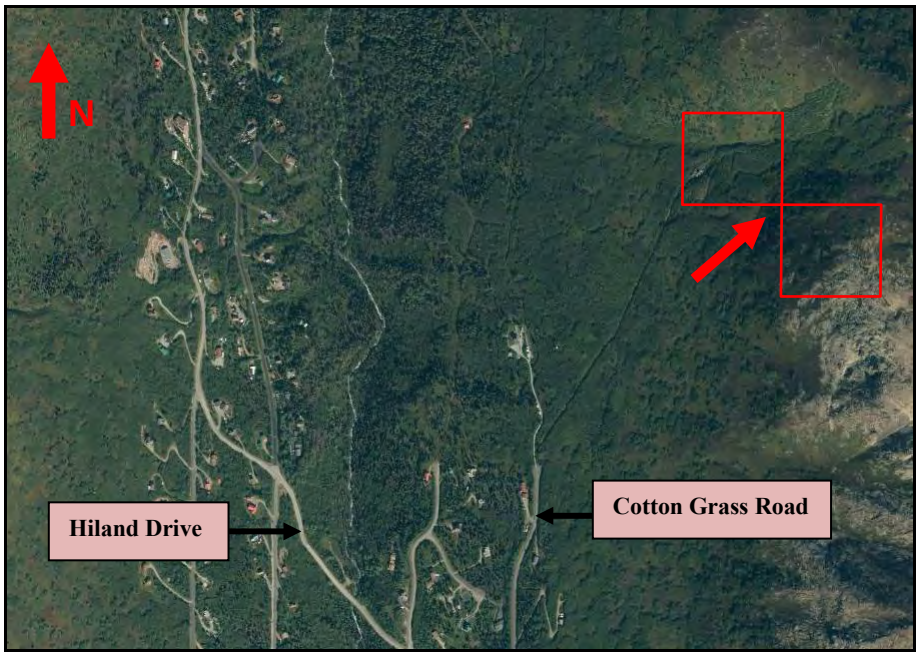
Based on the preceding data, reasoning, and analysis, it is our opinion the market value of the acquisition "Acquisition Parcel," as of August 8, 2018, is as follows.

Market Value of Acquisition	**$35,700**

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

MacSwain Associates LLC

Comparable Land Sale 1



Location:	East of Cotton Grass Drive off of Hiland Road, 9± miles southeast of Eagle River, Alaska
Assessor Numbers:	050-411-40 & 41
Legal Description:	NE4NE4, Section 33, T14N, R1W SM and SW4NW4, Section 34 T14N, R1W, SM, Anchorage Recording District

Grantor:	Eric Gingrich Personal Representative for Estate of Stephen Gingrich	**Instrument:**	Personal Representative's Deed
Grantee:	Hertha Monroe	**Document No:**	2014-028880-0
Sale Date:	7/14	**Data Source:**	Broker
Sale Price:	$177,200	**Confirmed By:**	Dan Shantz
Cash Equivalent Price:	$177,200	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $88,600 down payment, $88,600 Deed of Trust at undisclosed terms		

Land Area:	80.00± acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential
Access:	Trail	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements	**Inspected By:**	Dan Shantz

Property Description:

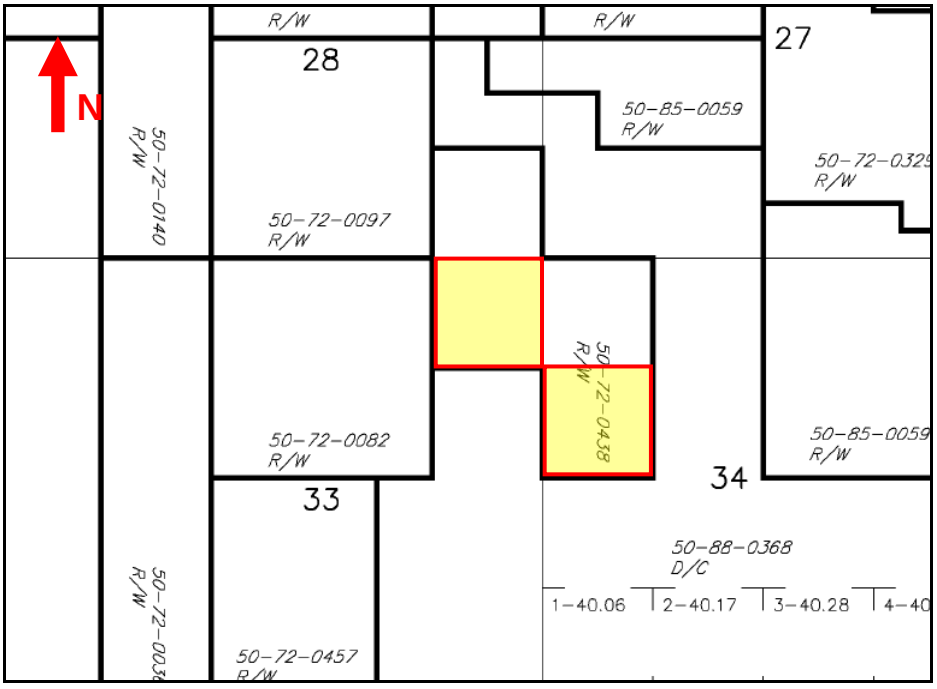
This 80-acre parcel is located on the eastern slope of the South Fork Eagle River valley neighborhood accessible from Hiland Road. Location is 15± miles from Midtown Anchorage. A trail extending nearly one-half mile links the parcel to Cotton Grass Drive. Topography is steep, which diminishes subdivision potential.

Remarks:

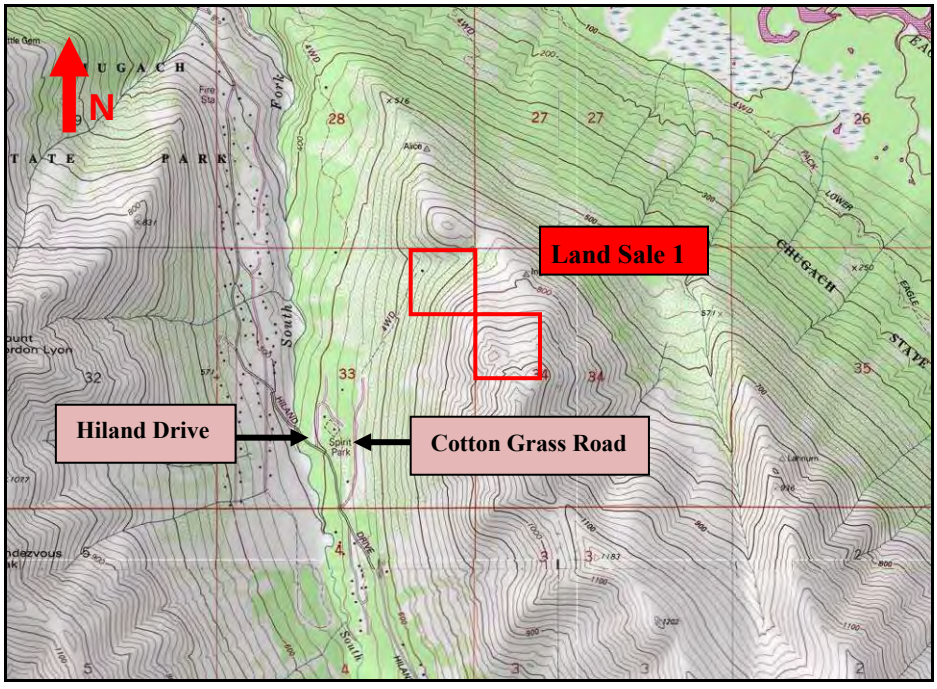
The buyer owned a contiguous property and desired to protect their privacy. The Broker stated the buyer negotiated the purchase prior to the listing reaching the MLS database.

Analysis **$177,200** ÷ **80.00± Acres** = **$2,215/Acre**

Comparable Land Sale 1



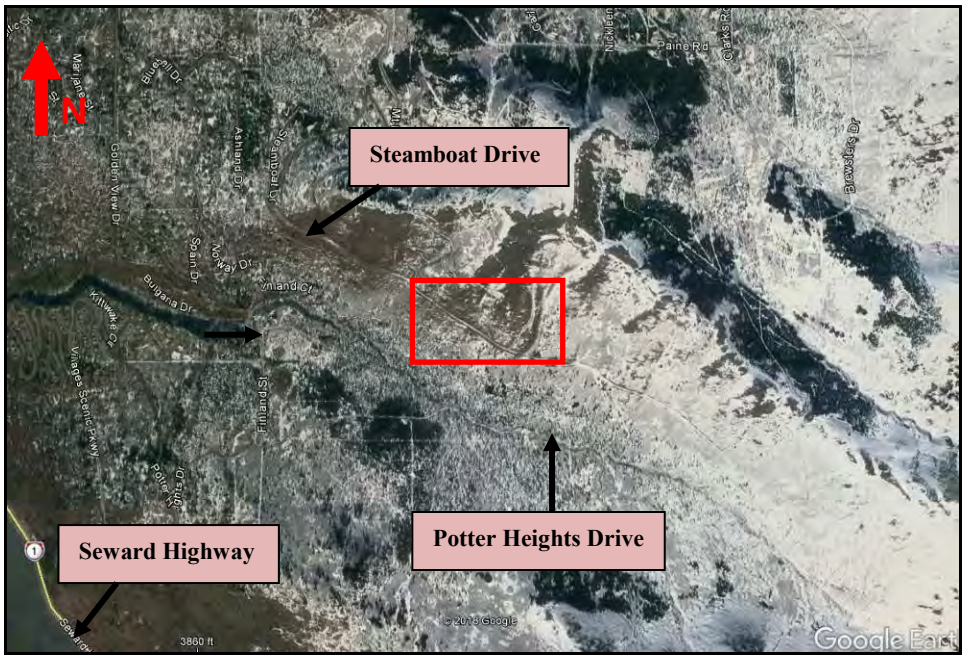
Portion of MTP T 14N, R 1W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 3



Location:	Dirt road extension of Steamboat Drive, north of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-221-02
Legal Description:	Tract 3, Potter Creek Subdivision, Plat No. 71-202

Grantor:	J&L Miller Alaska Community Property	**Instrument:**	Warranty Deed
Grantee:	Christopher Matthew & Kimberly Cavanaugh	**Document No:**	2014-031020
Sale Date:	6/17	**Data Source:**	Broker
Sale Price:	$350,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$350,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	80.00 Acres	**Public Utilities:**	Electricity
Zoning:	R-10	**Intended Use:**	Residential
Access:	Dirt trail extension of Steamboat Drive	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements; 60-foot bisecting road easement	**Inspected By:**	Steve MacSwain, MAI

Property Description:

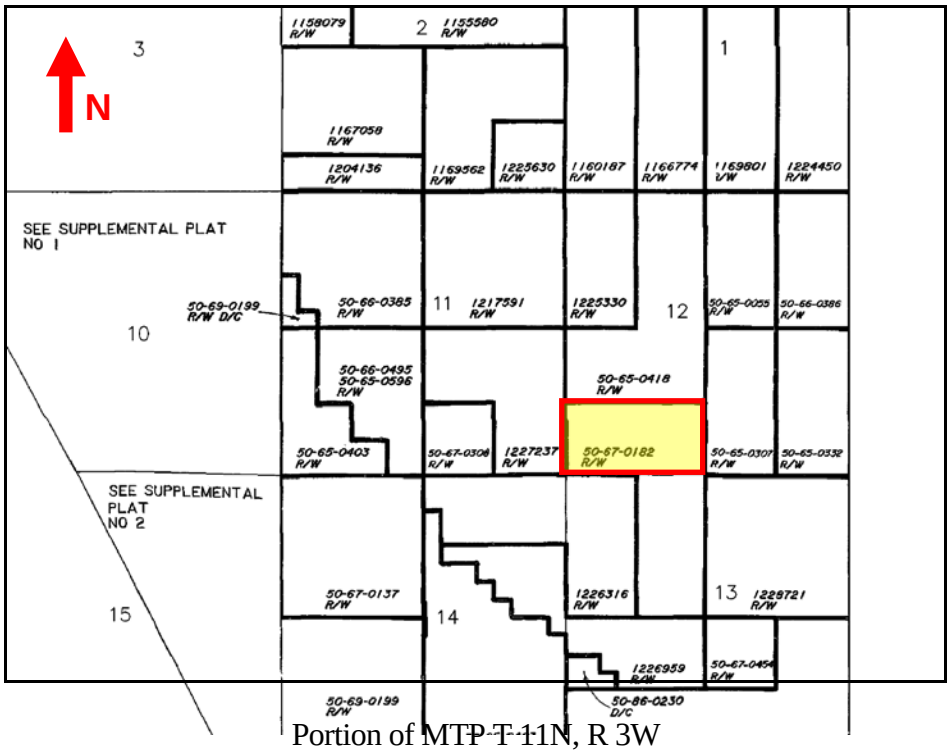
This 80-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on the southwest slope near Nystrom Peak, the parcel has a moderate to steep slope. Access is via a well-travelled, dirt roadway extension of Steamboat Drive that pass through the parcel and continues to several other properties. Electricity is at the site.

Remarks:

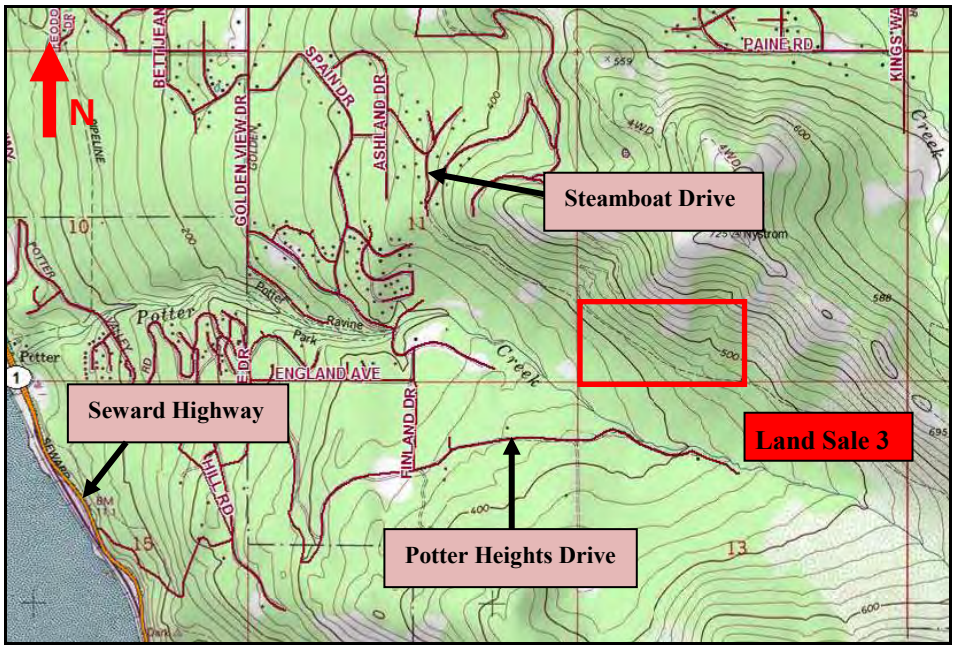
The parcel was originally listed at $400,000, before lowering to $370,000 and securing an offer after 16.5 months of exposure.

Analysis **$350,000** ÷ **80.00 Acres** = **$4,375/Acre**

Comparable Land Sale 3



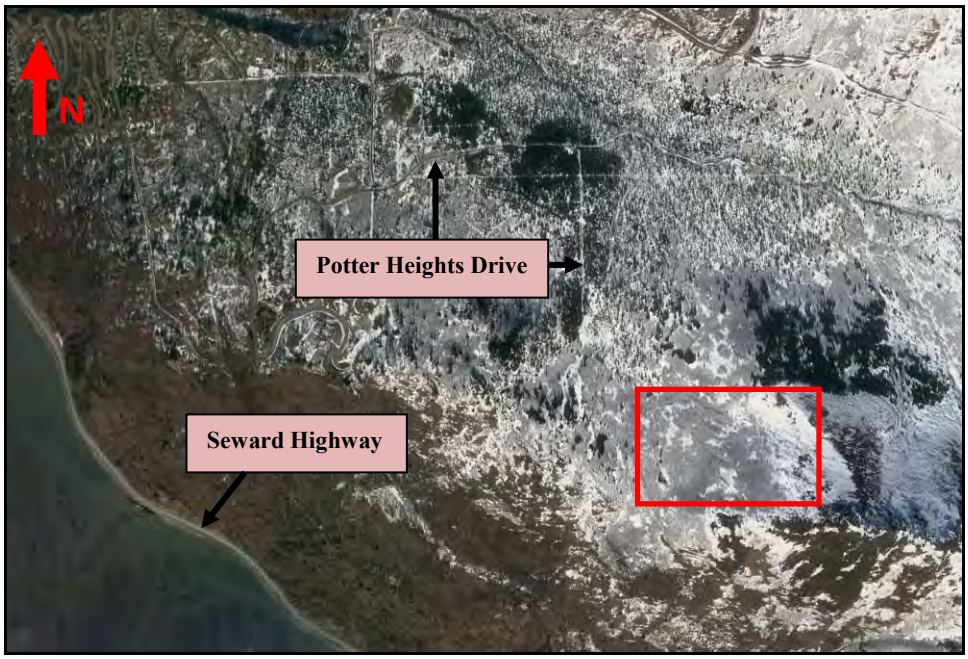
Portion of MTP T 11N, R 3W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 7



Location:	End of dirt road from Miller Drive, South of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-321-25
Legal Description:	Tract 2, McHugh Subdivision, Plat 88-10, Anchorage Recording District

Grantor:	Chrisopher R. Miller (Trustee for Estate of Helena Marie Miller)	**Instrument:**	Warranty Deed
Grantee:	Eric and Christy Gieser	**Document No:**	2015-053500-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$130,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$130,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	62.50 Acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential/access
Access:	Dirt road though access easement and section line easement	**Highest & Best Use:**	Residential
Easements/Restrictions:	50-foot section line easement along south boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

This 62.50-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on slope near Hugh Peak, the parcel has a moderate to steep slope with northwesterly view of Anchorage and Turnagain Arm. Access is via a dirt road, and an undeveloped section line easement. Public electricity is are about 1,500 feet to the northwest.

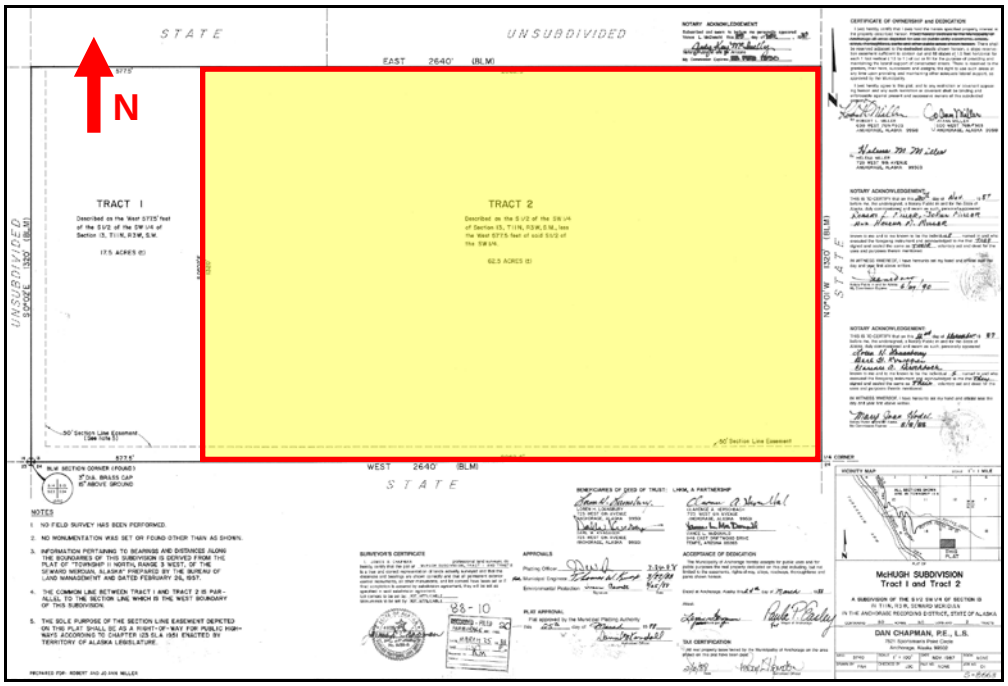
Remarks:

The Broker stated the parcel pended after a marketing time of 4 days with a full price offer from an adjacent property owner. The buyer purchased the parcel for access to their existing property.

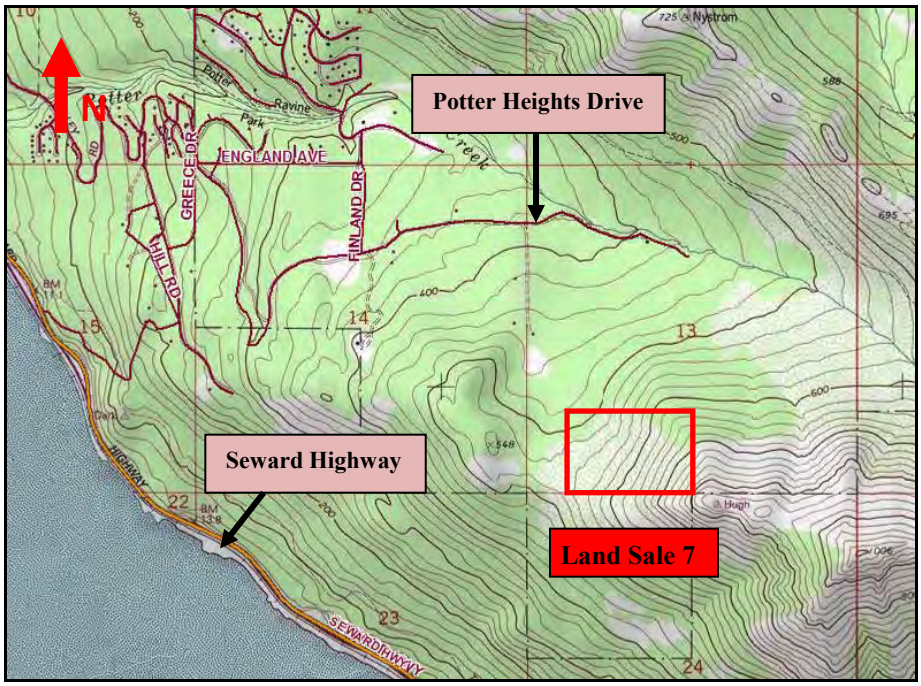
MacSwain Associates LLC

Analysis	$130,000	÷	62.50 Acres	= $2,080/Acre

Comparable Land Sale 7



Plat No. 82-59



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 8



Location:	Bisected by Brewsters Drive, off Kings Way, Bear Valley neighborhood, Anchorage, Alaska		
Assessor Number:	020-151-03		
Legal Description:	N1/2NE1/4NW1/4, Section 7, T 11N, R 2W, SM, Anchorage Recording District		
Grantor:	James Rowe	**Instrument:**	Warranty Deed
Grantee:	Shawn P. and Joell F. McAlpin	**Document No:**	2015-046895-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$149,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$149,000	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $25,000 down payment, $124,000 Deed of Trust at undisclosed terms		
Land Area:	20.00 Acres	**Public Utilities:**	Electricity at northern boundary
Zoning:	R-10	**Intended Use:**	Residential
Access:	Gravel roadbed	**Highest & Best Use:**	Residential
Easements/Restrictions:	Bisecting roadway; 50-foot section line easement along southern boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

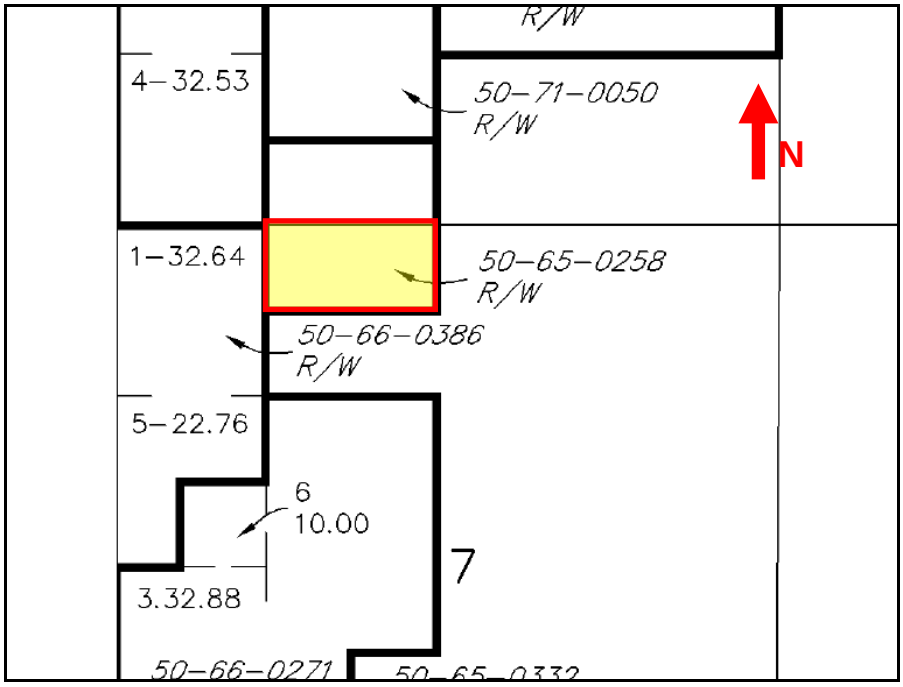
This 20.00-acre parcel is located in on either side of Brewsters Drive, in the Bear Valley neighborhood, about 9.5± miles from Midtown Anchorage. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage.

Remarks:

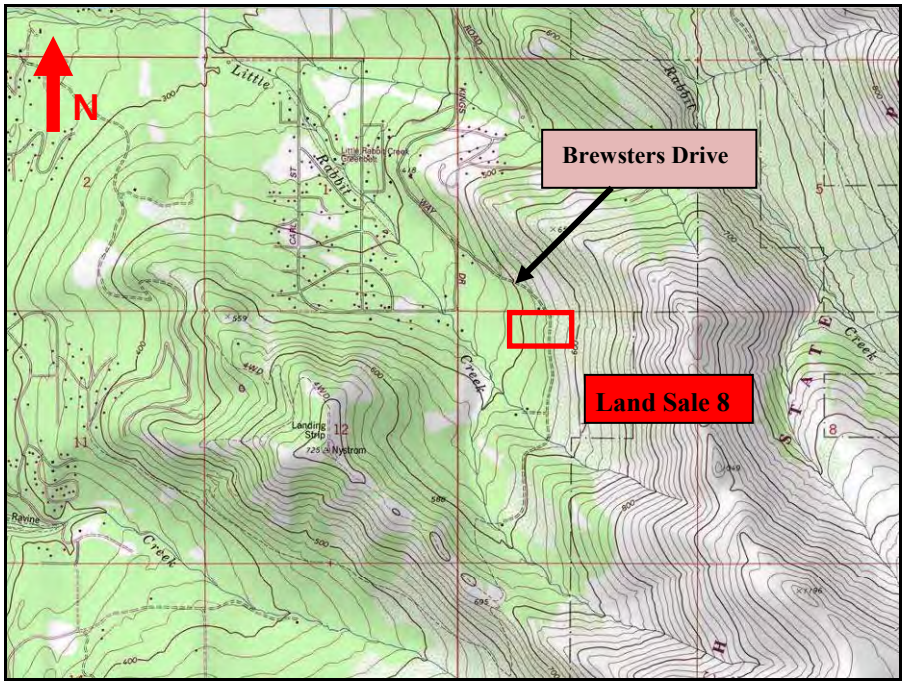
The parcel was listed off and on for several years, lastly listed in February 2014 for $169,900, before lowering to $149,000 securing an offer a few months later. The Broker stated that owner financing with $25,000 down did not affect the sale price.

Analysis **$149,000** ÷ **20.00 Acres** = **$7,450/Acre**

Comparable Land Sale 8



Portion of MTP T 11N, R 2W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 10



Location:	North side of Seward Highway near Milepost 100.4, Bird Creek, Alaska
Assessor Number:	090-022-06
Legal Description:	Parcel 1: Lot 22, US Survey No. 3202, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska. Parcel 2: Lot 14, US Survey No. 3680, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Elizabeth A. Davidson	**Instrument:**	Statutory Warranty Deed
Grantee:	Terra B. Nelson	**Document No:**	2013-067978-0
Sale Date:	12/13	**Data Source:**	Broker
Sale Price:	$105,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$105,000	**Property Rights:**	Fee simple interest
Terms:	Conventional financing		

Land Area:	2.50± acres	**Public Utilities:**	E & T; NG in proximity
Zoning:	R-11 (now TA)	**Intended Use:**	Residential
Access:	Seward Highway	**Highest & Best Use:**	Residential
Easements/Restrictions:	None noted	**Inspected By:**	Steve MacSwain, MAI

Property Description:

This 2.50-acre lot is located on the north side of Seward Highway, at the east end of Bird Creek. Location is 20.5± miles from Midtown Anchorage. A driveway leads to a clearing where a restaurant was once located, but burned down over 30 years ago. Topography is relatively steep at the south boundary, but levels our near the eastern portion. Despite the conveyance of a second lot containing 1.22 acres, it lies within a PLO and the State of Alaska has claimed jurisdiction.

Remarks:

The property was listed off and on for over five years originally for $135,000, before accepting an offer at $105,000. The seller bought the property in 2008 for $120,000, but based the purchase on potential entitlement to the 1.22 acres within the PLO.

Analysis **$105,000** ÷ **2.50± Acres** = **$42,000/Acre**

MacSwain Associates LLC

Comparable Land Sale 11



Location:	North side of Seward Highway near Milepost 100.4, Bird Creek, Alaska
Assessor Number:	090-022-06
Legal Description:	Parcel 1: Lot 22, US Survey No. 3202, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska. Parcel 2: Lot 14, US Survey No. 3680, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Jason E. Skala and Holly Skala-Lawson	**Instrument:**	Warranty Deed
Grantee:	Elizabeth A. Davidson	**Document No:**	2008-050298-0
Sale Date:	9/08	**Data Source:**	Broker
Sale Price:	$120,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$120,000	**Property Rights:**	Fee simple interest
Terms:	Conventional financing		

Land Area:	2.50± acres	**Public Utilities:**	E & T; NG in proximity
Zoning:	R-11 (now TA)	**Intended Use:**	Residential
Access:	Seward Highway	**Highest & Best Use:**	Residential
Easements/Restrictions:	None noted	**Inspected By:**	Steve MacSwain, MAI

Property Description:

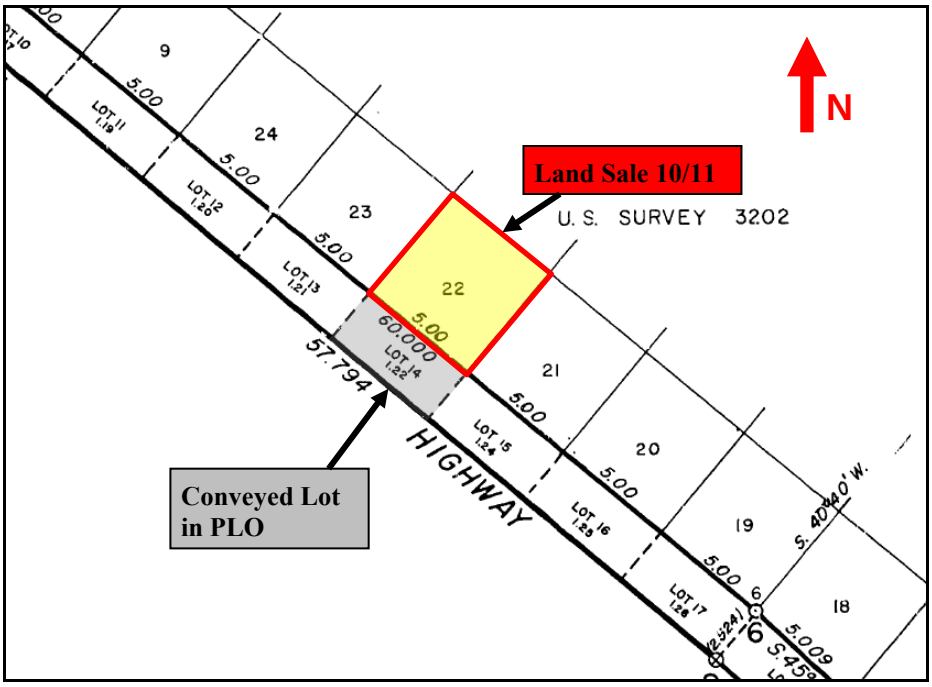
This 2.50-acre lot is located on the north side of Seward Highway, at the east end of Bird Creek. Location is 20.5± miles from Midtown Anchorage. A driveway leads to a clearing where a restaurant was once located, but burned down over 30 years ago. Topography is relatively steep at the south boundary, but levels our near the eastern portion. Despite the conveyance of a second lot containing 1.22 acres, it lies within a PLO and the State of Alaska has claimed jurisdiction.

Remarks:

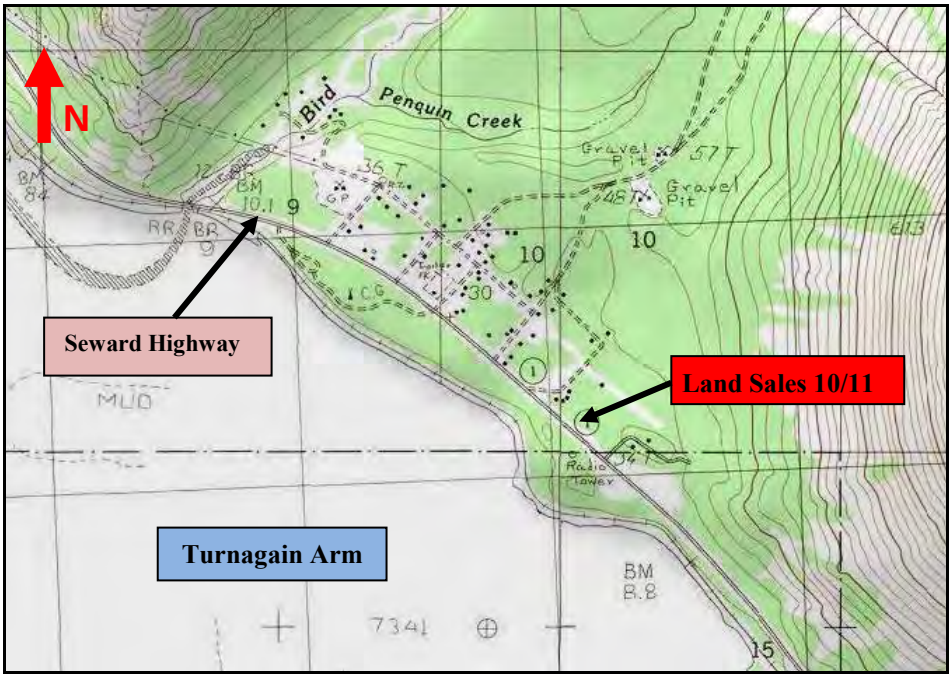
The property was listed for just over four months at a price of $129,000, before accepting an offer at $120,000. The buyer based the purchase on potential entitlement to the 1.22 acres within the PLO, but State of Alaska claimed jurisdiction. The buyer listed the property in April 2009 for $129,900, and sold it in December 2013 for $105,000.

Analysis	**$120,000**	**÷**	**2.50± Acres**	**= $48,000/Acre**

Comparable Land Sale 10 & 11



Portion of US Survey 3680



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 14



Location:	West side of Ledyard Circle, north of Seward Highway near Milepost 103, Indian, Alaska
Assessor Number:	090-042-34
Legal Description:	Lot 34, Chugach Park View Subdivision, according to the official plat thereof, filed under Plat Number 2005-202, in the records of the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Drum-Wuitshik, LLC	**Instrument:**	Warranty Deed
Grantee:	Daniel and Meredith Gutierrez	**Document No:**	2017-022189-0
Sale Date:	3/17	**Data Source:**	Broker
Sale Price:	$115,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$115,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	3.28± acres	**Public Utilities:**	E, T, NG
Zoning:	TA	**Intended Use:**	Residential
Access:	Ledyard Circle	**Highest & Best Use:**	Residential
Easements/Restrictions:	Bisecting creek with setbacks; wetlands; CCRs; perimeter utility easements	**Inspected By:**	Steve MacSwain, MAI

Property Description:

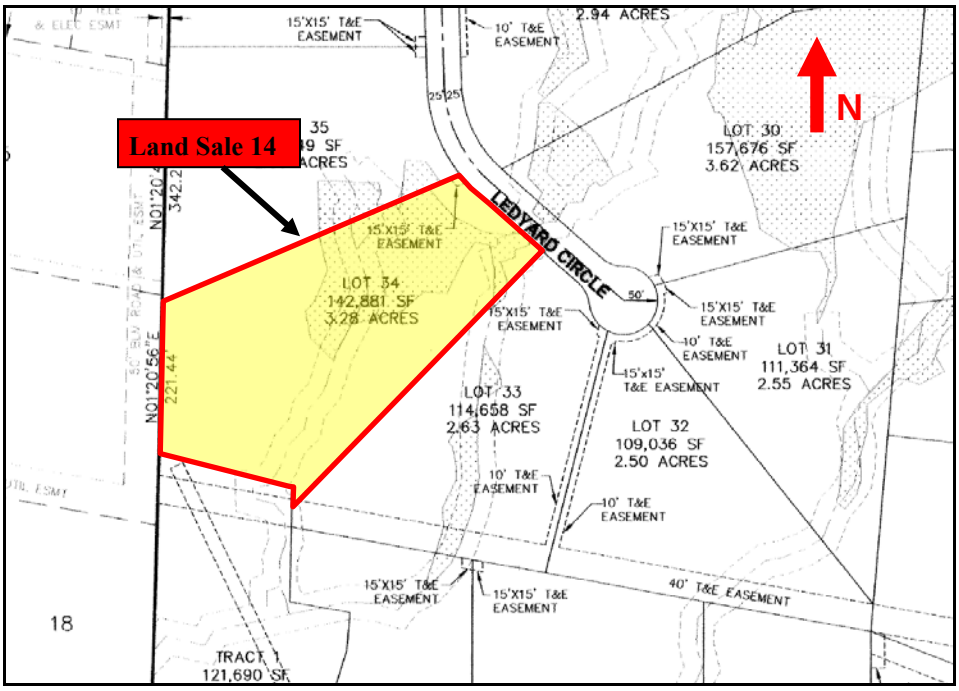
This 3.28-acre lot is located in a relatively new subdivision in Indian. Location is 17.5± miles from Midtown Anchorage. Ledyard Circle provides access, and there is electricity, telephone, and natural gas at the site. Topography is moderately sloping and provides some mountain views. A small creek bisects the parcel, and creates a designated wetlands area restricting development potential and increasing development costs. Subdivision CCRs restrict use to single-family residential.

Remarks:

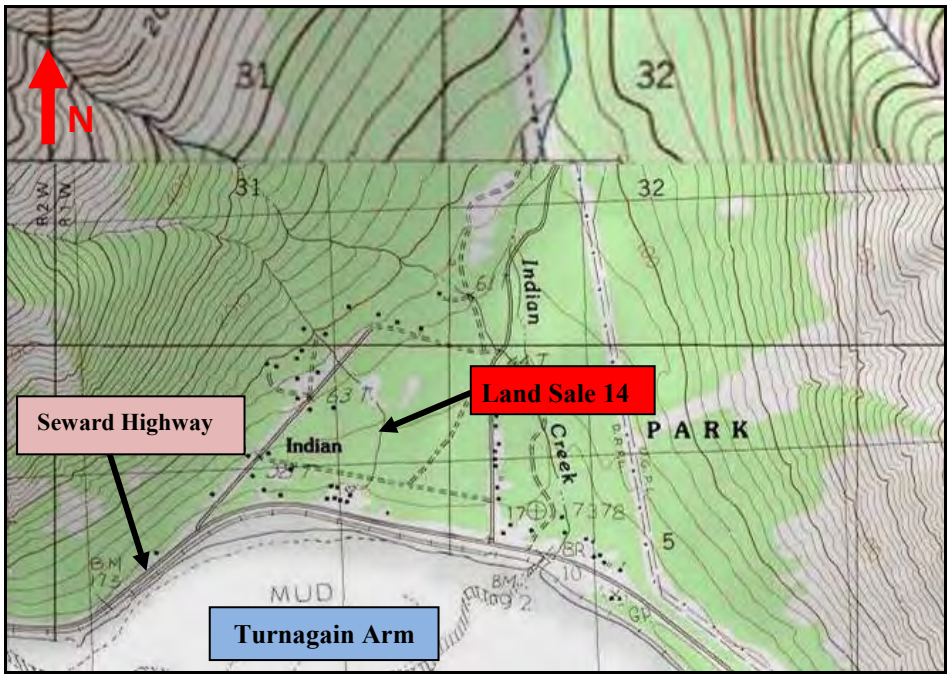
The property was listed for about two years at a price of $130,000, before accepting an offer of $115,000.

Analysis **$115,000** ÷ **3.28± Acres** = **$35,061/Acre**

Comparable Land Sale 14



Portion of Plat No. 2005-202



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 15



Location:	End of Reindeer Circle, and north side of Seward Highway near Milepost 103, Indian, Alaska
Assessor Number:	090-042-17
Legal Description:	Lot 17, Chugach Park View Subdivision, according to the official plat thereof, filed under Plat Number 2005-202, in the records of the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Ledyard Group, LLC	**Instrument:**	Warranty Deed
Grantee:	Mak Enterprises, LLC	**Document No:**	2015-036002-0
Sale Date:	7/15	**Data Source:**	Broker
Sale Price:	$215,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$215,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	3.23± acres	**Public Utilities:**	E, T, NG
Zoning:	TA	**Intended Use:**	Residential
Access:	Reindeer Circle	**Highest & Best Use:**	Residential
Easements/Restrictions:	Driveway easement; perimeter utility easements	**Inspected By:**	Steve MacSwain, MAI

Property Description:

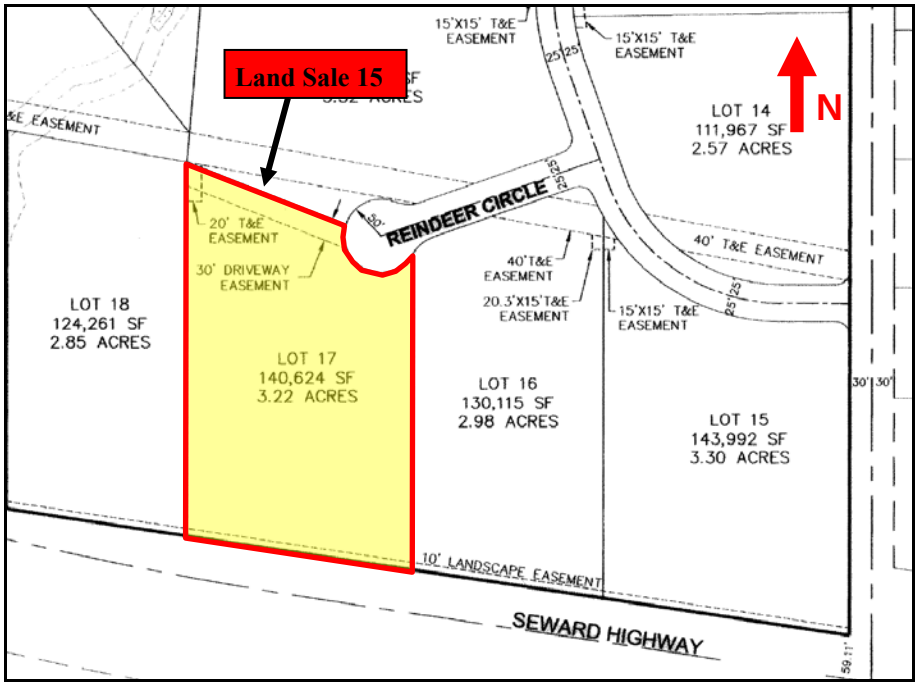
This 3.23-acre lot is located in a relatively new subdivision in Indian. Location is 17.5± miles from Midtown Anchorage. Access is via paved Reindeer Circle; the plat prohibits direct access to/from Seward Highway. There is electricity, telephone, and natural gas at the site. Topography is moderately sloping and provides some mountain views. This lot is not restricted by subdivision CCRs.

Remarks:

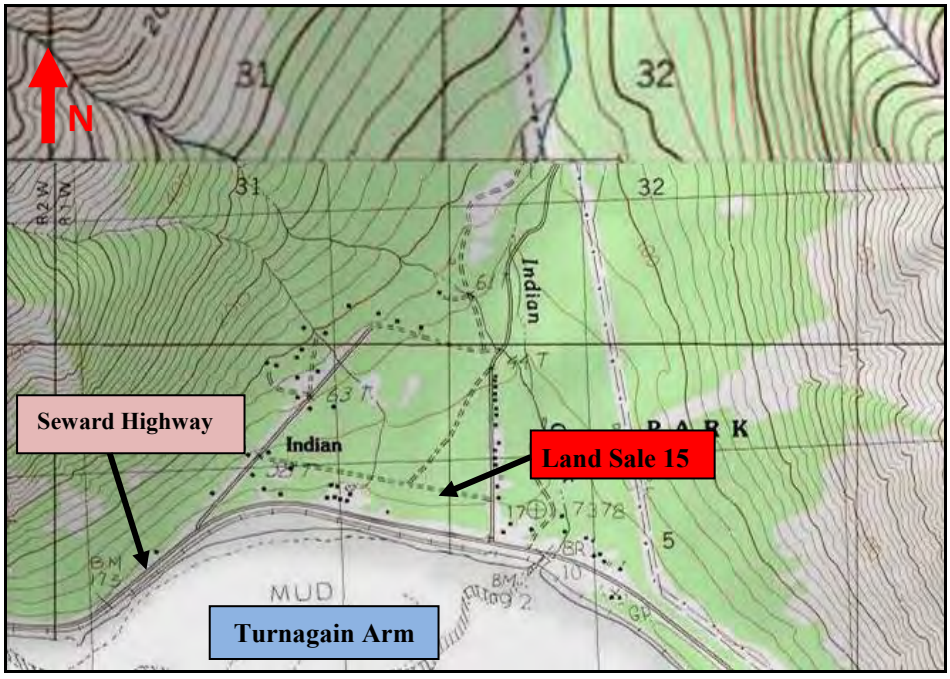
The property was listed for about five months at a price of $225,000, before accepting an offer at $215,000. Although commercial use is allowable, lack of highway access diminishes commercial appeal.

Analysis **$215,000** ÷ **3.23± Acres** = **$66,563/Acre**

Comparable Land Sale 15



Portion of Plat No. 2005-202



National Geographic TOPO Map

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

Appraiser: Steve MacSwain, MAI

Member of Appraisal Institute - No. 5700

State of Alaska, Certified General Real Estate Appraiser - No. 42

Professional Experience: 1986 to Present - MacSwain Associates LLC

1976 to 1986 - Appraisal Company of Alaska - President

1970 to 1975 - Real Estate Services Corporation – Appraiser

1969 to 1970 - State of Alaska Department of Highways - Right of Way Agent

Real estate appraiser and consultant of all property types throughout Alaska including commercial, industrial, subdivisions and special-purpose properties. Appraisals have been performed for financing, leasing, insurance, condemnation, taxation, property damages, investment analysis, and buy-sell decisions. Appraisals include valuation of both real property and business enterprises. Professional experience totals 49 years. Life-long Alaskan resident of Alaskan Native descent.

Education: Bachelor of Business Administration, Finance (1969), University of Alaska Fairbanks

Appraisal Education: The following is a list of completed appraisal courses and seminars.

2018 – Uniform Standards of Professional Appraisal Practice – Update by the Appraisal Institute

2017 – Appraising Environmentally Contaminated Properties by the Appraisal Institute

2017 – Residential & Commercial Valuation of Solar by the Appraisal Institute

2017 – Right of Way Acquisition for Pipeline Projects by the International Right of Way Association

2015 – Litigation Appraising: Specialized Topics and Applications by the Appraisal Institute

2015 – Business Practices and Ethics by the Appraisal Institute

2013 – Complex Litigation Appraisal Case Studies by the Appraisal Institute

2013 – Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book) by the Appraisal Institute

2012 – Appraisal Curriculum Overview by the Appraisal Institute

2010 – Reviewing Appraisals in Eminent Domain by the International Right of Way Association

2010 – Commercial Appraisal Engagement and Review Seminar for Bankers and Appraisers by the Appraisal Institute

2009 – The Appraiser as an Expert Witness: Preparation and Testimony by the Appraisal Institute

2009 – Attacking and Defending an Appraisal in Litigation by Whitmer Education

2008 – Uniform Standards of Professional Appraisal Practice by the Appraisal Institute

2007 – Business Practices and Ethics by the Appraisal Institute

2007 – Eminent Domain Law for Right of Way Professionals by the International Right of Way Association

2007 – Appraisal Review for Federal Aid Programs by the International Right of Way Association

2007 – Analyzing Operating Expenses by the Appraisal Institute

2007 – Forecasting Revenue by the Appraisal Institute

2007 – Case Studies in Highest and Best Use by the Appraisal Institute

1969-2006: Numerous appraisal classes pertaining to principles, income capitalization, cost analysis, sale comparison approach, and highest and best use analysis by the Appraisal Institute, Society of Real Estate Appraisers, International Right-of-Way Association, International Association of Assessing Officers, and Marshall Valuation Service

Membership and Organizations: Member of Appraisal Institute – No. 5700, International Right of Way Association (IRWA), and Building Owners and Managers Association (BOMA)

Public Service: Past Chairman of the State Board of Certified Appraisers

Past Member of Board of Equalization, Municipality of Anchorage, National Experience Review Committee of the Appraisal Institute, and Regional Ethics and Counseling Panel of the Appraisal Institute

Past President of Alaska Chapter 57 of the Appraisal Institute

Significant Assignments:

- Appraised Pacific Spaceport Complex-Alaska (PSCA) land and facilities for Alaska Aerospace Corporation on Kodiak Island..
- Appraised proposed LNG Pipeline, a FERC-regulated 860-mile pipeline transporting liquefied natural gas.
- Appraised the Trans-Alaska Pipeline System, a FERC-regulated 800- pipeline that transports crude oil from Prudhoe Bay to Valdez, for TAPS ownership.
- Appraised remote lands (65,000± acres) owned by three Native corporations damaged by the *Selendang Ayu* grounding and subsequent oil spill.
- Appraised Calais Company, Inc., a real estate holding company consisting of 39 commercial parcels in Anchorage.
- Principal real estate consultant and expert witness for all lands affected by the *Exxon Valdez* oil spill. Project involved over 2,000,000 acres of remote land and nearly 2,000 private property owners.
- Appointed as a representative of a three-member panel that analyzed and valued over 1,000,000 acres and 8,000 parcels for the Mental Health Lands Settlement.
- Contract assessor for the North Slope Borough, Kodiak Island Borough, City of Nome, and the City of Valdez.
- Represented Seibu Alaska, Inc. (Alyeska Resort and Alyeska Prince Hotel) in preparing of their property tax appeal with the Municipality of Anchorage that resulted in a $65 million reduction in assessed value.
- Appraised submerged tideland parcels and wetlands parcels located in Womens Bay on Kodiak Island for the purpose of an exchange between Koniag, Inc. and U.S. Fish and Wildlife Service.
- Appraised Common Carrier Pipeline right-of-ways leased and operated by BP Transportation Alaska and ConocoPhillips Alaska.
- Appraised 3,600 acres consisting of the former Adak Naval Air Station and Submarine Base conveyed to the City of Adak and the State of Alaska.

Expert Witness Experience: Steve MacSwain, MAI is qualified as an expert witness in both the United States Federal Court and the State of Alaska Superior Court. Steve has testified as an expert witness in State and Federal courts. In addition, Steve has testified as expert witness in numerous Alaskan municipal tax courts, public hearings, and depositions on matters related to real property.

Arbitrator Experience: Appointed a Master by the Superior Court of Alaska and Municipality of Anchorage to serve as an arbitrator in determining just compensation.



License #: APRG42
Effective: 05/16/2017
Expires: 06/30/2019

STATE OF ALASKA
Department of Commerce, Community, and Economic Development
Division of Corporations, Business, and Professional Licensing
Real Estate Appraisers

Licensee: **STEVEN JAMES MACSWAIN**
License Type: **Certified General Real Estate Appraiser**
Status: **Active**

Commissioner: Chris Hladick

REVIEW APPRAISER'S DETERMINATION OF APPRAISAL COMPLIANCE WITH UASFLA & USPAP By	**PROJECT NAME**: WINDY CORNER SEWARD HWY. MILEPOST 105-107 **DOT & PF PROJECT NO. 0A3-1(34)/56631**
Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	**PARCEL NO. "ACQUISITION PARCEL" (STATE OF ALASKA)** KVC FILE NO. 18-101A

Property Owner: State of Alaska (Note: Although portions of the appraised property are under the ownership of various agencies of the State of Alaska, the appraiser was instructed by his client to appraise the property as if it were owned in its entirety by a single entity, *i.e.*, the State of Alaska).

Appraised Property: The fee-simple interest in 87.63 acres of ***hypothetically*** vacant land located along the Seward Highway/Alaska Railroad corridor between the communities of Rainbow and Indian, Alaska. The real estate is roughly, legally described as being situated in Sections 2 and 3, Township 10 North, Range 2 West, Seward Meridian, Alaska. (**Note: The appraiser was instructed to exclude from valuation all roadway, roadside and railroad improvements, *i.e.*, the land was to be appraised as if it were vacant and unimproved**).

I, Franklin M. King, MAI, have completed a technical review of the August 10, 2018 appraisal report on the above-referenced property which was prepared, signed and certified by Steve MacSwain, MAI. My review was completed without a field inspection of the subject property or the comparable sale properties, *i.e.*, a "desk" review was performed. The scope of my review included: 1) a check for proper appraisal methodology, analytical consistency, internal logic, and accuracy of mathematical calculations; 2) a check for compliance with the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP); and 3) a determination as to whether the appraisal constitutes an adequate basis for an offer of just compensation. I did not independently confirm the market data or subject property data presented in the appraisal report.

My five-page appraisal review report herein is intended for use only by my client, DOWL, Inc., as well as the State of Alaska and the National Park Service.

Mr. MacSwain determined that the highest and best use of the appraised property (the "larger parcel") was for continued use as a portion of a transportation/distribution corridor connecting Anchorage and the Kenai Peninsula and serving intermediate points along the way. Accordingly, he utilized the across-the-fence (ATF) method to value three distinctly different types of land within the corridor segment by analyzing and adjusting comparable land sales. By applying a market-derived corridor factor to the ATF value, the appraiser finalized his opinion of market value for the larger parcel, the remainder property and the acquisition area. The results of his appraisal were communicated in an "Appraisal Report" as defined in the 2018-2019 edition of USPAP.

The fee simple interest in a 26.30-acre portion of the larger parcel is to be acquired as part of the above-captioned road project. The appraiser's opinion of the **market value** of the **proposed acquisition,** as of **August 8, 2018** was **$35,700.00 (Thirty Five Thousand Seven Hundred Dollars)**.

The appraisal report contained a few minor errors and inconsistencies—none of which had any impact on the value conclusions. Mr. MacSwain made the necessary corrections and submitted a final draft of the report to me for review. He assured me that he will also promptly submit same to DOWL, Inc.

Review Appraiser's Determination:

- ***In my opinion, the content, analyses, and conclusions in the appraisal report are in compliance with the current editions of* UASFLA *and* USPAP.**
- ***The market value opinions were based on an adequate quantity of relevant data and proper adjustments to the data were made where appropriate.***
- ***The appraisal methods and techniques used were appropriate for the valuation problem.***
- ***The $35,700 market value opinion for the property rights to be acquired is appropriate and reasonable, given the data and analyses presented, and I recommend approval of the appraisal as an adequate basis for an offer of just compensation.***

JUST COMPENSATION ALLOCATION:

Land:	$35,700
Section Line/PLO Interests:	$ N/A
Improvements	$ N/A
Cost-to-Cure:	$ N/A
Damages:	$ N/A
Special Benefits:	$ N/A
TOTAL:	**$35,700**

Uneconomic Remnant? ☐ Yes ☑ No If yes, enter value: $ N/A and describe:

Reviewer Assumptions & Limiting Conditions:

- This appraisal review is based solely on data and information contained in the appraisal report that is the subject of this review.
- It is assumed that the data and information are factual and accurate,
- I reserve the right to consider any additional data or information that may subsequently become available and to revise the opinions and conclusions in this report if such data and information indicate the need for such a change.
- All of the assumptions and limiting conditions contained in the appraisal report that is the subject of this review are also conditions of this review unless otherwise stated.

Review Appraiser Certification:

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this appraisal review report are true and correct.
- The reported analyses, opinions, and conclusions in this review report are limited only by the assumptions and limiting conditions stated in this review report, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- I have no present or prospective interest in the property that is the subject of the work under review and no personal interest with respect to the parties involved.

- In May of 2017, I reviewed an appraisal report on this same property, which was also prepared by Steve MacSwain, MAI, and dated April 26, 2017. I have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of the work under review within the three-year period immediately preceding acceptance of this current assignment.

- I have no bias with respect to the property that is the subject of the work under review or to the parties involved with this assignment.

- My engagement in this assignment was not contingent upon developing or reporting predetermined results.

- My compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in this review or from its use.

- My compensation for completing this assignment is not contingent upon the development or reporting of predetermined assignment results or assignment results that favor the cause of the client, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal review.

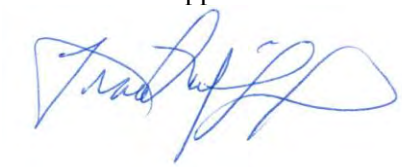
- My analyses, opinions, and conclusions were developed and this review report was prepared in conformity with the requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* as well as the Appraisal Institute's Code of Professional Ethics & Standards of Professional Appraisal Practice, which include the *Uniform Standards of Professional Appraisal Practice*.

- The use of this review report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

- I have not made a personal inspection of the subject of the work under review.

- No one provided significant appraisal, appraisal review, or appraisal consulting assistance to me during the review process.

- As of the date of this report, I have not completed the continuing education program of the Appraisal Institute. I have, however, completed the State of Alaska's continuing education requirements for real estate appraisers.



Franklin M. King, MAI
Review Appraiser

Alaska General Real Estate Appraiser
Certificate #APRG 18 — Expires 6/30/19

Date of Appraisal Review: August 21, 2018

APPRAISAL REPORT CHECKLIST By Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	**PROJECT NAME**: WINDY CORNER, SEWARD HIGHWAY MILEPOST 105-107 **DOT & PF PROJECT NO. 0A3-1(34)/56631** **PARCEL NO. "ACQUISITION PARCEL" (STATE OF ALASKA)** KVC FILE NO. 18-101A

Appraiser: Steve MacSwain, MAI **Review Appraiser:** Franklin M. King, MAI

☑ Special Instructions: The appraiser was instructed by the client to base his value opinions on the hypothetical condition that the subject property was under the ownership of a single entity and that it consisted solely of vacant land.

Note: If item is not applicable, write "N/A" by the box for that item

☑ Current ROW Plans
☑ Appraisal matches plans
☑ Narrative Appraisal Summary Completed
☑ Certificate of Appraisal signed
☑ Scope of appraisal, Purpose and function
☑ Assumptions & Limiting Conditions
☑ Area & Neighborhood Analysis
☑ Land area and shape
☑ Access/Frontage
☑ Topography
☑ Soils
☑ Utilities
☑ Rights to be acquired
☐ Easements and encroachments shown
☑ Present use
☑ Zoning / Restrictions (Before & After)
☑ Known Hazards: Environmental, Flood
N/A Improvements described + sketch + shown on plat
N/A Specialty items or Tenant owned improvements
☑ Assessed Value/tax trends
☑ Plat/Plot Plan/Parcel Map
☑ Photos: land & improvements
☑ Ten-Year Sales History
☑ Highest and best use
☑ Approaches: Sales Comparison
☑ Support for Adjustments or Assumptions
☑ Value of the whole
☑ Conclusion and, if applicable, reconciliation
☑ Value of acquisition & allocation
☑ Remainder as a part of the whole
☑ Value reasonable and consistent
☐ Owner contact verification
N/A Title Report and Legal Description

Comparable Sales data should include:
☑ Comparable Sales map
☑ Size
☑ Shape
☑ Topography
☑ Utilities
☑ Soils
☑ Use / Zoning
☑ Access and Grade relationship
N/A Improvement allocation
☑ Photographs
☑ Verification by the appraiser

After Value: Has the appraiser considered
☑ Highest & Best Use change
☑ Access/Frontage issues
☑ Area/Shape
☑ Elevation or Drainage change
N/A Improvements
☑ Approaches: Sales Comparison
☑ Support for Adjustments
N/A Support for Damages/Special Benefits/Cost-to-cure

Issues: N/A

License #: APRG18
Effective: 06/06/2017
Expires: 06/30/2019

STATE OF ALASKA

Department of Commerce, Community, and Economic Development

Division of Corporations, Business, and Professional Licensing

Real Estate Appraisers

Licensee: **FRANKLIN M. KING**

License Type: **Certified General Real Estate Appraiser**

Status: **Active**

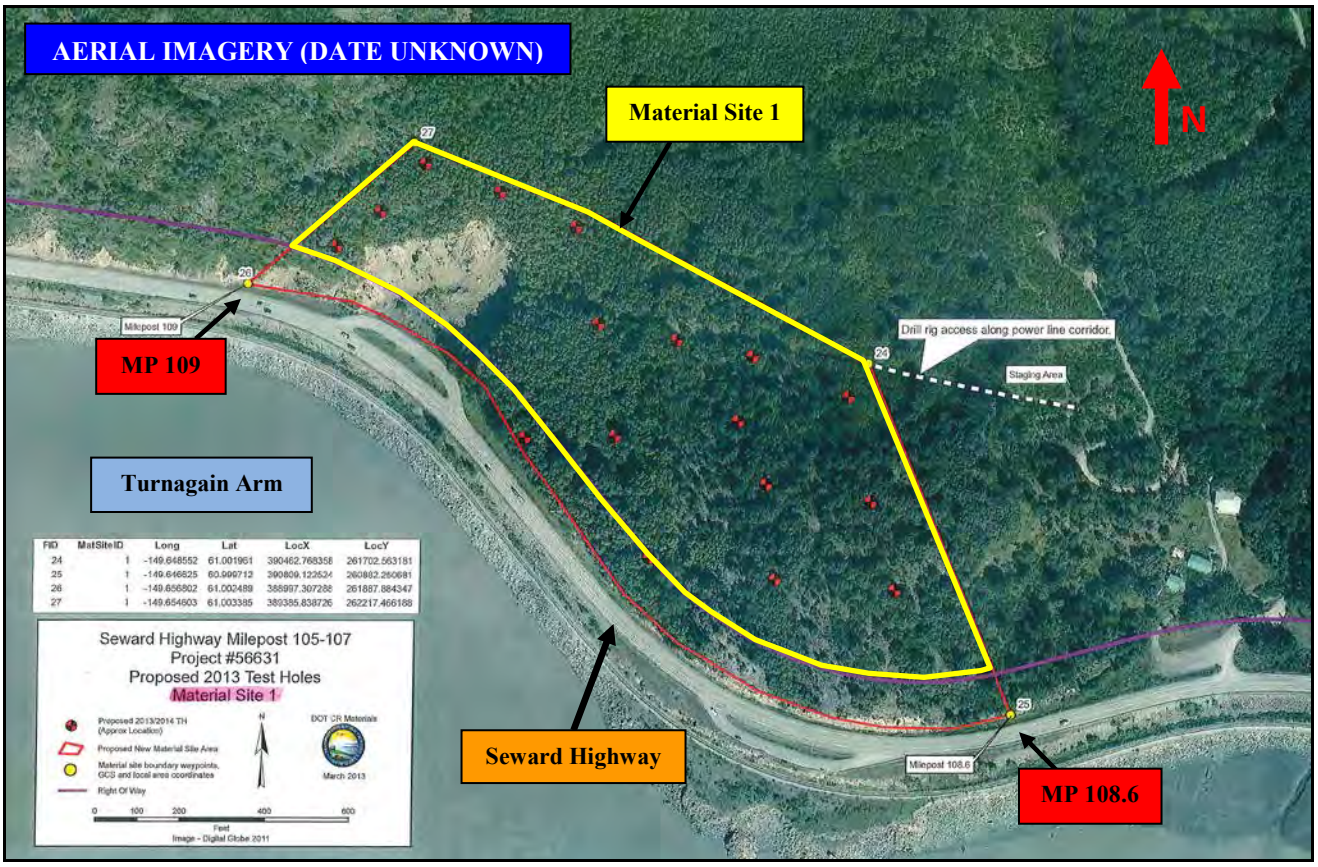
Commissioner: Chris Hladick

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

APPRAISAL REPORT

Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
"Material Site 1" – Milepost 108.6 to 109 Seward Highway, Alaska



Effective Appraisal Date: August 8, 2018 File No. 18-3182(1)

Submitted To:

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

MacSwain Associates LLC

4401 Business Park Blvd., Suite 22
Anchorage, Alaska 99503
Telephone: 907-561-1965
Facsimile: 907-561-1955
s.macswain @macswain.com

August 10, 2018

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

Re: Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
"Material Site 1" – Milepost 108.6 to 109 Seward Highway, Alaska

Dear Ms. Mueller:

We have prepared an *Appraisal Report* that analyzes the above-referenced property affected by the Windy Corner Seward Highway Project. The purpose of the appraisal is to estimate the market value of property rights acquired pertaining to the full acquisition of a 19.6-acre parcel, as of August 8, 2018 (effective date of value). The property rights appraised is the fee simple interest. To summarize, the appraised property is a 19.6-acre parcel consisting of steep sloping bedrock on the north side of the Seward Highway right of way, between Anchorage and Indian, Alaska, within the boundaries of Chugach State Park. Importantly, as instructed by DOWL, Inc., analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 1" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

We note that MacSwain Associates LLC appraised "Material Site 1" effective April 13, 2017, for the same client, intended use, and intended users. Our opinion of value of the property rights acquired was $53,000. Although we uncovered and analyzed new sale data during this new assignment, our analysis resulted in the same opinion of value.

The appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP). Since UASFLA states an estimate of market value tied to exposure and marketing time is inappropriate and requires exclusion from the appraisal report, we invoke the jurisdictional exception rule permitted in USPAP.[1] This departure represents the only conflict between UASFLA and USPAP.

[1] Standard Rule 1-2(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their market value opinion. Section D-1b of UASFLA provides legal authority for invoking the Jurisdictional Rule.

Based on the data, reasoning, and analysis contained in the appraisal report, it is our opinion the market value of the property rights acquired, as of August 8, 2018, is as follows.

Market Value of Acquisition	**$53,000**

We direct your attention to the Assumptions and Limiting Conditions on Page 6 for an explanation of the restrictions and limitations of the report. If you have questions regarding our analysis or conclusion, please contact our office.

Respectfully submitted,



Steve MacSwain, MAI
State of Alaska Certificate No. 42

Table of Contents

Title Page

Transmittal Letter **1**

Table of Contents **3**

Appraiser Certification **4**

Assumptions and Limiting Conditions **6**

Appraisal Summary **7**

Chapter 1: Premise of the Appraisal **8**

Chapter 2: Neighborhood Analysis **14**

Chapter 3: Property Description and Analysis **17**
Property Photographs **21**
Property Photograph Location Maps **24**

Chapter 4: Highest and Best Use Analysis **25**

Chapter 5: Property Valuation – Before Acquisition **28**

Chapter 6: Property Valuation – After Acquisition **39**

Chapter 7: Market Value of Acquisition **40**

Addendum
Comparable Land Sales
Appraiser Qualifications

Appraiser Certification

The undersigned certifies that to the best of their knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and legal instructions, and are the personal, unbiased professional analysis, opinions, and conclusions of the appraisers.
- The appraisers have no present or prospective interest in the property appraised and no personal interest or bias with respect to the parties involved.
- The compensation received by the appraisers for the appraisal is not contingent on the analyses, opinions, or conclusions reached or reported.
- The appraisal was made and the appraisal report prepared in conformity with the *Uniform Appraisal Standards For Federal Land Acquisitions* (UASFLA).
- The appraisal was made and the appraisal report prepared in conformity with Appraisal Foundation's *Uniform Standards of Professional Appraisal Practice* (USPAP), except to the extent that the *Appraisal Standards For Federal Land Acquisitions* (UASFLA) required invocation of USPAP's Jurisdictional Exception Rule, as described in Section D-1 of the *Appraisal Standards For Federal Land Acquisitions*.
- The appraisers have made a personal inspection of the property appraised. Property owner contact information was not provided to the appraisers.
- Jim Dahl provided significant professional assistance to the appraiser.
- The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of Professional Appraisal Practice of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- As of the date of this report, Steve MacSwain, MAI has completed the continuing education program of the Appraisal Institute.
- As of the date of this report, Steve MacSwain, MAI is a certified General Real Estate Appraiser in the State of Alaska, and has completed the education requirements through June 2019.

- MacSwain Associates LLC appraised the subject parcel effective April 13, 2017, for the same client, intended use, and intended users. We have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

- Our opinion of market value of the property rights acquired, as of August 8, 2018, is $53,000.



Steve MacSwain, MAI
State of Alaska Certificate No. 42

8/10/18
Date

Assumptions and Limiting Conditions

This appraisal report is subject to the following **Hypothetical Condition**. Use of this hypothetical condition might have affected the assignment results.

- We assume the parcel referred to as "Material Site 1" is a surveyed, platted, and legally marketable, stand-alone property.

This appraisal report is subject to the following Assumptions and Limiting Conditions.

- We assume no responsibility for the legal descriptions provided or for other matters pertaining to legal or title considerations. We assume title to the appraised property is marketable unless otherwise stated.
- We appraise the property free and clear of all liens or encumbrances unless otherwise stated.
- We believe the information furnished by others is reliable, but we do not guarantee its accuracy.
- We assume all engineering studies are correct. We believe all maps, surveys, and other illustrative material are accurate. We include these exhibits only to help the reader visualize the appraised property.
- We assume there are no hidden or unapparent conditions that render the property more or less valuable. We assume no responsibility for such conditions or for obtaining the engineering studies that may be required to discover them.
- We assume the appraised property is in full compliance with all applicable federal, state, and local environmental regulations and laws unless the lack of compliance is stated, described, and considered in the appraisal report.
- Possession of this report, or a copy thereof, does not carry with it the right of publication.
- The appraisers are not required to give consultation, testimony, or attend court proceedings with reference to the subject property without prior arrangements.
- The appraisers acknowledge the appraisal report may be available for public review upon request. However, this right does not allow dissemination to the public through advertising, public relations, news, sales, or other media without prior written consent and approval from the appraisers.
- We did not observe any hazardous material or other type of environmental contamination that may affect the appraised property. Furthermore, we do not have any knowledge that such substances exist. However, the presence of environmental conditions may impair property value. Therefore, we urge the client to retain an environmental assessment for discovery and evaluation.

Appraisal Summary

Property Type:	Vacant land
Purpose of Appraisal:	Provide market value opinion
Property Rights Appraised:	Fee simple interest
Legal Description:	Based on a review of the available information, the appraised acquisition is located within Section 33, Township 11 North, Range 2 West, Seward Meridian.
Property Owner:	State of Alaska Department of Natural Resources, Chugach State Park
Tax Parcel No:	N/A (exempt from taxation)
Location/Neighborhood:	Located on the north side of the Seward Highway right of way from about Milepost 108.6 to 109, near Rainbow, Alaska; within the boundaries of Chugach State Park
Land Area:	19.6± acres or 853,776± square feet
Access:	We presume legal access from Seward Highway on the south side of the parcel
Topography:	Steep ascending slope to the north; bluff profile along southeast portion of highway frontage; small area that has been excavated for prior gravel extraction
Utility Service:	Electricity and telephone
Easements and Restrictions:	None identified
Zoning:	Located outside any zoning authority
Improvement Description:	None
Highest and Best Use:	Recreation or residential home site
Environmental Condition:	No evidence of adverse environmental conditions observed
Property Inspection Date:	August 8, 2018
Effective Date of Appraisal:	August 8, 2018
Report Date:	August 10, 2018

Market Value of Acquisition: $53,000 ($2,704/Acre)

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 1" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

Chapter 1: Premise of the Appraisal

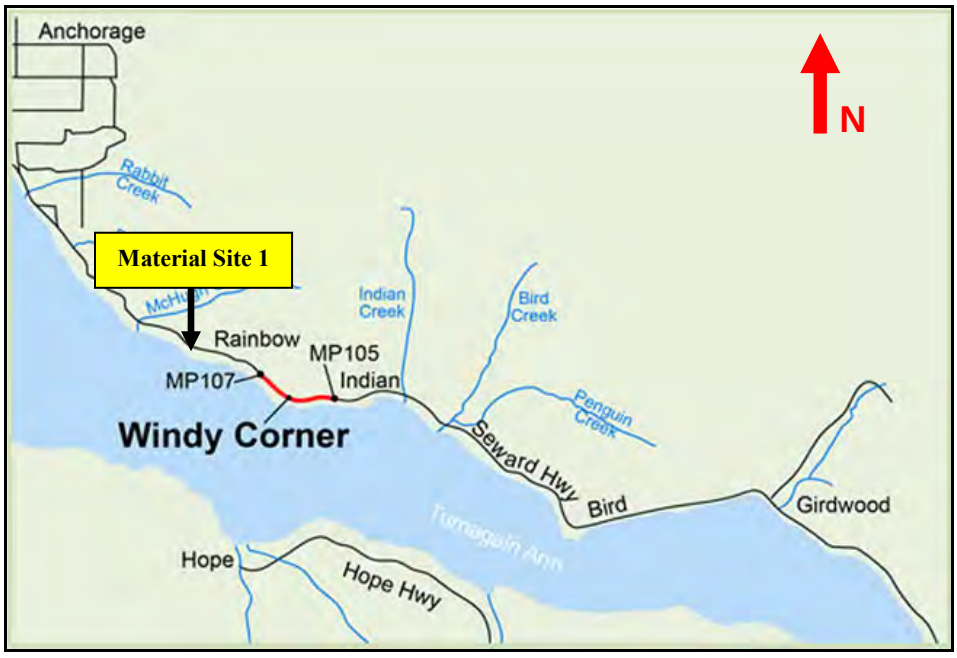
Overview

We have prepared an *Appraisal Report* that analyzes a 19.6-acre parcel that abuts the north side of the Seward Highway right of way, within the boundaries of Chugach State Park. Referred to as Material Site 1, the property is located between Milepost 108.6 and 109 of the Seward Highway, near Rainbow, Alaska. The proposed full acquisition is necessary in conjunction with construction of a road improvement project. This appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and *Uniform Standards of Professional Appraisal Practice* (USPAP).

Project and Acquisition Summary

Project Summary: The project intent is to address traffic safety concerns in the vicinity of Windy Corner by realigning the highway and the railroad to meet current design standards. The new alignment will also create space for new roadside recreational facilities and wildlife viewing areas (including parking and walkways) with acceleration and deceleration lanes for turning traffic.

Project Location Map



Specifically, the project, located within the Municipality of Anchorage between Indian and Rainbow, involves realigning and constructing a divided two-lane highway from Milepost 105 to 107, and relocating and realigning the Alaska Railroad Corporation (ARRC) tracks. The space created by the road and rail realignment will accommodate improved parking/pullout facilities on both sides of the highway with new auxiliary lanes to accommodate traffic entering and exiting the highway.

Acquisition Summary: The analysis and valuation reflects the full acquisition of vacant land.

Purpose of Appraisal	The purpose of the appraisal is to form a market value opinion for a potential voluntary acquisition adhering to UASFLA and USPAP.
Client	Our client is DOWL, Inc.
Intended Use of the Appraisal Report	The intended use of the report is to assist with compensating the property owner for the property rights acquired. The appraisal report is not intended for any other use.
Intended Users of the Appraisal Report	The intended users of the report are DOWL, Inc., the State of Alaska, and the National Park Service.
Date of Property Inspection	August 8, 2018
Effective Date of Appraisal	The effective date of appraisal is August 8, 2018, which represents the property inspection date.
Report Date	August 10, 2018

Definition of Market Value

The definition of market value is the basis of our analysis and valuation of the appraised land. *Market value* is defined as follows.

Market value is the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of value, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property.[3]

Property Rights Appraised

The property rights appraised is the *fee simple interest, which* is defined as follows.

Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.[4]

Property Owner

A title report was requested from the client, but not provided. Based on review of public records, the appraised property is owned by the State of Alaska Department of Natural Resources, Chugach State Park.

Legal Description

We requested a preliminary title report, but we did not receive this document. However, we did receive partial title abstracts from DOWL, Inc. staff that included court decisions, Patents, Recorder's Office document displays and case abstracts, and Master Title Plats pertaining to the appraised property. Although we rely the this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

Based on a review of the available information, the appraised acquisition is located within Section 33, Township 11 North, Range 2 West, Seward Meridian.

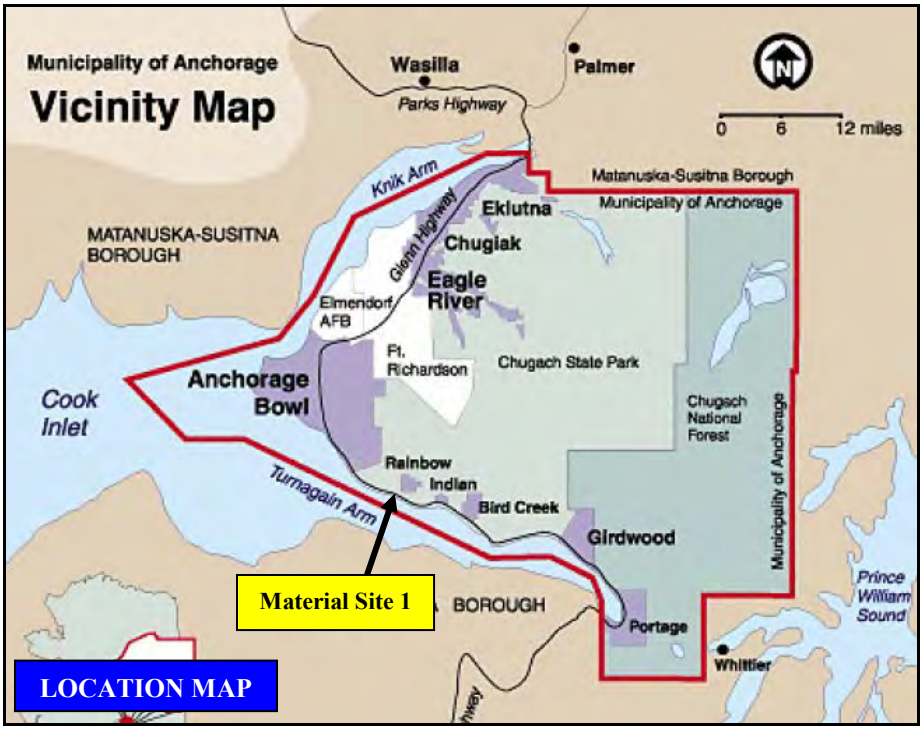
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[3] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 10.

[4] *Appraisal of Real Estate*, Fourteenth Edition (2013), by the Appraisal Institute, p. 5.

Identification of Real Estate Appraised

Property Type:	Vacant land
Neighborhood:	Turnagain Arm
Location:	Located on the north side of the Seward Highway right of way from about Milepost 108.6 to 109, near Rainbow, Alaska; within the boundaries of Chugach State Park



Property History

Property and Occupancy/Use History: The subject parcel is publicly owned land located within the boundaries of Chugach State Park. There were no signs of development on the property during the inspection, though it appeared that a portion of the parcel has been excavated several years ago.

10-Year Property Sale History: Review of public records indicates no property sales in the past 10-year period. Public records indicate State of Alaska acquired the subject lands in July 1974.

Rental History: There is no record of rental or lease history for the subject parcel.

Assessed Value and Real Estate Taxes

The appraised parcel is part of the Chugach State Park, and not subject to taxation.

Larger Parcel Determination

We determined that the larger parcel is the 19.6-acre acquisition parcel as described in this report. Explanation of this determination is located in the highest and best use analysis section of this report.

Hypothetical Condition

As instructed by DOWL, Inc., analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 1" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

Appraisal Methodology

Per UASFLA, we employ the before and after methodology to estimate the market value of the acquisition. First, we value the property before the acquisition; then we value the property that remains after the acquisition. The difference between the before and after values is the market value of the acquisition.

We utilize the sales comparison approach to estimate the market value of the property rights acquired, because neither the cost nor the income capitalization approaches provide meaningful analysis for vacant land similar to the subject. Additionally, we found sufficient land sale data to develop our opinion of value. Comparable land sale data was obtained from private parties, real estate Brokers/agents, market participants, appraisers, and company files.

Scope of the Appraisal

Jim Dahl preformed the most current inspection of the appraised property, and assisted Steve MacSwain, MAI with data collection and analysis. In addition, Steve MacSwain, MAI administered the appraisal process, reviewed draft appraisals, and concluded with an opinion of value. The scope of the appraisal is summarized as follows.

- Steve MacSwain and Jim Dahl inspected the subject property on August 8, 2018, and prior dates;
- Reviewed information provided by DOWL, Inc. including parcel and project mapping;
- Reviewed Municipality of Anchorage (MOA) mapping;

- Reviewed Municipal Code pertaining to zoning;
- Reviewed *Turnagain Arm Comprehensive Plan;*
- Observed the land use pattern of the Turnagain Arm market district;
- Collected and analyzed economic data pertaining to the Turnagain Arm market district;
- Interviewed Brokers that list Turnagain Arm district properties or specialize in marketing these properties;
- Reviewed USGS topographical maps and aerial mapping;
- Performed a land use analysis;
- Collected and analyzed comparable land sales;
- Confirmed land sales with the buyer, seller, Broker, or other knowledgeable third party; and
- Relied upon sales comparison approach to estimate market value.

Exposure Time

We invoke the Jurisdictional Exception Rule permitted in USPAP to comply with Section 9 of UASFLA that states an estimate of market value linked to an exposure or marketing time must be excluded from the appraisal report.[5]

Statement of Competency

MacSwain Associates LLC has completed numerous appraisals of vacant tracts of land throughout Alaska, including along the Seward Highway from Anchorage to Girdwood. Representative clients include lending institutions, government agencies, property owners, property managers, and private parties. A summary of Steve MacSwain, MAI's experience and professional qualifications are located in the addendum. Steve MacSwain, MAI has the knowledge and experience required by the competency provision of USPAP to complete this appraisal assignment credibly.

Summary of Appraisal Problem

There were no special appraisal problems encountered. Although sale activity is scarce, we analyzed sufficient data to develop a market-supported conclusion. However, the scarcity of sales requires use of qualitative adjustment techniques rather than paired analysis that measures differences by quantification. Despite these deficiencies, we performed a reliable analysis that concludes with a credible estimate of market value.

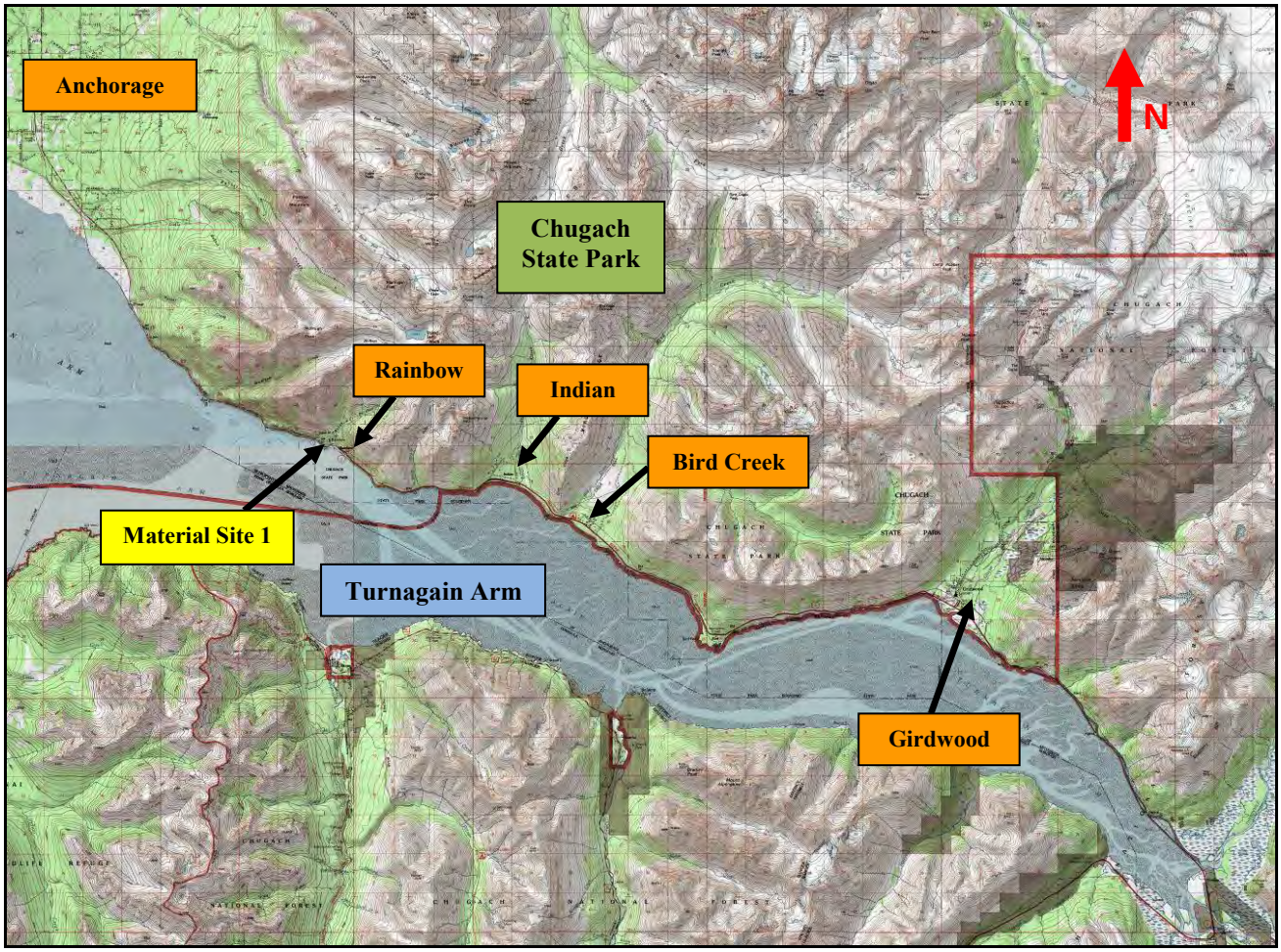
[5] Since Standard Rule 1-1(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their opinion of value, we invoke the Jurisdictional Exception Rule that permits departure.

Chapter 2: Neighborhood Analysis

Overview

The neighborhood is the Turnagain Arm District of the Municipality of Anchorage. The reader is referred to the maps below and on following pages that illustrate neighborhood boundaries.

Location Map

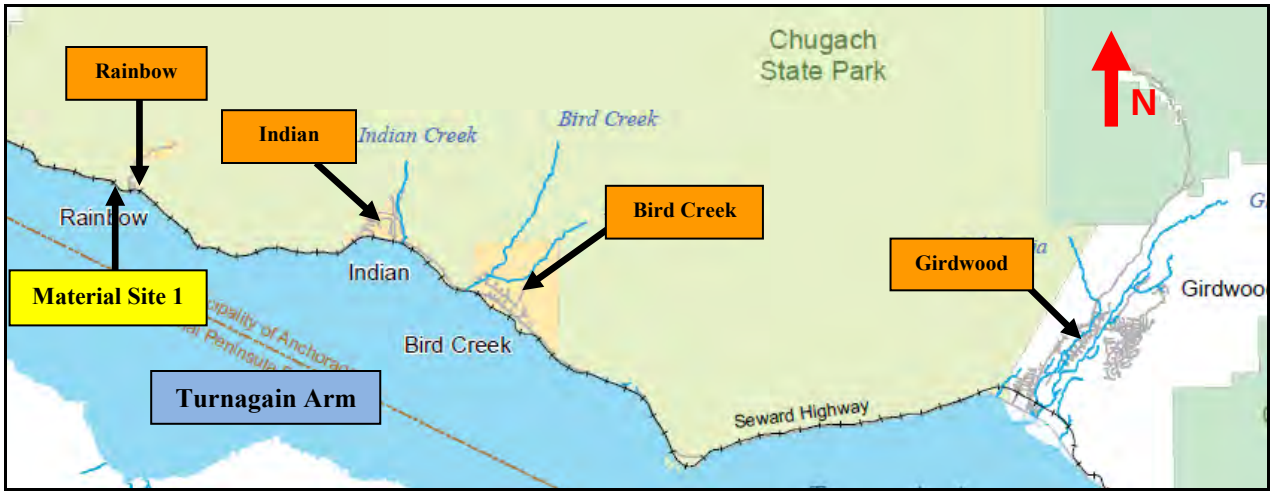


General Neighborhood

The general neighborhood is within the Turnagain Arm district and the area along the Seward Highway from Girdwood to Anchorage. The general neighborhood also includes the communities of Rainbow, Indian, and Bird Creek. According to the Municipality, the neighborhood has a population range from 350 to 375 residents. The predominate development pattern in the neighborhood is residential. Commercial development fronts the Seward Highway corridor and is located in Indian

and Bird Creek. Commercial development includes service and retail use such as restaurants, gas stations, automobile repair, and lodging.

Neighborhood Map



According to the Turnagain Arm Comprehensive Plan, Rainbow Valley developed under unusual circumstances with a group of landowners sharing plots of land for their individual homes, without actual platted lot boundaries. According to the homeowner's association, no vacant private land exists in the valley. All of the useable land is developed with rural residential homes and associated accessory use structures.

The Indian community includes a combination of large-lot rural residential developments with some scattered commercial uses along the Seward Highway and up-valley, including a small commercial nursery and Indian Valley meats, a large-scale meat processing facility. The east side of the valley includes a row of older homestead residences, some with renter cabins and two-family developments. Chugach Park View Subdivision in Indian is the most recent residential subdivision. The 35-lot subdivision is located between Indian Valley Road and Ocean View Road and offers large lots averaging 2.5± acres, paved streets, and partial Turnagain Arm and mountain views. The neighborhood offers various access points to Chugach State Park.

Bird Creek developed much like Indian, dominated by larger lot rural type residential development, with some scattered commercial uses along the highway and some small-scale commercial businesses within the residential area. A telecommunications facility is located along the highway and an automobile maintenance facility operates near the site's east end. A sawmill operates within the residential lots as a permitted use.

Chugach State Park contains approximately 495,000 acres of land and is one of the four largest state parks in the United States. The park's westernmost boundary lies in the western foothills of the Chugach Mountain Range and is a mere seven miles to the east of downtown Anchorage. The park is further defined by the Knik Arm on the north, Turnagain Arm on the south, and Upper and Lower Lake George and Chugach National Forest on the east.

Additional recreation opportunities in the neighborhood include State of Alaska campgrounds, seasonal salmon fishing at Bird Creek, and the "Bird to Girdwood" paved bike trail.

Summary

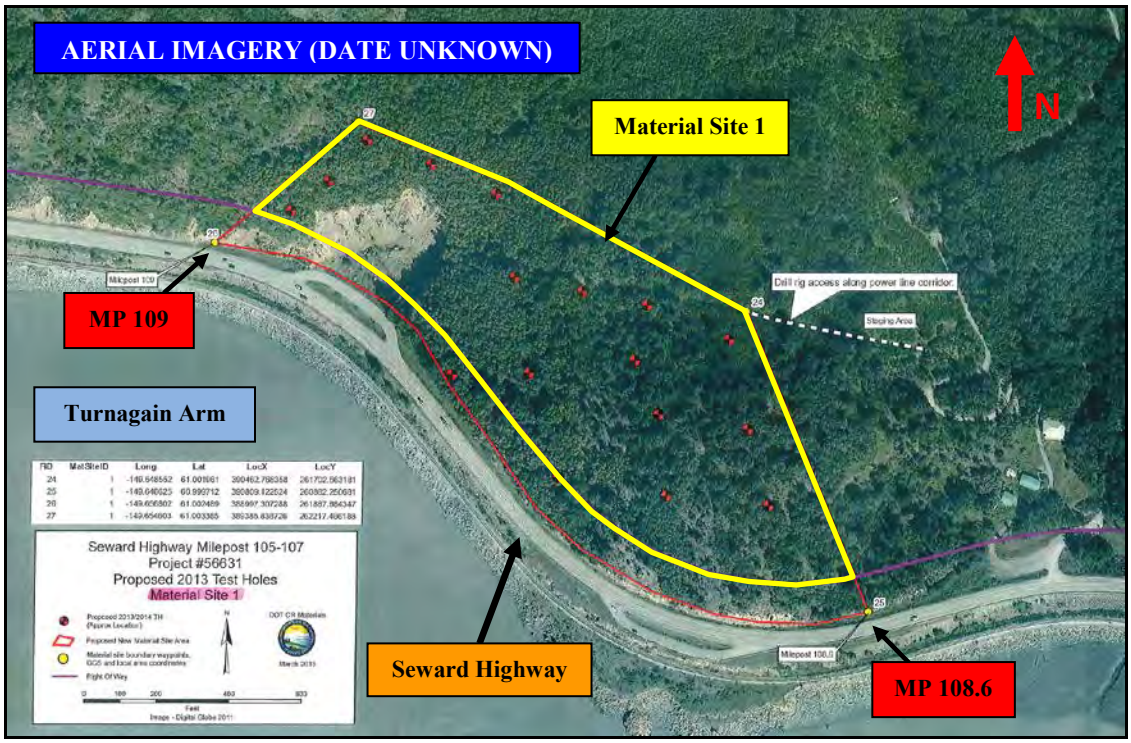
The Turnagain Arm district is an established community between Anchorage and Girdwood. Development in the district centers in the Indian, Bird Creek, and Girdwood. The Seward Highway and adjacent railroad bisects the area and is the primary arterial providing access to/from Anchorage to the Kenai Peninsula to the south.

Chapter 3: Property Description and Analysis

Overview

Our appraisal inspection and available mapping are the principal data sources used to describe the appraised property. We requested a preliminary title report, but we did not receive this document. However, we did receive title abstracts from DOWL, Inc. staff that included deeds, easements, Recorder's Office document displays, Master Title Plats, and survey data pertaining to the appraised property. Although we rely upon this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

The subject acquisition consists of a 19.6-acre parcel located on the north side of the Seward Highway right of way from about Milepost 108.6 to 109, near Rainbow, Alaska. We use a tabular-type format to describe the physical character of the parcel. The most important physical factor that affects land use potential is topography and bedrock soil geology. We discuss zoning and other regulatory requirements that affect land use potential after describing the parcel. Photographs that follow provide a visual overview while inserted exhibits help illustrate the physical character of the parcel.



Land Description

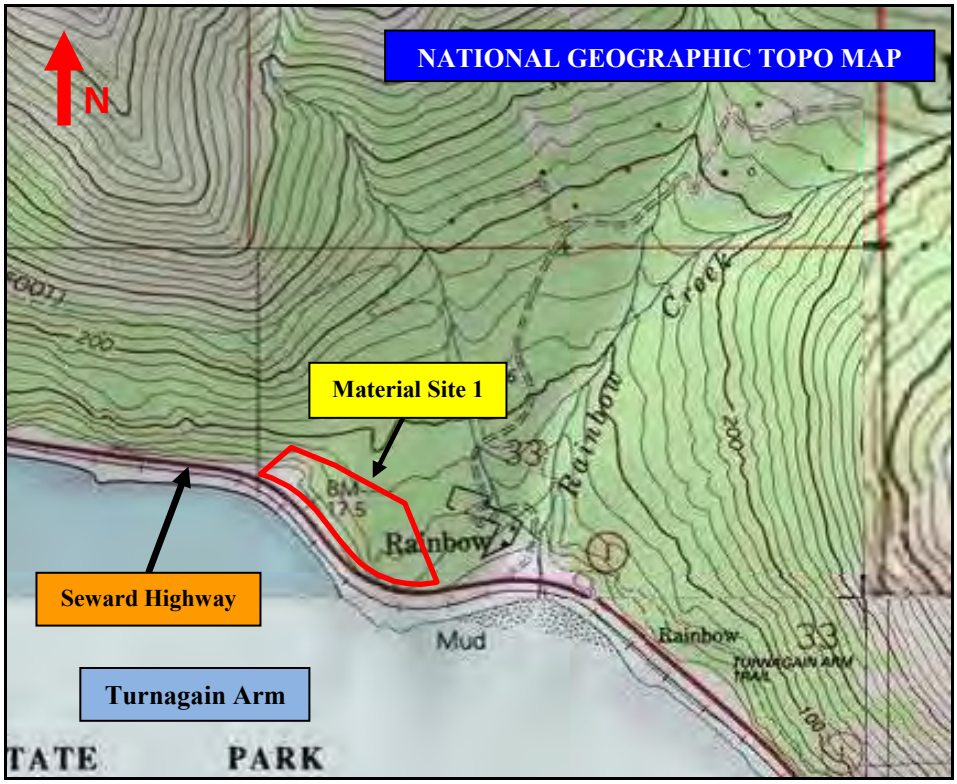
Overview: The entirety of highway frontage has a steep bluff profile or steep ascending slope. At the west end of the parcel, a portion has been excavated for gravel extraction; the remainder of the parcel is heavily treed. We observed limited areas suitable for development.

Present Use: Vacant land

Land Area: 19.6± acres or 853,776± square feet

Land Configuration: Irregular

Access: We presume legal access from Seward Highway on the south side of the parcel; 2,100± feet of highway right of way frontage



Topography: Bluff profile (40± feet) along southeast portion of highway frontage; steep ascending slope from highway along northwest and southeastern most portions, excepting a small area that has been excavated for prior gravel extraction

Soils: Thin layer of organics over bedrock

Vegetation: Brush and grasses, alder, willow, cottonwood, birch

Public Utilities: Electricity and telephone

Easements: None identified

Environmental Assessment: No evidence of adverse environmental conditions observed during the property inspection

Chugach State Park Land Use Regulations

The Land and Water Conservation Fund (LWCF) is a 50/50 Federal matching grant program that was used in the Chugach State Park to fund the acquisition of land including the subject parcel. The program requires that the property be retained and used solely for outdoor recreation in perpetuity. Therefore, the subject property may not be converted to anything other than public outdoor recreation uses without the prior review and approval by the Secretary of the U.S. Department of the Interior. Actions that may represent conversion of use include installation of cell towers, aboveground utilities, roads for uses other than recreation, creation of indoor recreation facilities, or private encroachments such as driveways.[6]

MOA Zoning Regulations

The subject acquisition parcel is located within the Chugach State Park, which is outside a zoning district. If the parcel was in the private sector, it would be zoned Turnagain Arm (TA) District. The purpose of this district is to govern the land uses for the area known as Turnagain Arm south of Potter Marsh, including but not limited to Rainbow, Indian, Bird Creek, and Portage/Twenty Mile. Permitted uses and densities within the TA District are to conform to the land use plan map, polices, land use definitions, and residential densities of the adopted *Turnagain Arm Comprehensive Plan*.[7] Permitted uses include the following:

- Residential and accessory uses and structures that conform to the *Turnagain Arm Comprehensive Plan*
- Commercial structures under 4,000 square feet in gross building area in areas designated "Turnagain Mixed Use" in the *Turnagain Arm Comprehensive Plan*
- Non-structural commercial uses occupying an area of 14,400 square feet or less in areas designated "Turnagain Mixed Use" in the *Turnagain Arm Comprehensive Plan*
- Industrial uses and structures in areas designated "industrial" in the *Turnagain Arm Comprehensive Plan*
- Institutional uses and structures under 4,000 square feet of gross building area in areas designated "community facility" in the *Turnagain Arm Comprehensive Plan*

[6] Chugach State Park Management Plan (May 2011), Chapter 4: Park Use and Issues, pp. 31-32.

[7] AMC Title 21: Land Use Planning 4-24.

- ➔ Traditional homestead uses and activities in areas designated "rural homestead" in the *Turnagain Arm Comprehensive Plan*

Conditional uses, which require a public review process, may be allowed provided they conform to the goals and policies of the *Turnagain Arm Comprehensive Plan*; protects the unique scenic and environmental features of the area; and minimizes impacts to adjacent properties, particularly those adjacent properties in a different land use category.

The Rainbow and McHugh Creek Land Use Plan states that all of Rainbow is designated for residential land use with a density of one dwelling unit per five acres.

Subject Property Photographs

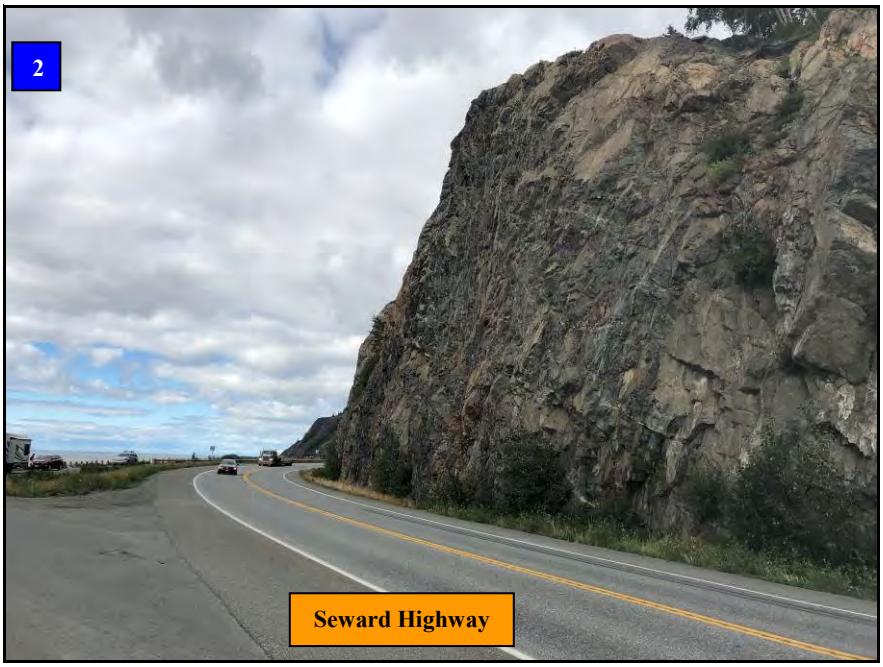
On Pages 21 through 23 are photographs taken by Jim Dahl on August 8, 2018, with a map depicting location of photographs on Page 24.

Property Photographs

Taken By: Jim Dahl August 8, 2018



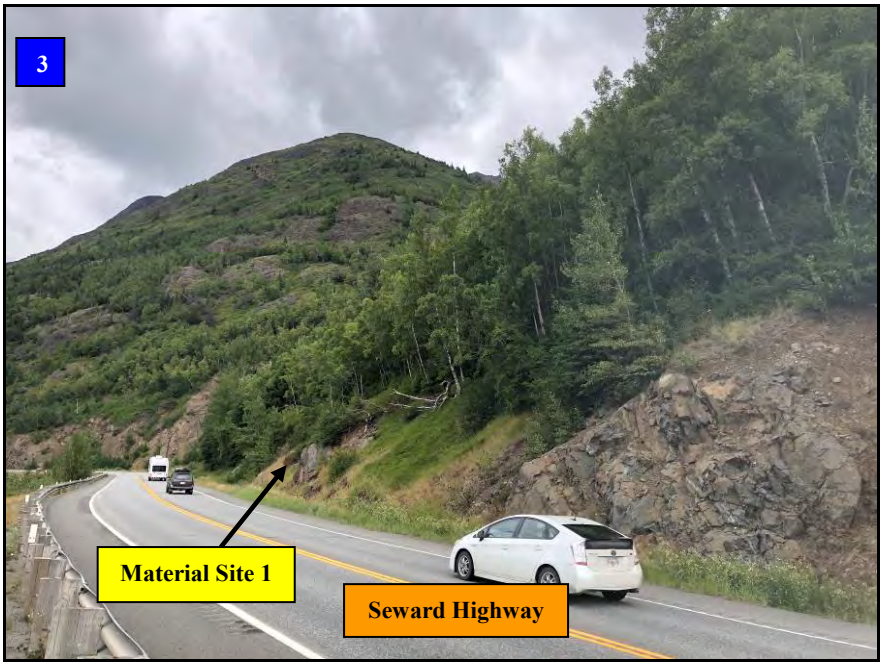
Easterly view toward northwestern portion of subject from Seward Highway



Westerly view of Seward Highway frontage at southern portion of subject

Property Photographs

Taken By: Jim Dahl August 8, 2018



Northwesterly view of northwest portion of subject



Northeasterly view of subject southern portion of subject from across Seward Highway

Property Photographs

Taken By: Jim Dahl August 8, 2018



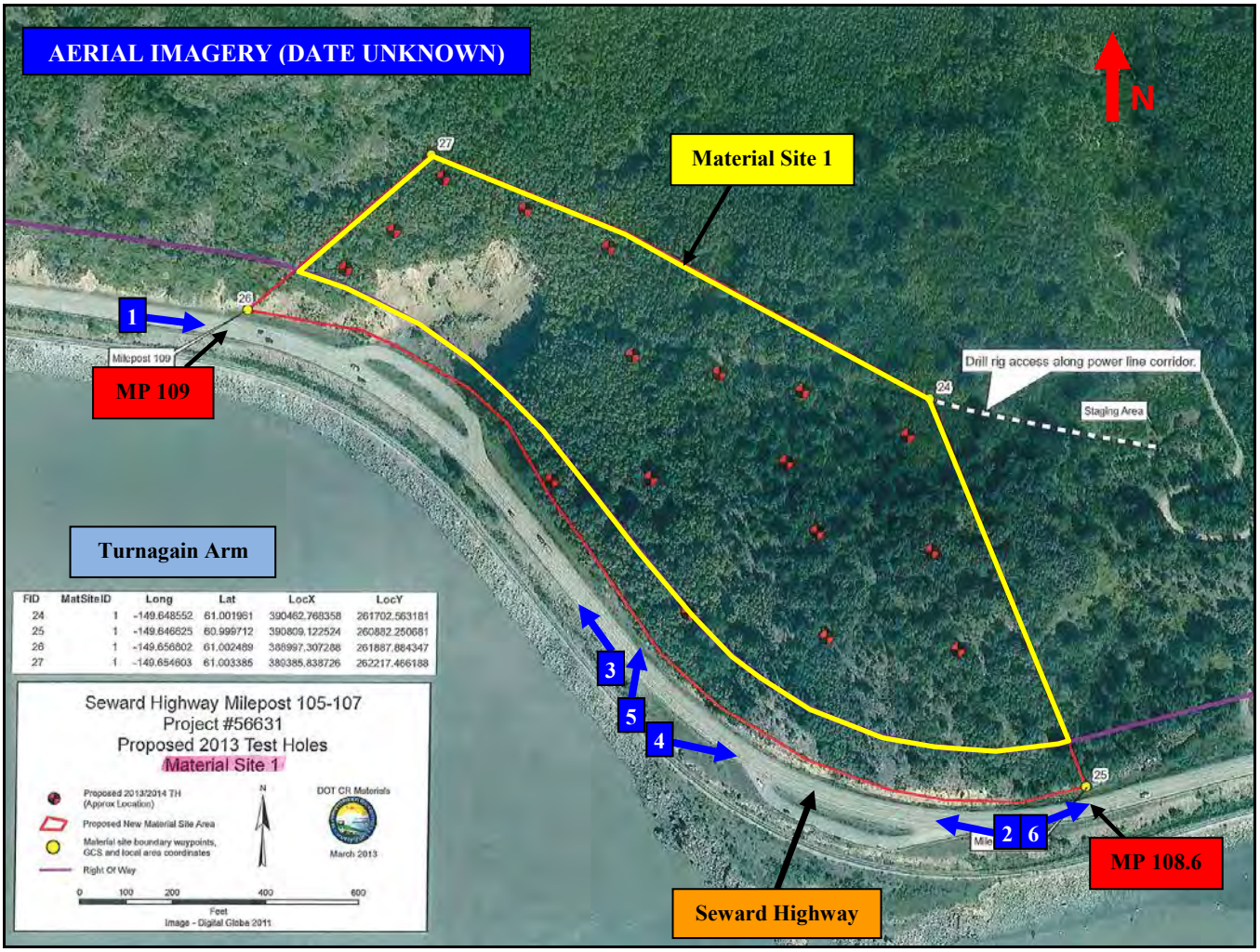
Northerly view of central portion of subject from across Seward Highway



Easterly view of southeastern most portion of subject

Property Photograph Location Map

Aerial Maps Showing Photo Location and Direction



Chapter 4: Highest and Best Use Analysis

Overview

Highest and best use is a market-driven concept rather than a subjective conclusion based on the experience of the appraiser or a property owner's wishes. Economic incentive is the motivation that has a market-effect on the productivity or profitability of the land. Our market value estimate relies upon the following definition of *highest and best use*.

The highest and most profitable use for which the property is adaptable and needed or likely to be needed in the reasonably near future.[8]

The criteria for analyzing potential use are legally permissible, physically possible, financially feasible, and the degree of profitability. Importantly, USAFLA requires that the estimate of highest and best use must be an economic use. A highest and best use analysis follows.

Highest and Best Use Analysis

Physically Possible/Legally Permissible: The subject is a 19.6-acre parcel located the north side of the Seward Highway right of way within Chugach State Park. The principal legal constraint affecting land use potential is the MOA zoning ordinance, which designates the subject parcel Turnagain Arm (TA) District if in the private sector. This zoning district references the Turnagain Arm Comprehensive Plan for land use regulations. The parcel is within the Rainbow Land Use Area, which is designated for residential land use with a density of one dwelling unit per five acres.

We observed steep rock embankment or steep sloping profile along the vast majority of the frontage. The bedrock limits development potential due to the high cost of developing access, as well as septic systems. However, the extensive ocean and mountain views are a desirable amenity. We determined the physical features of the parcel benefit recreation or residential use. Essentially, residential and recreation are legally permissible and physically possible uses of the subject parcel.

Financially Feasible: Residential and recreation are the uses of the subject parcel determined to be physically possible and legally permissible. Recreation is most likely, though residential home site is a likely alternative. We also analyzed the economic merits of subdividing the subject into smaller parcels; although subdivision is legal, we determined the investment risk exceeds potential income benefits due to

[8] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 22.

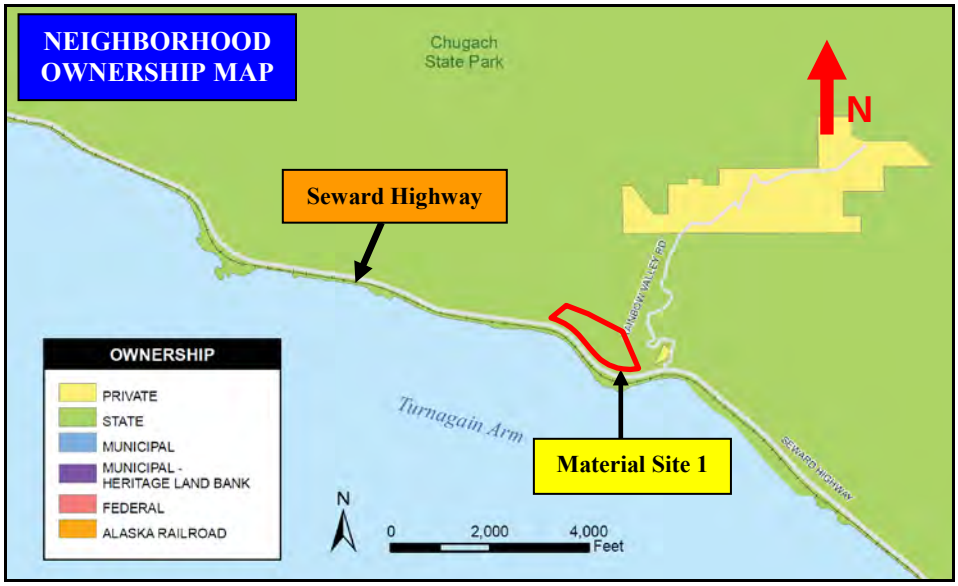
physical restraints. By default, a recreation cabin or single-family home site is the most probable financially feasible uses of the subject parcel.

Degree of Profitability: Available data indicates price behavior does not differ significantly for Turnagain Arm District land used for single-family home sites or recreation lands. Thus, we determined that the degree of profitability is similar for either type of land use. Therefore, we conclude that the highest and best use of the subject parcel is recreation or residential home site.

Highest and Best Use	**Recreation or Residential Home Site**

Larger Parcel Consideration

Determining the larger parcel is a key to the appraisal problem. The three criteria for determining the larger parcel are unity of ownership, contiguity, and unity of use. Fundamental to the unity of use analysis is the principles of substitution, demand, and applied economics. Ignoring these principles will compromise the credibility of the larger parcel analysis.



The acquired parcel contains 19.6± acres, which we assume is a surveyed, platted, and legally marketable, stand-alone property. As stated, USAFLA requires that the estimate of highest and best use must be an economic use, and our analysis determined that use is recreation or residential home site. Importantly, typical similar recreation and home site parcels range in size from about five to 80 acres. Therefore, the acquired parcel fits within the market range for similar use parcels.

Importantly, topographical and geological restraints limit any subdivision into smaller tracts, and there is no economic gain to expanding the area. Therefore, we determined the acquired parcel owned by the State of Alaska is the larger parcel.

Chapter 5: Property Valuation – Before Acquisition

Overview

This chapter analyzes similar land sales and makes comparisons of each to the 19.6-acre appraised parcel. We found sufficient sale activity to perform a credible analysis. We compare the sales on a price per acre basis and make qualitative adjustments for differences in location and physical character. An explanation of the sales comparison methodology follows.

Sales Comparison Methodology

The sales comparison approach is a market-based analysis premised on price behavior for alternative home site or recreational lands. Our initial land sales search focused on the Turnagain Arm market district, but turned up limited sale data that offers a reasonable comparability to the subject. Therefore, we expanded our search to include other similar access and topographical characteristics, and locations proximate to Chugach State Park, including Eagle River and Chugiak. Thereafter, we found eight sales since March 2013. Of the eight, we rely upon four sales to compare directly to the subject. The following table summarizes the eight sales, highlighting the four primary sales.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
2	Near the head of Crow Creek, eight miles up Crow Creek Road from Girdwood, *Crow Pass*	N/A	66.48	3/13	$198,000	$2,978
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
4	Southwest corner of Upper De Armoun Road and Canyon Road, *Anchorage*	R-8	67.83	9/14	$500,000	$7,371
5	End of Sandpiper Drive, south of Rabbit Creek Road, *Anchorage*	R-7	99.70	12/16	$900,000	$9,072
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
9	Foot trail to property from end of Potter Heights Drive, *Anchorage*	R-10	35.00	7/15	$195,000	$5,571

Regarding the comparative analysis, we use qualitative adjustments to measure differences between the sales and the subject. Qualitative adjustment uses a technique known as a relative comparison analysis, which represents a study of market relationships without recourse to quantification. By analyzing and interpreting market behavior, we rate various elements of comparison that influence price as superior, inferior, or similar. This adjustment technique is particularly useful in analyzing the comparable sales because of interrelationships between physical characteristics. The relative comparison grid on Page 37 summarizes the ratings of the primary land sales to the subject parcel.

Analysis of Elements of Comparison

The first step of the valuation process is to ascertain what comparative elements cause price to vary. We determined conditions of sale, location and physical characteristics, i.e., size, access, topography, and utilities, have the greatest influence on price. Importantly, real property rights conveyed, financing terms, and market conditions had no affect on price behavior for these sales. An explanation of adjustments made follows.

Real Property Rights Conveyed

The property rights appraised is the fee simple interest, and each of the sales conveyed similar entitlements. Therefore, no adjustment is necessary for property rights conveyed.

Financing Terms

Based on the definition of market value we assume financing terms in cash, or on terms reasonably equivalent to cash, for the subject property. Sales 1 and 8 were owner-financed transactions. However, owner financing is common in this market, and had little to no effect on price behavior. Therefore, we do not adjust these comparables for financing terms.

Conditions of Sale

Regarding Sale 1, the buyer owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivations might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district. However, Sale 7 requires a downward adjustment for because the adjacent owner was motivated to purchase the property for access. Sales 3 and 8 were exposed to the market, and do not indicate any atypical motivation.

Market Conditions

Analysis indicates little to no appreciation from 2014 to the present day, and we found no data to support a market conditions adjustment to any of the primary sales analyzed. Therefore, we do not adjust the comparable land sales for change in market conditions.

Location

The neighborhood environment and proximity of shopping and services are location influences that affect price behavior. The appraised property is located 14 miles from Midtown Anchorage, and about ten miles from a South Anchorage shopping district. Sales 1 is located 15 miles from Midtown Anchorage, but within five miles of the Eagle River commercial core. Sales 3, 7 and 8 are about 10 miles from Midtown Anchorage. Overall, the neighborhoods offer similar locations removed from shopping and services. Therefore, we do not adjust the sales for location.

Physical Characteristics

As stated, size, access, topography, easements and restrictions, and utilities are physical factors that cause price to vary. Importantly, interrelationships between these physical features make it difficult to measure or quantify price differential. Thus, we measure physical differences by a qualitative rating of inferior, similar, or superior.

Size: The sales range from 20.00± acres to 80.00± acres, whereas the subject is a 19.60-acre parcel. Typically, an inverse relationship between price and size reflects market behavior. However, this relationship is not linear. In fact, analysis of historical sales develops a price curve that has a steep slope for parcels containing less than 20 acres, a moderate slope for parcels ranging from 20 to 80 acres, and a modest slope for parcels greater than 80 acres. The weakness of this analytical process is the presumption that size is the sole price influence, which is an improbable dynamic. Thus, we use the price curve as an analytical tool to bracket value, but not quantify size adjustment. Based on the preceding analysis, we make a significantly upward adjustment to Land Sales 1, 3 and 7 for sizes over two to four times larger than the subject.

Access Comparisons: The subject fronts the Seward Highway right of way, but potential legal and physical access is marginal and includes risk. Developing physical access to the subject would be costly due to the bedrock and steep sloping topography. Location on a bend of the highway could create legal barriers to a driveway permit due to safety concerns.

Sale 1 does not have developed road access, but does have access via trail for ATV-type vehicles. Sale 7 has dirt roadway access that is passable by vehicle. Overall, Sales 1 and 7 physical and legal constraints similar to

the subject, and we make no adjustment. Sale 3 has access from a relatively well-used, dirt road that supports multiple properties, and Sale 8 has access via gravel road. Therefore, we adjust these sales downward for access superiority. Importantly, access is an important physical characteristic that has a large effect on the price paid for land.

Topography Comparisons: The subject has sloping topography that includes a steep rock face along most of the Seward Highway frontage. Sales 1 and 7 have similar steep sloping topography that limits development potential. Sales 3 and 8 have a more modest slope, which is a superior characteristic requiring a downward adjustment.

Easement and Restrictions: We do not identify any adverse easements or restrictions affecting the subject. However, Sales 3 and 8 are bisected by roadways, indicating an upward adjustment.

Utilities: The subject has electricity some 200± feet east of the parcel. Sales 1 and 7 do not have any utilities within the general proximity, and require upward adjustments for this inferiority. Sales 3 and 8 have electricity at the site, which is not significantly different from the subject.

View Amenity: The subject has direct view of Turnagain Arm and surrounding mountains. Sale 1 has Knik Arm and mountain views, while Sales 3, 7 and 8 have city and ocean views. While views differ, desirability of one view over the other is a subjective and personal assessment. Further, there is no data to support adjusting the sales for a view of Knik Arm versus Cook Inlet and Turnagain Arm. Therefore, we do not adjust for view amenity.

Use (Zoning)

The subject parcel is located within the Chugach State Park, which is outside a zoning district. If the parcel was in the private sector, it would be zoned Turnagain Arm (TA) District and subject to the Rainbow Land Use Plan. This area is designated for residential land use with a density of one dwelling unit per five acres. Each of the primary sales is zoned R-10, a low-density residential district with a minimum lot area of 1.25 to 7.50 acres depending on average slope and soil geology of the parcel. Due to the sloping topography and bedrock soils of the comparable sales, the R-10 zoning is rated generally similar to the subject indicating no adjustment is necessary.

Comparative Land Sale Analysis

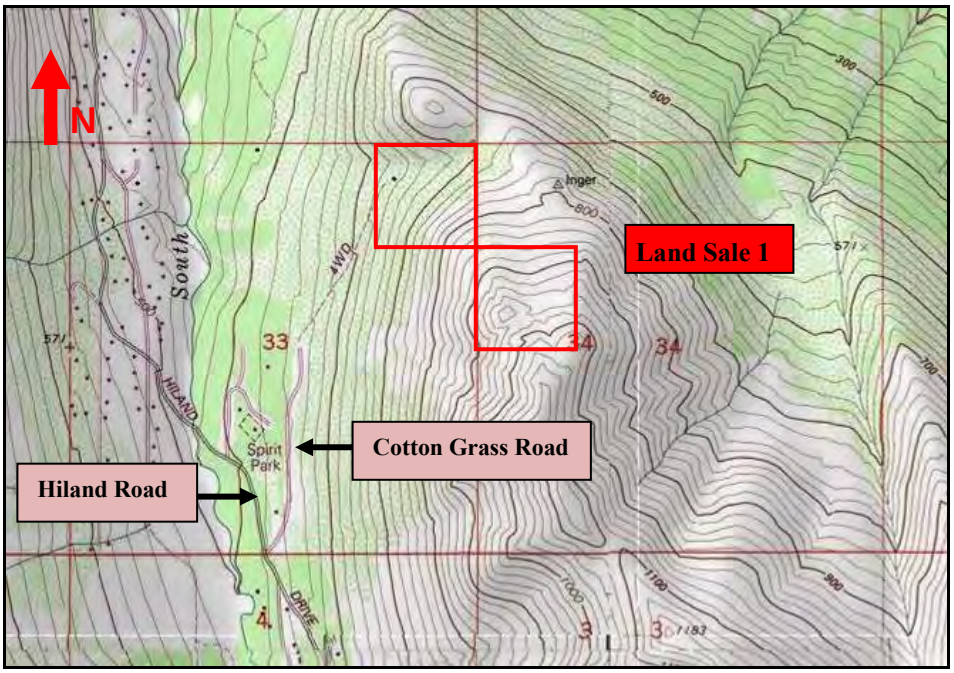
The tabular summary on the following page is of the primary land sales used in comparative analysis. The inserted map that follows provides a location reference, with additional details of the four comparable land sales in the addendum.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
	Material Site 1 – MP 109 Seward Highway, Rainbow	***TA Assumed***	***19.60***	*-- --*	*-- --*	*-- --*

Land Sale 1

Summary: This sale is an 80-acre parcel located in the South Fork Eagle River valley neighborhood accessible from Hiland Drive. Located adjacent to Chugach State Park boundaries, the parcel has a panoramic northwesterly view of Eagle River and Knik Arm. While trail access is possible to the westerly parcel area, it permits only ATV-type vehicles. Steep topography is the defining physical feature, which diminishes developable land area. Available utilities are within one-half mile.

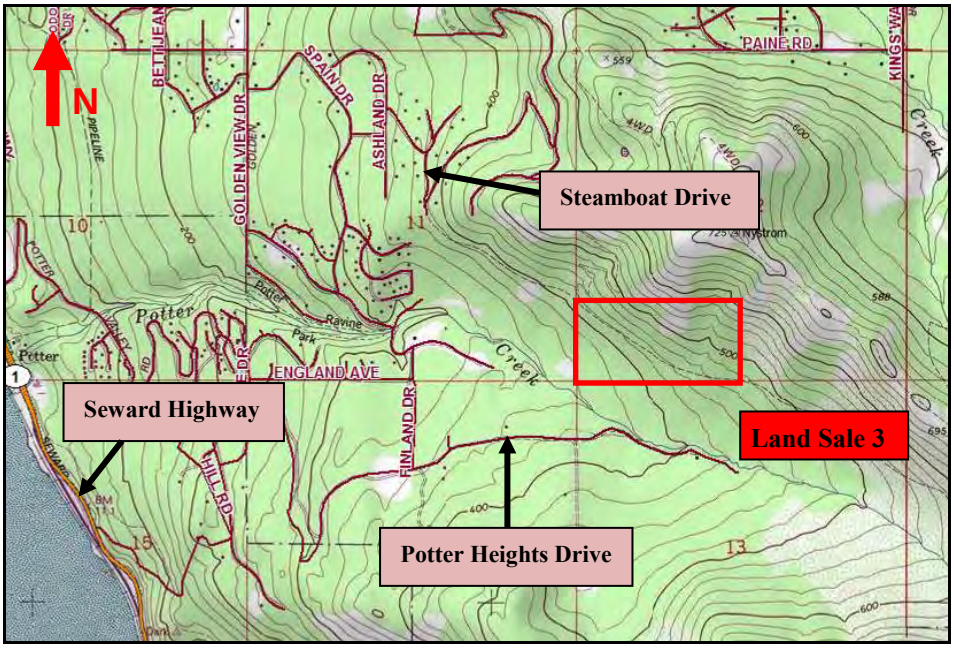


The buyer of Sale 1 owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivations might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district.

Comparative Analysis: Upward adjustments are necessary for inferior size and utilities. Therefore, the adjustment to Land Sale 1 is upward, indicating a unit value greater than $2,215 per acre.

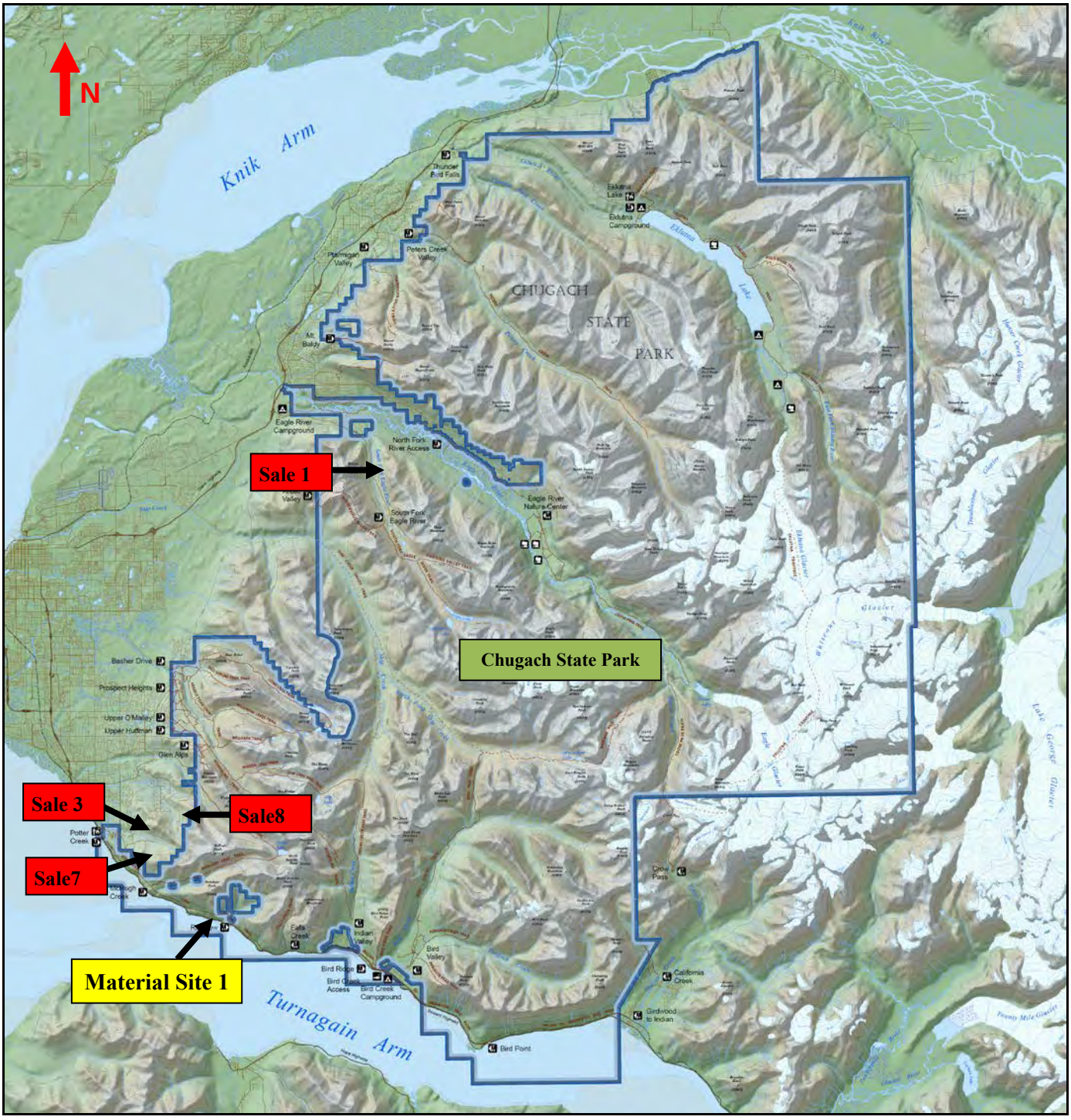
Land Sale 3

Summary: This sale is an 80.00-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Nystrom Peak, the parcel has a moderate to steep slope with southwesterly view of Anchorage and Turnagain Arm. Access is via a dirt trail extension of Steamboat Drive, which bisects the parcel as a 60-foot road easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is at the site.



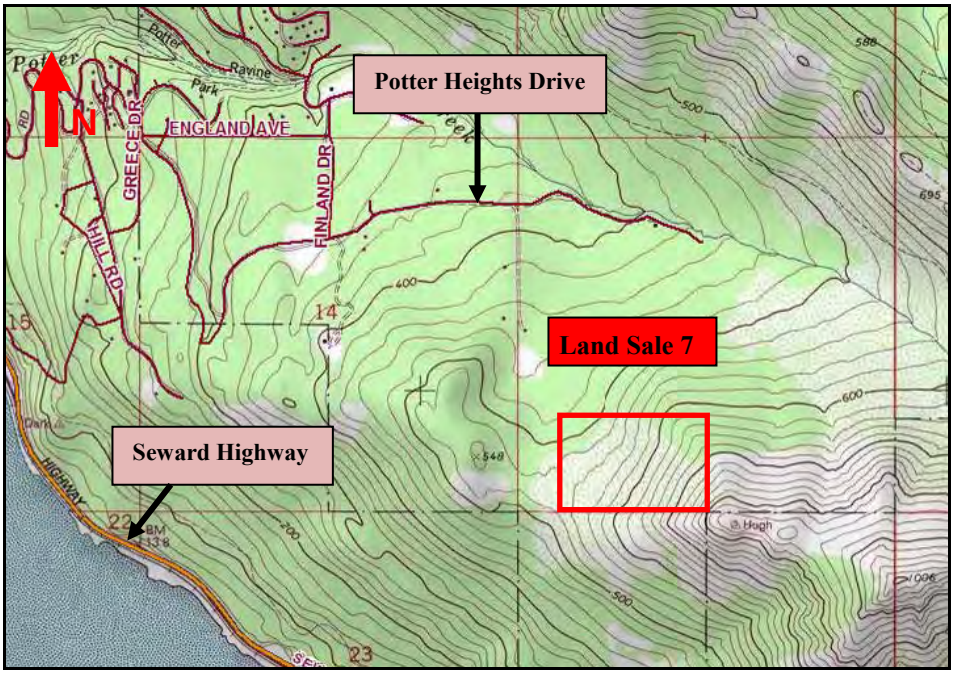
Comparative Analysis: Analysis supports upward adjustments for size and the bisecting roadway. However, access and topography are superior characteristics that outweigh inferiorities. Overall, the net adjustment to Land Sale 3 is downward, indicating a unit value less than $4,375 per acre.

Land Sale Map



Land Sale 7

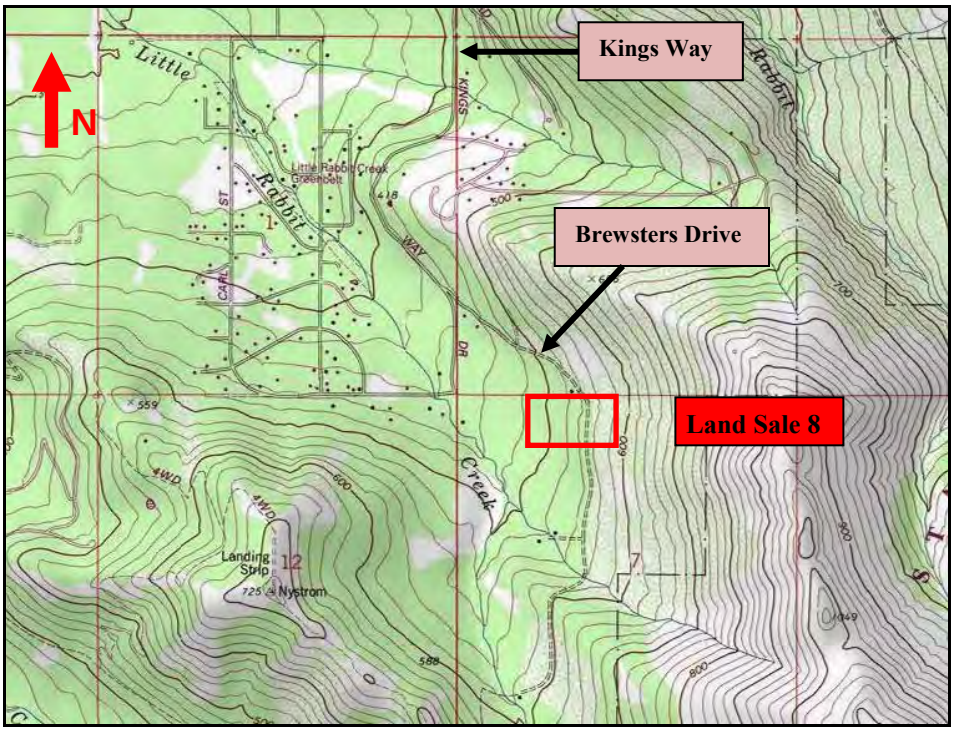
Summary: This sale is a 62.50-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Hugh Peak, the parcel has a moderate to steep slope with northwesterly view of Anchorage and Turnagain Arm. Access is via a dirt road, and an undeveloped section line easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is about 1,500 feet to the northwest. The buyer is an adjacent property owner that purchased the parcel for access to a proposed homsite.



Comparative Analysis: Analysis supports a downward adjustment for conditions of sale. Conversely, size and lack of utilities are inferior characteristics that outweigh superiority. Overall, the net adjustment to Land Sale 7 is upward, indicating a unit value greater than $2,080 per acre.

Land Sale 8

Summary: This sale is a 20.00-acre parcel located in the Bear Valley neighborhood proximate to Chugach State Park. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage. Public electricity is along the northern boundary.



Comparative Analysis: Analysis supports downward adjustments for superior access and topography. Conversely, the bisecting public roadway is inferior. Overall, the net adjustment to Land Sale 8 is downward, indicating a unit value less than $7,450 per acre.

On the following page is an adjustment grid that summarizes the comparative land sale analysis.

Comparable Land Sale Adjustment Grid

Land Sale No.	Subject	Land Sale 1	Land Sale 3	Land Sale 7	Land Sale 8
Sale Price	-- --	**$177,200**	**$350,000**	**$130,000**	**$149,000**
Price/Acre	-- --	**$2,215**	**$4,375**	**$2,080**	**$7,450**
Property Rights Conveyed	*Fee simple*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Financing Terms	*Cash*	Owner-financed **-Similar-**	Cash **-Similar-**	Cash **-Similar-**	Owner-financed **-Similar-**
Conditions of Sale	*Assumed Typical*	**-Similar-**	**-Similar-**	**-Superior-**	**-Similar-**
Market Conditions	*8/18 (Date of value)*	7/14 **-Similar-**	6/17 **-Similar-**	9/15 **-Similar-**	9/15 **-Similar-**
Adjusted $/Acre	-- --	**$2,215**	**$4,375**	**< $2,080**	**$7,450**
Location	*Turnagain Arm; Rainbow*	**- Similar -**	**-Similar-**	**-Similar-**	**-Similar-**
Physical Character					
Size	*19.60 Ac.*	80.00 Ac. **-Inferior-**	80.00 Ac. **-Inferior-**	62.50 Ac. **-Inferior-**	20.00 Ac. **-Similar-**
Access	*Seward Highway*	**-Similar-**	**-Superior-**	**-Similar-**	**-Superior-**
Topography	*Steep bluff; sloping*	Steep sloping **-Similar-**	Modest to steep slope **-Superior-**	Modest to steep slope **-Similar-**	Modest slope **-Superior-**
Easements and Restrictions	*None*	**-Similar-**	**-Inferior-**	**-Similar-**	**-Inferior-**
Utilities	*Electricity*	None **-Inferior-**	Electricity **-Similar-**	None **-Inferior-**	Electricity **-Similar-**
View Amenity	*Turnagain Arm; Mountains*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Use (Zoning)	*TA (assumed)*	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-10** **-Similar-**
Overall Relative Comparison Rating		**Inferior**	**Superior**	**Inferior**	**Superior**
Adjusted $/Acre	-- --	**> $2,215**	**< $4,375**	**> $2,080**	**< $7,450**

Reconciliation of Comparative Land Sale Analysis – Low-Utility Uplands

The comparable land sales indicate an unadjusted unit value range from $2,080 to $7,450 per acre. After analysis, Land Sales 3 and 8 are superior indicating a value less than $4,375 per acre. In contrast, Land Sales 1 and 7 are inferior indicating a value greater than $2,215 per acre. We array the land sales and subject on an overall basis as follows.

Land Sale	$/Acre	Overall Rank	Net Adjustment
8	$7,450	Superior	↓
3	$4,375	Superior	↓
Subject	-- --	-- --	-- --
1	$2,215	Inferior	↑
7	$2,080	Inferior	↑

After qualitative adjustments, the range tightens to a value greater than $2,215 but less than $4,375. Sales 3 and 8 have superior access, which is an important physical characteristic that has a large effect on the price paid for land. Therefore, we estimate a value in the lower half of the indicated range or $2,700 per acre. This develops the following value estimate.

19.60 Ac. @ $2,700/Ac. = $52,920

In conclusion, the market value of the larger parcel before the acquisition is as follows.

Market Value Before Acquisition	**$53,000**

Chapter 6: Property Valuation – After Acquisition

Overview

Because the larger parcel and acquisition are the same, valuation reflects a full acquisition. Therefore, the property after the acquisition has no value.

Market Value After Acquisition	**$0**

Chapter 7: Market Value of Acquisition

Overview

We employ the before and after methodology to value the acquisition of Material Site 1. Analysis based on the sales comparison approach concluded with market value estimate before the acquisition as follows.

Value Before Acquisition	***$53,000***

The valuation reflects a full acquisition. Therefore, the property after the acquisition has no value.

Value After Acquisition	***$0***

The value of the acquisition is the difference between the before and after opinions of market value. Thus, the value of the acquisition of Material Site 1 is as follows.

Market Value of Acquisition	***$53,000***

Market Value of Acquisition

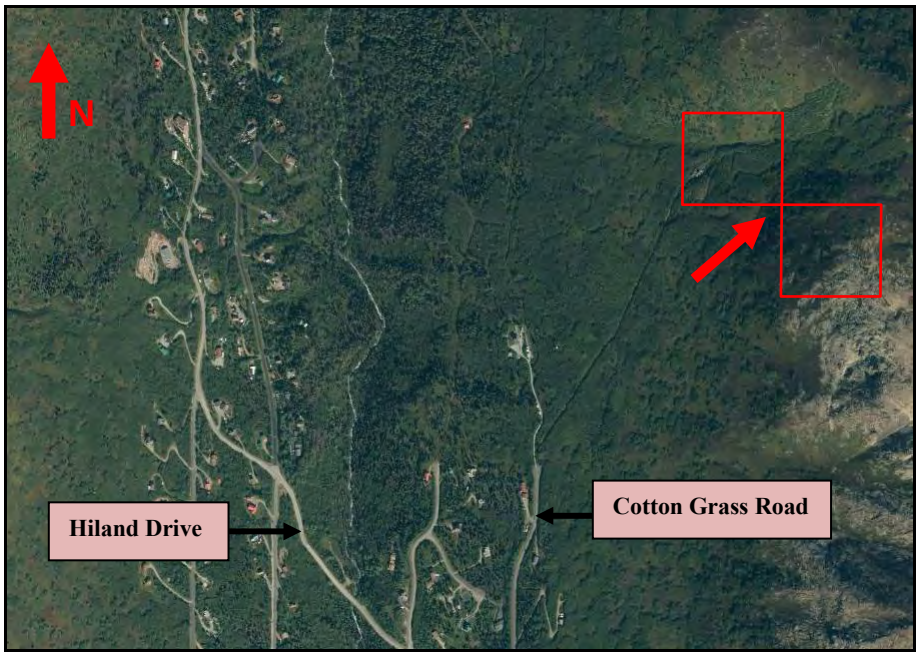
Based on the preceding data, reasoning, and analysis, it is our opinion the market value of the acquisition "Material Site 1," as of August 8, 2018, is as follows.

Market Value of Acquisition	**$53,000**

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 1" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

MacSwain Associates LLC

Comparable Land Sale 1



Location:	East of Cotton Grass Drive off of Hiland Road, 9± miles southeast of Eagle River, Alaska
Assessor Numbers:	050-411-40 & 41
Legal Description:	NE4NE4, Section 33, T14N, R1W SM and SW4NW4, Section 34 T14N, R1W, SM, Anchorage Recording District

Grantor:	Eric Gingrich Personal Representative for Estate of Stephen Gingrich	**Instrument:**	Personal Representative's Deed
Grantee:	Hertha Monroe	**Document No:**	2014-028880-0
Sale Date:	7/14	**Data Source:**	Broker
Sale Price:	$177,200	**Confirmed By:**	Dan Shantz
Cash Equivalent Price:	$177,200	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $88,600 down payment, $88,600 Deed of Trust at undisclosed terms		

Land Area:	80.00± acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential
Access:	Trail	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements	**Inspected By:**	Dan Shantz

Property Description:

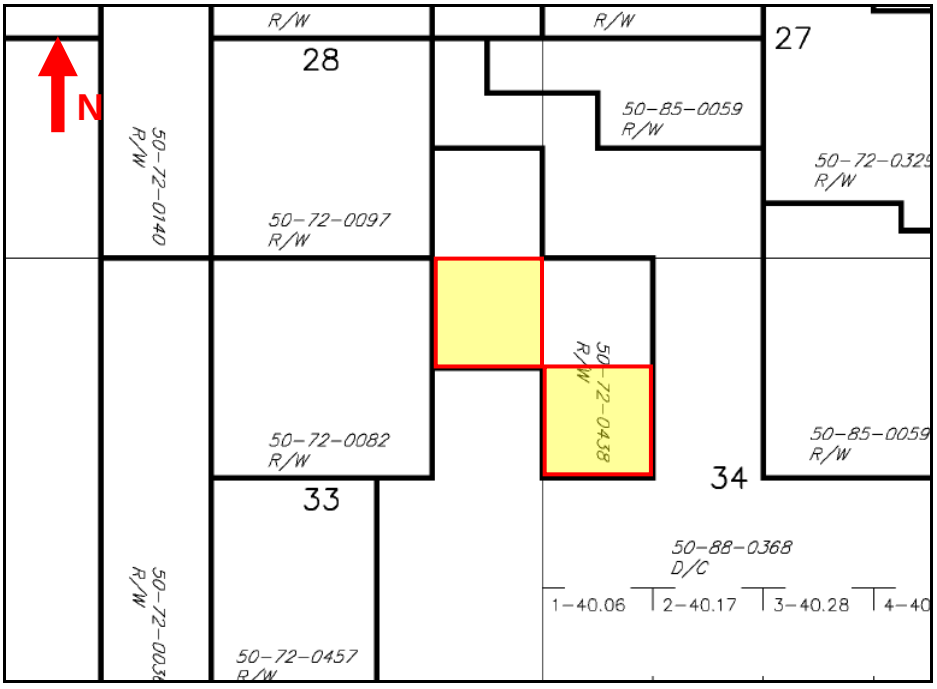
This 80-acre parcel is located on the eastern slope of the South Fork Eagle River valley neighborhood accessible from Hiland Road. Location is 15± miles from Midtown Anchorage. A trail extending nearly one-half mile links the parcel to Cotton Grass Drive. Topography is steep, which diminishes subdivision potential.

Remarks:

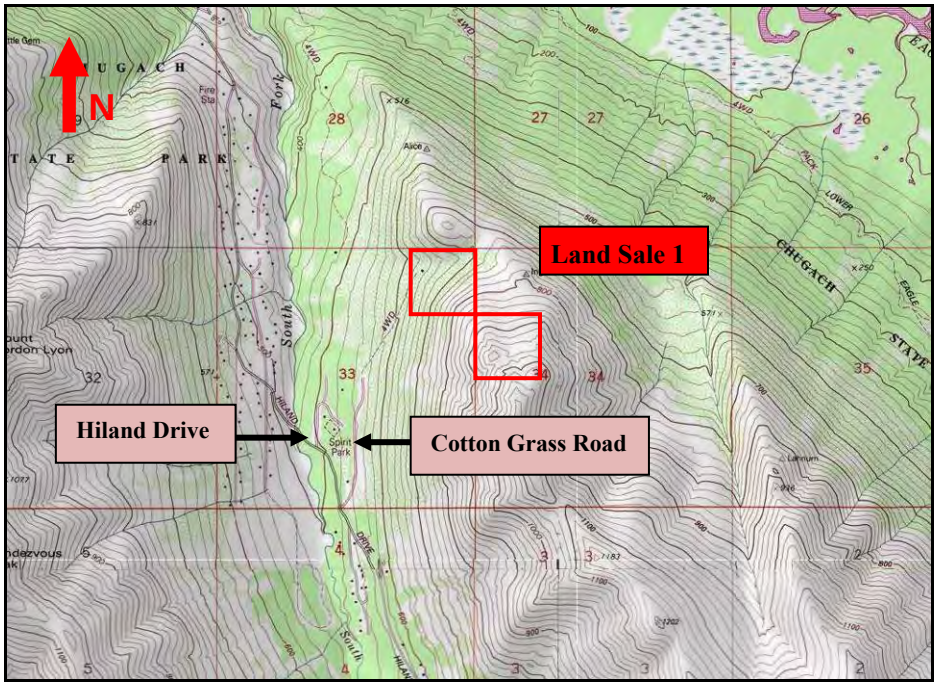
The buyer owned a contiguous property and desired to protect their privacy. The Broker stated the buyer negotiated the purchase prior to the listing reaching the MLS database.

Analysis **$177,200** ÷ **80.00± Acres** = **$2,215/Acre**

Comparable Land Sale 1



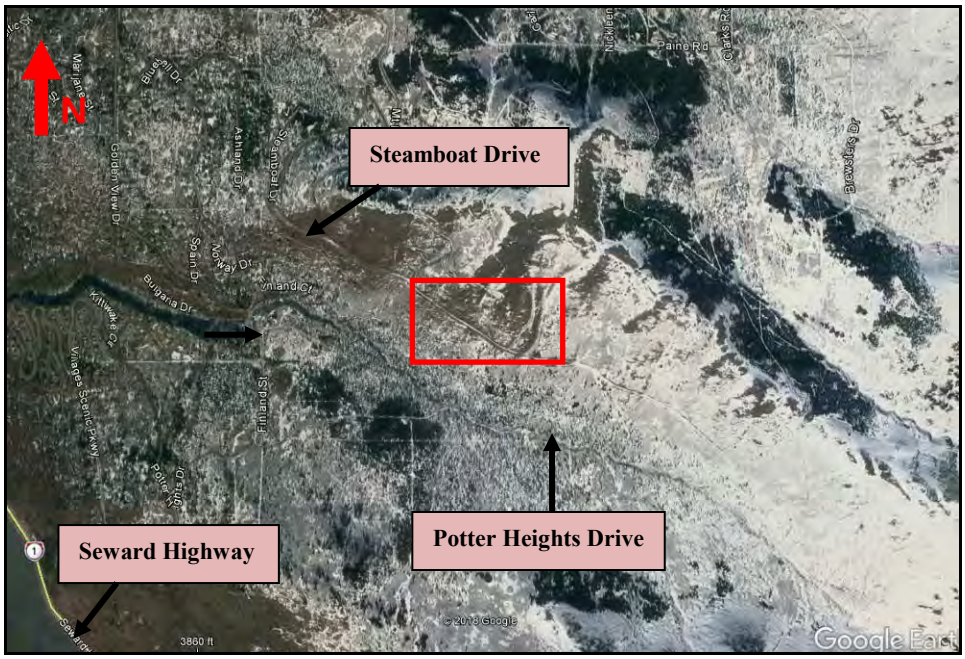
Portion of MTP T 14N, R 1W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 3



Location:	Dirt road extension of Steamboat Drive, north of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-221-02
Legal Description:	Tract 3, Potter Creek Subdivision, Plat No. 71-202

Grantor:	J&L Miller Alaska Community Property	**Instrument:**	Warranty Deed
Grantee:	Christopher Matthew & Kimberly Cavanaugh	**Document No:**	2014-031020
Sale Date:	6/17	**Data Source:**	Broker
Sale Price:	$350,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$350,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	80.00 Acres	**Public Utilities:**	Electricity
Zoning:	R-10	**Intended Use:**	Residential
Access:	Dirt trail extension of Steamboat Drive	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements; 60-foot bisecting road easement	**Inspected By:**	Steve MacSwain, MAI

Property Description:

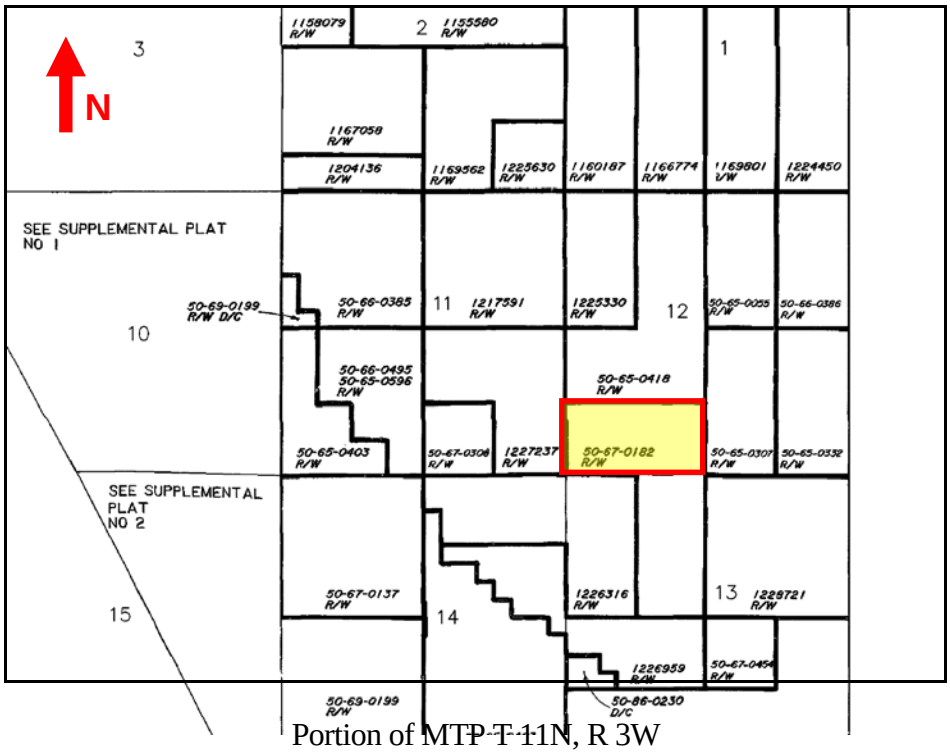
This 80-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on the southwest slope near Nystrom Peak, the parcel has a moderate to steep slope. Access is via a well-travelled, dirt roadway extension of Steamboat Drive that pass through the parcel and continues to several other properties. Electricity is at the site.

Remarks:

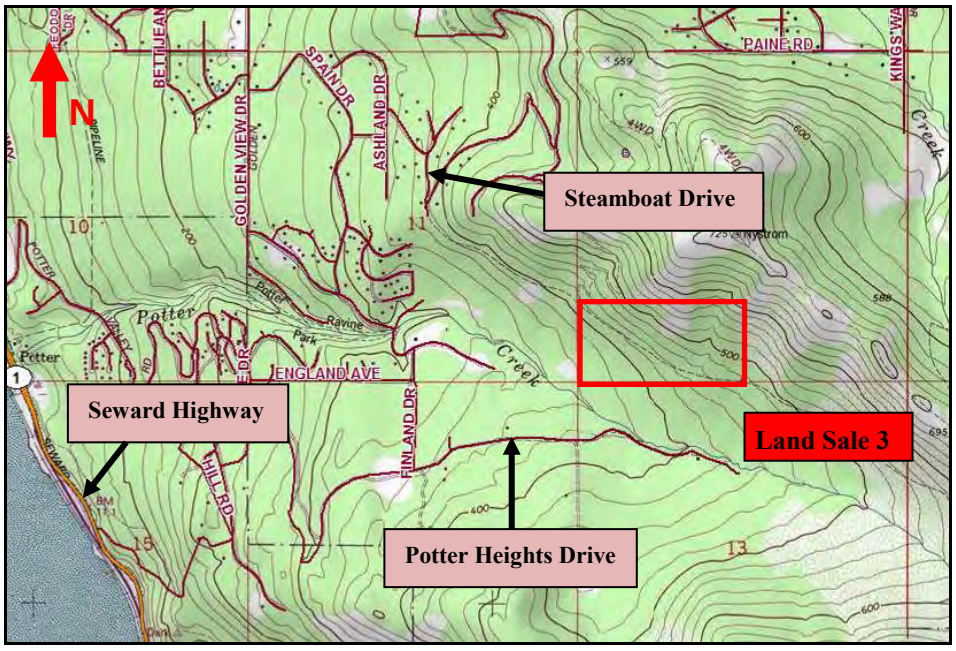
The parcel was originally listed at $400,000, before lowering to $370,000 and securing an offer after 16.5 months of exposure.

Analysis **$350,000** ÷ **80.00 Acres** = **$4,375/Acre**

Comparable Land Sale 3



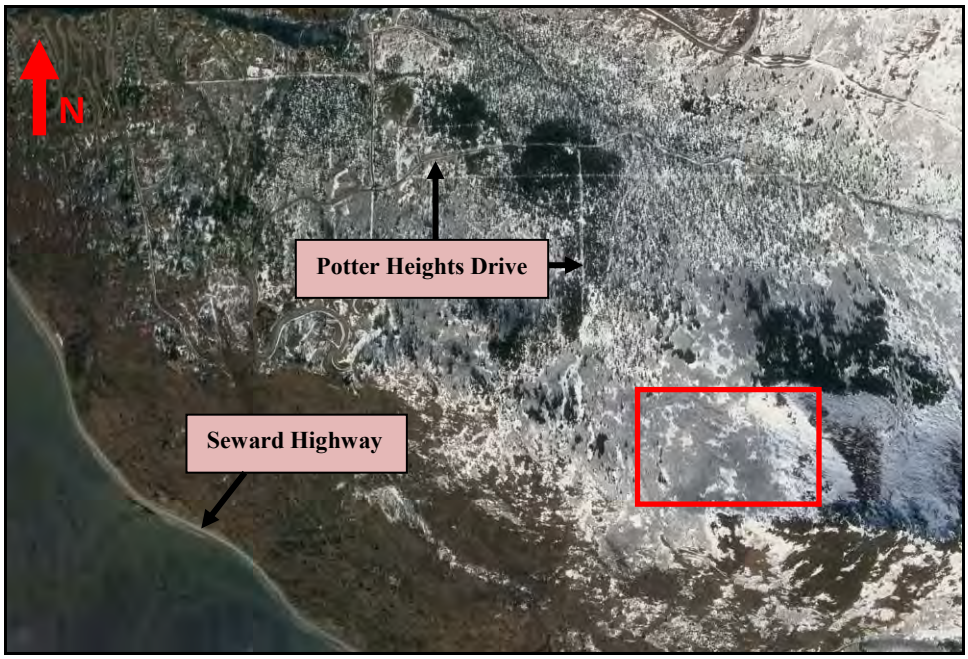
Portion of MTP T 11N, R 3W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 7



Location:	End of dirt road from Miller Drive, South of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-321-25
Legal Description:	Tract 2, McHugh Subdivision, Plat 88-10, Anchorage Recording District

Grantor:	Chrisopher R. Miller (Trustee for Estate of Helena Marie Miller)	**Instrument:**	Warranty Deed
Grantee:	Eric and Christy Gieser	**Document No:**	2015-053500-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$130,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$130,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	62.50 Acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential/access
Access:	Dirt road though access easement and section line easement	**Highest & Best Use:**	Residential
Easements/Restrictions:	50-foot section line easement along south boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

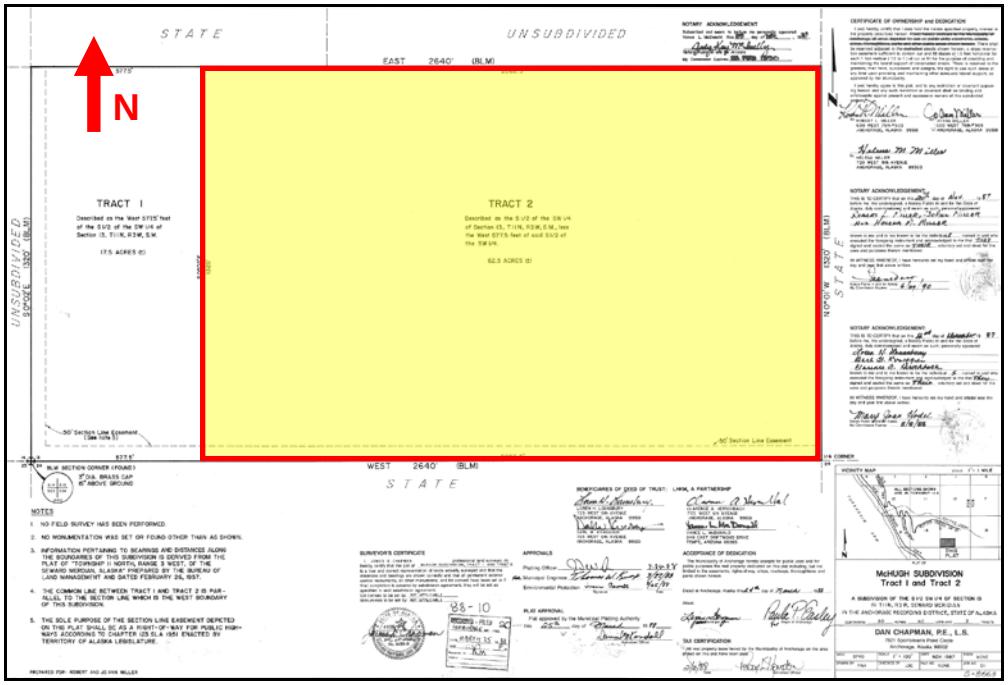
This 62.50-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on slope near Hugh Peak, the parcel has a moderate to steep slope with northwesterly view of Anchorage and Turnagain Arm. Access is via a dirt road, and an undeveloped section line easement. Public electricity is are about 1,500 feet to the northwest.

Remarks:

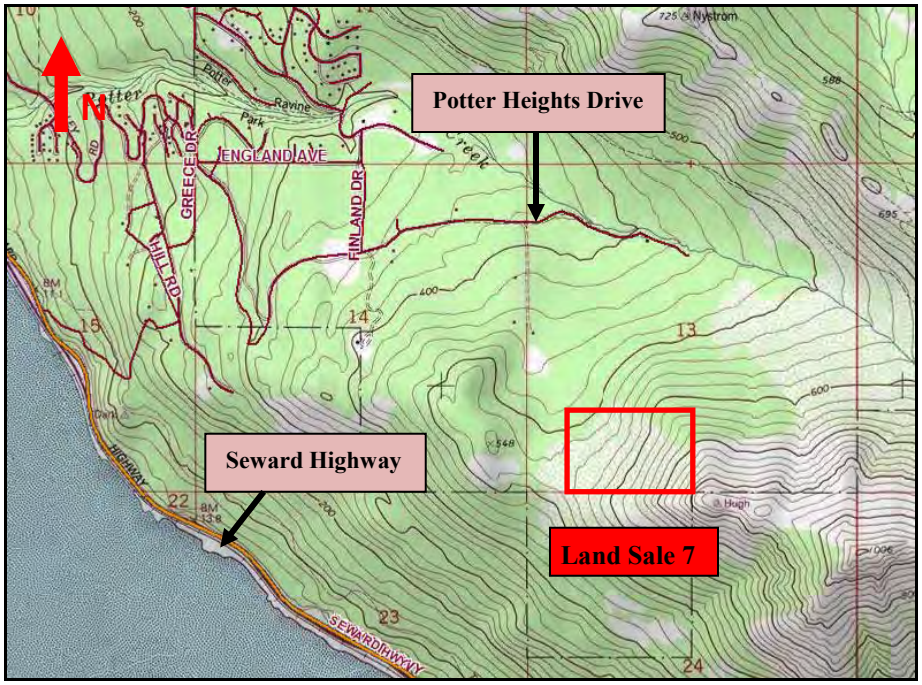
The Broker stated the parcel pended after a marketing time of 4 days with a full price offer from an adjacent property owner. The buyer purchased the parcel for access to their existing property.

Analysis **$130,000** ÷ **62.50 Acres** = **$2,080/Acre**

Comparable Land Sale 7



Plat No. 82-59



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 8



Location:	Bisected by Brewsters Drive, off Kings Way, Bear Valley neighborhood, 10.5± miles southeast of Midtown Anchorage, Alaska
Assessor Number:	020-151-03
Legal Description:	N1/2NE1/4NW1/4, Section 7, T 11N, R 2W, SM, Anchorage Recording District

Grantor:	James Rowe	**Instrument:**	Warranty Deed
Grantee:	Shawn P. and Joell F. McAlpin	**Document No:**	2015-046895-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$149,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$149,000	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $25,000 down payment, $124,000 Deed of Trust at undisclosed terms		

Land Area:	20.00 Acres	**Public Utilities:**	Electricity at northern boundary
Zoning:	R-10	**Intended Use:**	Residential
Access:	Gravel roadbed	**Highest & Best Use:**	Residential
Easements/Restrictions:	Bisecting roadway; 50-foot section line easement along southern boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

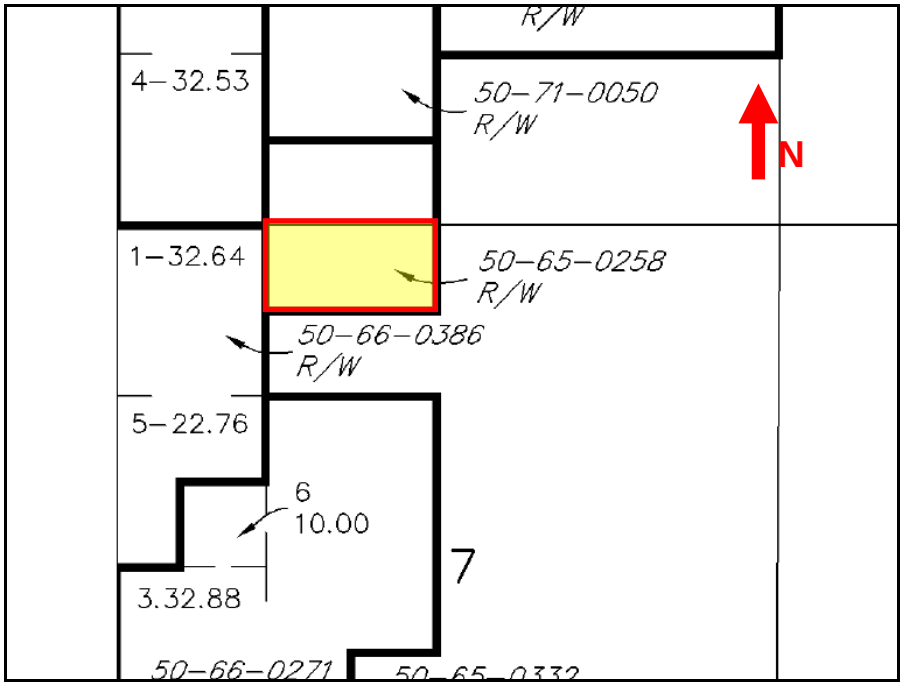
This 20.00-acre parcel is located in on either side of Brewsters Drive, in the Bear Valley neighborhood, about 9.5± miles from Midtown Anchorage. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage.

Remarks:

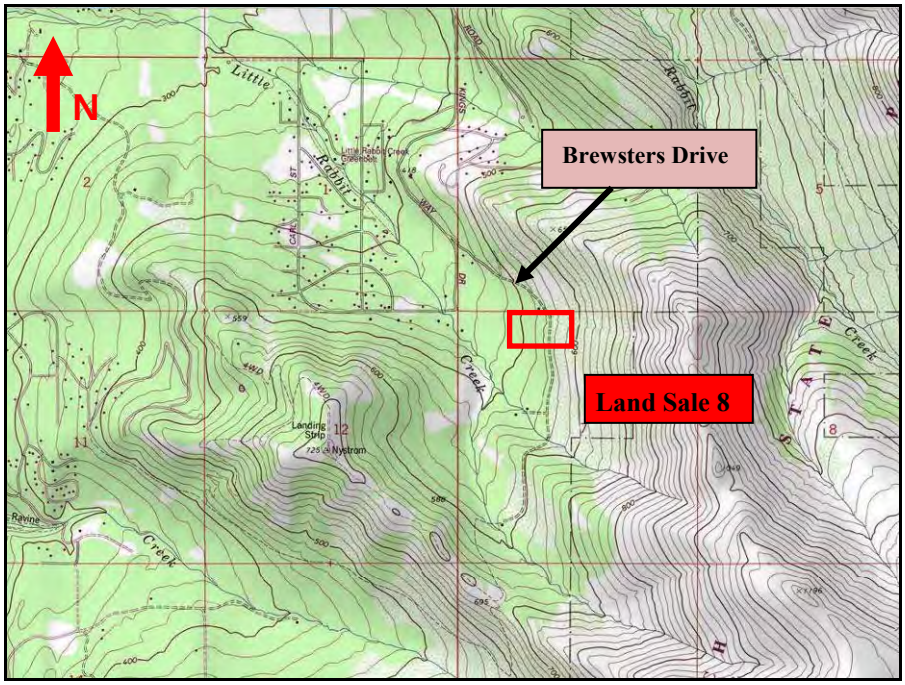
The parcel was listed off and on for several years, lastly listed in February 2014 for $169,900, before lowering to $149,000 securing an offer a few months later. The Broker stated that owner financing with $25,000 down did not affect the sale price.

Analysis **$149,000** ÷ **20.00 Acres** = **$7,450/Acre**

Comparable Land Sale 8



Portion of MTP T 11N, R 2W



National Geographic TOPO Map

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

Appraiser: Steve MacSwain, MAI

Member of Appraisal Institute - No. 5700

State of Alaska, Certified General Real Estate Appraiser - No. 42

Professional Experience: 1986 to Present - MacSwain Associates LLC

1976 to 1986 - Appraisal Company of Alaska - President

1970 to 1975 - Real Estate Services Corporation – Appraiser

1969 to 1970 - State of Alaska Department of Highways - Right of Way Agent

Real estate appraiser and consultant of all property types throughout Alaska including commercial, industrial, subdivisions and special-purpose properties. Appraisals have been performed for financing, leasing, insurance, condemnation, taxation, property damages, investment analysis, and buy-sell decisions. Appraisals include valuation of both real property and business enterprises. Professional experience totals 49 years. Life-long Alaskan resident of Alaskan Native descent.

Education: Bachelor of Business Administration, Finance (1969), University of Alaska Fairbanks

Appraisal Education: The following is a list of completed appraisal courses and seminars.

2018 – Uniform Standards of Professional Appraisal Practice – Update by the Appraisal Institute

2017 – Appraising Environmentally Contaminated Properties by the Appraisal Institute

2017 – Residential & Commercial Valuation of Solar by the Appraisal Institute

2017 – Right of Way Acquisition for Pipeline Projects by the International Right of Way Association

2015 – Litigation Appraising: Specialized Topics and Applications by the Appraisal Institute

2015 – Business Practices and Ethics by the Appraisal Institute

2013 – Complex Litigation Appraisal Case Studies by the Appraisal Institute

2013 – Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book) by the Appraisal Institute

2012 – Appraisal Curriculum Overview by the Appraisal Institute

2010 – Reviewing Appraisals in Eminent Domain by the International Right of Way Association

2010 – Commercial Appraisal Engagement and Review Seminar for Bankers and Appraisers by the Appraisal Institute

2009 – The Appraiser as an Expert Witness: Preparation and Testimony by the Appraisal Institute

2009 – Attacking and Defending an Appraisal in Litigation by Whitmer Education

2008 – Uniform Standards of Professional Appraisal Practice by the Appraisal Institute

2007 – Business Practices and Ethics by the Appraisal Institute

2007 – Eminent Domain Law for Right of Way Professionals by the International Right of Way Association

2007 – Appraisal Review for Federal Aid Programs by the International Right of Way Association

2007 – Analyzing Operating Expenses by the Appraisal Institute

2007 – Forecasting Revenue by the Appraisal Institute

2007 – Case Studies in Highest and Best Use by the Appraisal Institute

1969-2006: Numerous appraisal classes pertaining to principles, income capitalization, cost analysis, sale comparison approach, and highest and best use analysis by the Appraisal Institute, Society of Real Estate Appraisers, International Right-of-Way Association, International Association of Assessing Officers, and Marshall Valuation Service

Membership and Organizations: Member of Appraisal Institute – No. 5700, International Right of Way Association (IRWA), and Building Owners and Managers Association (BOMA)

Public Service: Past Chairman of the State Board of Certified Appraisers

Past Member of Board of Equalization, Municipality of Anchorage, National Experience Review Committee of the Appraisal Institute, and Regional Ethics and Counseling Panel of the Appraisal Institute

Past President of Alaska Chapter 57 of the Appraisal Institute

Significant Assignments:

- Appraised Pacific Spaceport Complex-Alaska (PSCA) land and facilities for Alaska Aerospace Corporation on Kodiak Island..
- Appraised proposed LNG Pipeline, a FERC-regulated 860-mile pipeline transporting liquefied natural gas.
- Appraised the Trans-Alaska Pipeline System, a FERC-regulated 800- pipeline that transports crude oil from Prudhoe Bay to Valdez, for TAPS ownership.
- Appraised remote lands (65,000± acres) owned by three Native corporations damaged by the *Selendang Ayu* grounding and subsequent oil spill.
- Appraised Calais Company, Inc., a real estate holding company consisting of 39 commercial parcels in Anchorage.
- Principal real estate consultant and expert witness for all lands affected by the *Exxon Valdez* oil spill. Project involved over 2,000,000 acres of remote land and nearly 2,000 private property owners.
- Appointed as a representative of a three-member panel that analyzed and valued over 1,000,000 acres and 8,000 parcels for the Mental Health Lands Settlement.
- Contract assessor for the North Slope Borough, Kodiak Island Borough, City of Nome, and the City of Valdez.
- Represented Seibu Alaska, Inc. (Alyeska Resort and Alyeska Prince Hotel) in preparing of their property tax appeal with the Municipality of Anchorage that resulted in a $65 million reduction in assessed value.
- Appraised submerged tideland parcels and wetlands parcels located in Womens Bay on Kodiak Island for the purpose of an exchange between Koniag, Inc. and U.S. Fish and Wildlife Service.
- Appraised Common Carrier Pipeline right-of-ways leased and operated by BP Transportation Alaska and ConocoPhillips Alaska.
- Appraised 3,600 acres consisting of the former Adak Naval Air Station and Submarine Base conveyed to the City of Adak and the State of Alaska.

Expert Witness Experience: Steve MacSwain, MAI is qualified as an expert witness in both the United States Federal Court and the State of Alaska Superior Court. Steve has testified as an expert witness in State and Federal courts. In addition, Steve has testified as expert witness in numerous Alaskan municipal tax courts, public hearings, and depositions on matters related to real property.

Arbitrator Experience: Appointed a Master by the Superior Court of Alaska and Municipality of Anchorage to serve as an arbitrator in determining just compensation.



License #: APRG42
Effective: 05/16/2017
Expires: 06/30/2019

STATE OF ALASKA
Department of Commerce, Community, and Economic Development
Division of Corporations, Business, and Professional Licensing
Real Estate Appraisers

Licensee: **STEVEN JAMES MACSWAIN**
License Type: **Certified General Real Estate Appraiser**
Status: **Active**

Commissioner: Chris Hladick

REVIEW APPRAISER'S DETERMINATION OF APPRAISAL COMPLIANCE WITH UASFLA & USPAP	PROJECT NAME: WINDY CORNER SEWARD HWY. MILEPOST 105-107
By	DOT & PF PROJECT NO. 0A3-1(34)/56631
Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	PROPOSED MATERIAL SITE 1 (STATE OF ALASKA) KVC FILE NO. 18-101C

Property Owner: Alaska Department of Natural Resources, Chugach State Park.

Appraised Property: The fee-simple interest in 19.6± acres of vacant land located along the Seward Highway between Mileposts 108.6 and 109 near Rainbow, Alaska. The real estate is roughly, legally described as being situated in Section 33, Township 11 North, Range 2 West, Seward Meridian, Alaska. **Note**: **The appraiser was instructed by his client, DOWL, Inc., to base the appraisal on the hypothetical condition that the 19.6 acres constituted a platted, legally marketable, stand-alone property rather than an unsubdivided portion of a 495,000-acre park**.

I, Franklin M. King, MAI, have completed a technical review of the August 10, 2018 appraisal report on the above-referenced property which was prepared, signed and certified by Steve MacSwain, MAI. My review was completed without a field inspection of the subject property or the comparable sale properties, *i.e*., a "desk" review was performed. The scope of my review included: 1) a check for proper appraisal methodology, analytical consistency, internal logic, and accuracy of mathematical calculations; 2) a check for compliance with the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP); and 3) a determination as to whether the appraisal constitutes an adequate basis for an offer of just compensation. I did not independently confirm the market data or subject property data presented in the appraisal report.

My five-page appraisal review report herein is intended for use only by my client, DOWL, Inc., as well as the State of Alaska and the National Park Service.

Mr. MacSwain utilized the sales comparison approach to value the subject land as if vacant and available for development to its highest and best use, which he determined to be as a recreation or home site. The results of his appraisal were communicated in an "Appraisal Report" as defined in the 2018-2019 edition of USPAP.

The fee simple interest in the land is to be acquired as part of the above-captioned road project. The appraiser's opinion of the **market value** of the **acquisition,** as of **August 8, 2018** was **$53,000.00 (Fifty Three Thousand Dollars)**.

Review Appraiser's Determination:

- ***In my opinion, the content, analyses, and conclusions in the appraisal report are in compliance with the current editions of* UASFLA *and* USPAP.**
- ***The market value opinion was based on an adequate quantity of relevant data and proper adjustments to the data were made where appropriate.***
- ***The appraisal methods and techniques used were appropriate for the valuation problem.***

- ***The $53,000 market value opinion for the property rights that are proposed to be acquired is appropriate and reasonable, given the data and analyses presented, and I recommend approval of the appraisal as an adequate basis for an offer of just compensation.***

JUST COMPENSATION ALLOCATION:

Land:	$53,000
Section Line/PLO Interests:	$ N/A
Improvements	$ N/A
Cost-to-Cure:	$ N/A
Damages:	$ N/A
Special Benefits:	$ N/A
TOTAL:	**$53,000**

Uneconomic Remnant? ☐ Yes ☑ No If yes, enter value: $ N/A and describe:

Reviewer Assumptions & Limiting Conditions:

- This appraisal review is based solely on data and information contained in the appraisal report that is the subject of this review.
- It is assumed that the data and information are factual and accurate,
- I reserve the right to consider any additional data or information that may subsequently become available and to revise the opinions and conclusions in this report if such data and information indicate the need for such a change.
- All of the assumptions and limiting conditions contained in the appraisal report that is the subject of this review are also conditions of this review unless otherwise stated.

Review Appraiser Certification:

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this appraisal review report are true and correct.
- The reported analyses, opinions, and conclusions in this review report are limited only by the assumptions and limiting conditions stated in this review report, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of the work under review and no personal interest with respect to the parties involved.
- In May of 2017, I reviewed an appraisal report on this same property, which was also prepared by Steve MacSwain, MAI, and dated April 26, 2017. I have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of the work under review within the three-year period immediately preceding acceptance of this current assignment.
- I have no bias with respect to the property that is the subject of the work under review or to the parties involved with this assignment.
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.

- My compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in this review or from its use.

- My compensation for completing this assignment is not contingent upon the development or reporting of predetermined assignment results or assignment results that favor the cause of the client, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal review.

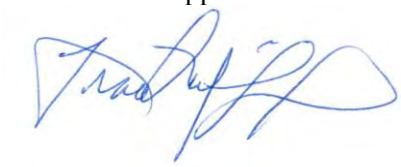
- My analyses, opinions, and conclusions were developed and this review report was prepared in conformity with the requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* as well as the Appraisal Institute's Code of Professional Ethics & Standards of Professional Appraisal Practice, which include the *Uniform Standards of Professional Appraisal Practice*.

- The use of this review report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

- I have not made a personal inspection of the subject of the work under review.

- No one provided significant appraisal, appraisal review, or appraisal consulting assistance to me during the review process.

- As of the date of this report, I have not completed the continuing education program of the Appraisal Institute. I have, however, completed the State of Alaska's continuing education requirements for real estate appraisers.



_____

Franklin M. King, MAI
Review Appraiser

Date of Appraisal Review Report: August 21, 2018

Alaska General Real Estate Appraiser
Certificate #APRG 18 — Expires 6/30/19

APPRAISAL REPORT CHECKLIST	PROJECT NAME: WINDY CORNER, SEWARD HIGHWAY MILEPOST 105-107
By	**DOT & PF PROJECT NO. 0A3-1(34)/56631**
Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	**PROPOSED MATERIAL SITE 1 (STATE OF ALASKA)** KVC FILE NO. 18-101C

Appraiser: Steve MacSwain, MAI **Review Appraiser:** Franklin M. King, MAI

☑ Special Instructions: The appraiser was instructed by his client, DOWL, Inc., to base the appraisal on the hypothetical condition that the 19.6 acres constituted a platted, legally marketable, stand-alone property rather than an unsubdivided portion of a 495,000-acre park.

Note: If item is not applicable, write "N/A" by the box for that item

☑ Current ROW Plans
☑ Appraisal matches plans
☑ Narrative Appraisal Summary Completed
☑ Certificate of Appraisal signed
☑ Scope of appraisal, Purpose and function
☑ Assumptions & Limiting Conditions
☑ Area & Neighborhood Analysis
☑ Land area and shape
☑ Access/Frontage
☑ Topography
☑ Soils
☑ Utilities
☑ Rights to be acquired
☐ Easements and encroachments shown
☑ Present use
☑ Zoning / Restrictions (Before & After)
☑ Known Hazards: Environmental, Flood
N/A Improvements described + sketch + shown on plat
N/A Specialty items or Tenant owned improvements
☑ Assessed Value/tax trends
☑ Plat/Plot Plan/Parcel Map
☑ Photos: land & improvements
☑ Ten-Year Sales History
☑ Highest and best use
☑ Approaches: Sales Comparison
☑ Support for Adjustments or Assumptions
☑ Value of the whole
☑ Conclusion and, if applicable, reconciliation
☑ Value of acquisition & allocation
☑ Remainder as a part of the whole
☑ Value reasonable and consistent
☐ Owner contact verification
N/A Title Report and Legal Description

Comparable Sales data should include:
☑ Comparable Sales map
☑ Size
☑ Shape
☑ Topography
☑ Utilities
☑ Soils
☑ Use / Zoning
☑ Access and Grade relationship
N/A Improvement allocation
☑ Photographs
☑ Verification by the appraiser

After Value: Has the appraiser considered
N/A Highest & Best Use change
N/A Access/Frontage issues
N/A Area/Shape
N/A Elevation or Drainage change
N/A Improvements
N/A Approaches: Sales Comparison
N/A Support for Adjustments
N/A Support for Damages/Special Benefits/Cost-to-cure

Issues: N/A

License #: APRG18
Effective: 06/06/2017
Expires: 06/30/2019

STATE OF ALASKA

Department of Commerce, Community, and Economic Development

Division of Corporations, Business, and Professional Licensing

Real Estate Appraisers

Licensee: **FRANKLIN M. KING**

License Type: **Certified General Real Estate Appraiser**

Status: **Active**

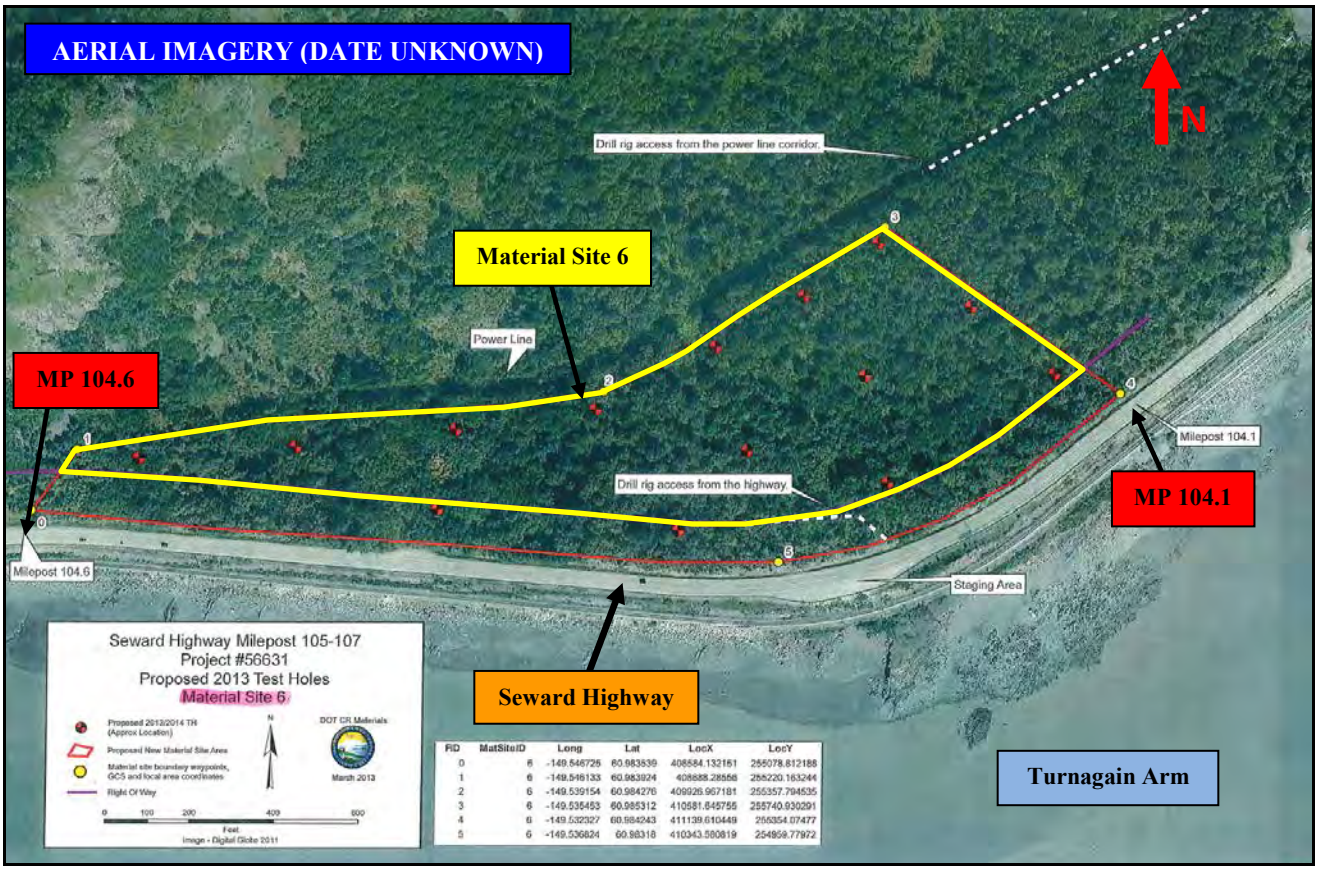
Commissioner: Chris Hladick

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

APPRAISAL REPORT

Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
"Material Site 6" – Milepost 104.1 to 104.6 Seward Highway, Alaska



Effective Appraisal Date: August 8, 2018 File No. 18-3182(6)

Submitted To:

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

MacSwain Associates LLC

4401 Business Park Blvd., Suite 22
Anchorage, Alaska 99503
Telephone: 907-561-1965
Facsimile: 907-561-1955
s.macswain @macswain.com

August 10, 2018

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

Re: Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
"Material Site 6" – Milepost 108.6 to 109 Seward Highway, Alaska

Dear Ms. Mueller:

We have prepared an *Appraisal Report* that analyzes the above-referenced property affected by the Windy Corner Seward Highway Project. The purpose of the appraisal is to estimate the market value of property rights acquired pertaining to the full acquisition of a 15.8-acre parcel, as of August 8, 2018 (effective date of value). The property rights appraised is the fee simple interest. To summarize, the appraised property is a 15.8-acre parcel consisting of steep sloping bedrock on the north side of the Seward Highway right of way, between Anchorage and Indian, Alaska, within the boundaries of Chugach State Park. Importantly, as instructed by DOWL, Inc., analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 6" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

We note that MacSwain Associates LLC appraised "Material Site 6" effective April 13, 2017, for the same client, intended use, and intended users. Our opinion of value of the property rights acquired was $105,000. Although we uncovered and analyzed new sale data during this new assignment, our analysis resulted in the same opinion of value.

The appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP). Since UASFLA states an estimate of market value tied to exposure and marketing time is inappropriate and requires exclusion from the appraisal report, we invoke the jurisdictional exception rule permitted in USPAP.[1] This departure represents the only conflict between UASFLA and USPAP.

[1] Standard Rule 1-2(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their market value opinion. Section D-1b of UASFLA provides legal authority for invoking the Jurisdictional Rule.

Based on the data, reasoning, and analysis contained in the appraisal report, it is our opinion the market value of the property rights acquired, as of August 8, 2018, is as follows.

Market Value of Acquisition	**$105,000**

We direct your attention to the Assumptions and Limiting Conditions on Page 6 for an explanation of the restrictions and limitations of the report. If you have questions regarding our analysis or conclusion, please contact our office.

Respectfully submitted,



Steve MacSwain, MAI
State of Alaska Certificate No. 42

Table of Contents

Title Page

Transmittal Letter **1**

Table of Contents **3**

Appraiser Certification **4**

Assumptions and Limiting Conditions **6**

Appraisal Summary **7**

Chapter 1: Premise of the Appraisal **8**

Chapter 2: Neighborhood Analysis **14**

Chapter 3: Property Description and Analysis **17**
Property Photographs **21**
Property Photograph Location Maps **24**

Chapter 4: Highest and Best Use Analysis **25**

Chapter 5: Property Valuation – Before Acquisition **28**

Chapter 6: Property Valuation – After Acquisition **39**

Chapter 7: Market Value of Acquisition **40**

Addendum
Comparable Land Sales
Appraiser Qualifications

Appraiser Certification

The undersigned certifies that to the best of their knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and legal instructions, and are the personal, unbiased professional analysis, opinions, and conclusions of the appraisers.
- The appraisers have no present or prospective interest in the property appraised and no personal interest or bias with respect to the parties involved.
- The compensation received by the appraisers for the appraisal is not contingent on the analyses, opinions, or conclusions reached or reported.
- The appraisal was made and the appraisal report prepared in conformity with the *Uniform Appraisal Standards For Federal Land Acquisitions* (UASFLA).
- The appraisal was made and the appraisal report prepared in conformity with Appraisal Foundation's *Uniform Standards of Professional Appraisal Practice* (USPAP), except to the extent that the *Appraisal Standards For Federal Land Acquisitions* (UASFLA) required invocation of USPAP's Jurisdictional Exception Rule, as described in Section D-1 of the *Appraisal Standards For Federal Land Acquisitions*.
- The appraisers have made a personal inspection of the property appraised. Property owner contact information was not provided to the appraisers.
- Jim Dahl provided significant professional assistance to the appraiser.
- The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of Professional Appraisal Practice of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- As of the date of this report, Steve MacSwain, MAI has completed the continuing education program of the Appraisal Institute.
- As of the date of this report, Steve MacSwain, MAI is a certified General Real Estate Appraiser in the State of Alaska, and has completed the education requirements through June 2019.

- MacSwain Associates LLC appraised the subject parcel effective April 13, 2017, for the same client, intended use, and intended users. We have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

- Our opinion of market value of the property rights acquired, as of August 8, 2018, is $105,000.



Steve MacSwain, MAI
State of Alaska Certificate No. 42

8/10/18
Date

Assumptions and Limiting Conditions

This appraisal report is subject to the following **Hypothetical Condition**. Use of this hypothetical condition might have affected the assignment results.

- We assume the parcel referred to as "Material Site 6" is a surveyed, platted, and legally marketable, stand-alone property.

This appraisal report is subject to the following Assumptions and Limiting Conditions.

- We assume no responsibility for the legal descriptions provided or for other matters pertaining to legal or title considerations. We assume title to the appraised property is marketable unless otherwise stated.
- We appraise the property free and clear of all liens or encumbrances unless otherwise stated.
- We believe the information furnished by others is reliable, but we do not guarantee its accuracy.
- We assume all engineering studies are correct. We believe all maps, surveys, and other illustrative material are accurate. We include these exhibits only to help the reader visualize the appraised property.
- We assume there are no hidden or unapparent conditions that render the property more or less valuable. We assume no responsibility for such conditions or for obtaining the engineering studies that may be required to discover them.
- We assume the appraised property is in full compliance with all applicable federal, state, and local environmental regulations and laws unless the lack of compliance is stated, described, and considered in the appraisal report.
- Possession of this report, or a copy thereof, does not carry with it the right of publication.
- The appraisers are not required to give consultation, testimony, or attend court proceedings with reference to the subject property without prior arrangements.
- The appraisers acknowledge the appraisal report may be available for public review upon request. However, this right does not allow dissemination to the public through advertising, public relations, news, sales, or other media without prior written consent and approval from the appraisers.
- We did not observe any hazardous material or other type of environmental contamination that may affect the appraised property. Furthermore, we do not have any knowledge that such substances exist. However, the presence of environmental conditions may impair property value. Therefore, we urge the client to retain an environmental assessment for discovery and evaluation.

Appraisal Summary

Property Type:	Vacant land
Purpose of Appraisal:	Provide market value opinion
Property Rights Appraised:	Fee simple interest
Legal Description:	Based on a review of the available information, the appraised acquisition is located within Section 6, Township 10 North, Range 1 West, and Section 1, Township 10 North, Range 2 West Seward Meridian.
Property Owner:	State of Alaska Department of Natural Resources, Chugach State Park
Tax Parcel No:	N/A (exempt from taxation)
Location/Neighborhood:	Located on the north side of the Seward Highway right of way from about Milepost 104.1 to 104.6, near Indian, Alaska; within the boundaries of Chugach State Park
Land Area:	15.8± acres or 688,248± square feet
Access:	We presume legal access from Seward Highway
Topography:	Above-grade, undulating topography at highway right of way; steep ascending slope to the north
Utility Service:	Electricity and telephone at northern boundary
Easements and Restrictions:	None identified
Zoning:	Located outside any zoning authority
Improvement Description:	None
Highest and Best Use:	Recreation or residential home site
Environmental Condition:	No evidence of adverse environmental conditions observed
Property Inspection Date:	August 8, 2018
Effective Date of Appraisal:	August 8, 2018
Report Date:	August 10, 2018

Market Value of Acquisition: $105,000 ($6,646/Acre)

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 6" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

Chapter 1: Premise of the Appraisal

Overview

We have prepared an *Appraisal Report* that analyzes a 15.8-acre parcel that abuts the north side of the Seward Highway right of way, within the boundaries of Chugach State Park. Referred to as "Material Site 6," the property is located between Milepost 104.1 and 104.6 of the Seward Highway, near Indian, Alaska. The proposed full acquisition is necessary in conjunction with construction of a road improvement project. This appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and *Uniform Standards of Professional Appraisal Practice* (USPAP).

Project and Acquisition Summary

Project Summary: The project intent is to address traffic safety concerns in the vicinity of Windy Corner by realigning the highway and the railroad to meet current design standards. The new alignment will also create space for new roadside recreational facilities and wildlife viewing areas (including parking and walkways) with acceleration and deceleration lanes for turning traffic.

Project Location Map



Specifically, the project, located within the Municipality of Anchorage between Indian and Rainbow, involves realigning and constructing a divided two-lane highway from Milepost 105 to 107, and relocating and realigning the Alaska Railroad Corporation (ARRC) tracks. The space created by the road and rail realignment will accommodate improved parking/pullout facilities on both sides of the highway with new auxiliary lanes to accommodate traffic entering and exiting the highway.

Acquisition Summary: The analysis and valuation reflects the full acquisition of vacant land.

Purpose of Appraisal	The purpose of the appraisal is to form a market value opinion for a potential voluntary acquisition adhering to UASFLA and USPAP.
Client	Our client is DOWL, Inc.
Intended Use of the Appraisal Report	The intended use of the report is to assist with compensating the property owner for the property rights acquired. The appraisal report is not intended for any other use.
Intended Users of the Appraisal Report	The intended users of the report are DOWL, Inc., the State of Alaska, and the National Park Service.
Date of Property Inspection	August 8, 2018
Effective Date of Appraisal	The effective date of appraisal is August 8, 2018, which represents the property inspection date.
Report Date	August 10, 2018

Definition of Market Value

The definition of market value is the basis of our analysis and valuation of the appraised land. *Market value* is defined as follows.

Market value is the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of value, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property.[3]

Property Rights Appraised

The property rights appraised is the *fee simple interest, which* is defined as follows.

Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.[4]

Property Owner

A title report was requested from the client, but not provided. Based on review of public records, the appraised property is owned by the State of Alaska Department of Natural Resources, Chugach State Park.

Legal Description

We requested a preliminary title report, but we did not receive this document. However, we did receive partial title abstracts from DOWL, Inc. staff that included court decisions, Patents, Recorder's Office document displays and case abstracts, and Master Title Plats pertaining to the appraised property. Although we rely upon this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

Based on a review of the available information, the appraised acquisition is located within Section 6, Township 10 North, Range 1 West, and Section 1, Township 10 North, Range 2 West Seward Meridian.

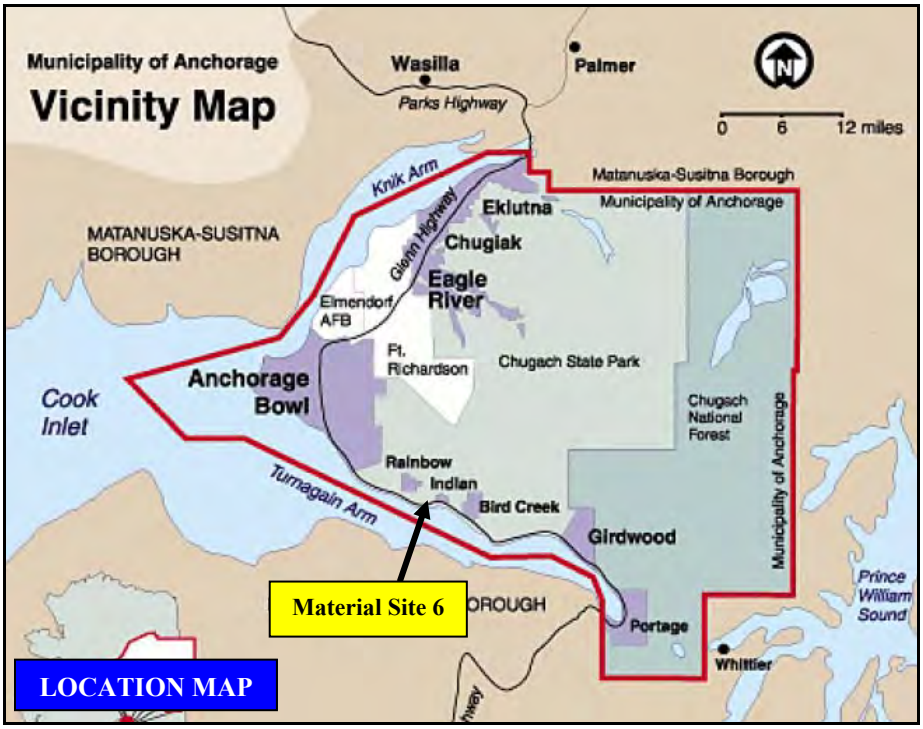
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[3] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 10.

[4] *Appraisal of Real Estate*, Fourteenth Edition (2013), by the Appraisal Institute, p. 5.

Identification of Real Estate Appraised

Property Type:	Vacant land
Neighborhood:	Turnagain Arm
Location:	Located on the north side of the Seward Highway right of way from about Milepost 104.1 to 104.6, near Indian, Alaska; within the boundaries of Chugach State Park



Property History

Property and Occupancy/Use History: The subject parcel is publicly owned land located within the boundaries of Chugach State Park. There were no signs of development on the property during the inspection.

10-Year Property Sale History: Review of public records indicates no property sales in the past 10-year period. The subject parcel is part of a large swath of lands that were conveyed to the State of Alaska by a Land Patent in 2004.

Rental History: There is no record of rental or lease history for the subject parcel.

Assessed Value and Real Estate Taxes

The appraised parcel is part of the Chugach State Park, and not subject to taxation.

Larger Parcel Determination

We determined that the larger parcel is the 15.8-acre acquisition parcel as described in this report. Explanation of this determination is located in the highest and best use analysis section of this report.

Hypothetical Condition

As instructed by DOWL, Inc., analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 6" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

Appraisal Methodology

Per UASFLA, we employ the before and after methodology to estimate the market value of the acquisition. First, we value the property before the acquisition; then we value the property that remains after the acquisition. The difference between the before and after values is the market value of the acquisition.

We utilize the sales comparison approach to estimate the market value of the property rights acquired, because neither the cost nor the income capitalization approaches provide meaningful analysis for vacant land similar to the subject. Additionally, we found sufficient land sale data to develop our opinion of value. Comparable land sale data was obtained from private parties, real estate Brokers/agents, market participants, appraisers, and company files.

Scope of the Appraisal

Jim Dahl preformed the most current inspection of the appraised property, and assisted Steve MacSwain, MAI with data collection and analysis. In addition, Steve MacSwain, MAI administered the appraisal process, reviewed draft appraisals, and concluded with an opinion of value. The scope of the appraisal is summarized as follows.

- ➔ Steve MacSwain and Jim Dahl inspected the subject property on August 8, 2018, and prior dates;
- ➔ Reviewed information provided by DOWL, Inc. including parcel and project mapping;
- ➔ Reviewed Municipality of Anchorage (MOA) mapping;

- Reviewed Municipal Code pertaining to zoning;
- Reviewed *Turnagain Arm Comprehensive Plan;*
- Observed the land use pattern of the Turnagain Arm market district;
- Collected and analyzed economic data pertaining to the Turnagain Arm market district;
- Interviewed Brokers that list Turnagain Arm district properties or specialize in marketing these properties;
- Reviewed USGS topographical maps and aerial mapping;
- Performed a land use analysis;
- Collected and analyzed comparable land sales;
- Confirmed land sales with the buyer, seller, Broker, or other knowledgeable third party; and
- Relied upon sales comparison approach to estimate market value.

Exposure Time

We invoke the Jurisdictional Exception Rule permitted in USPAP to comply with Section 9 of UASFLA that states an estimate of market value linked to an exposure or marketing time must be excluded from the appraisal report.[5]

Statement of Competency

MacSwain Associates LLC has completed numerous appraisals of vacant tracts of land throughout Alaska, including along the Seward Highway from Anchorage to Girdwood. Representative clients include lending institutions, government agencies, property owners, property managers, and private parties. A summary of Steve MacSwain, MAI's experience and professional qualifications are located in the addenda. Steve MacSwain, MAI has the knowledge and experience required by the competency provision of USPAP to complete this appraisal assignment credibly.

Summary of Appraisal Problem

There were no special appraisal problems encountered. Although sale activity is scarce, we analyzed sufficient data to develop a market-supported conclusion. However, the scarcity of sales requires use of qualitative adjustment techniques rather than paired analysis that measures differences by quantification. Despite these deficiencies, we performed a reliable analysis that concludes with a credible estimate of market value.

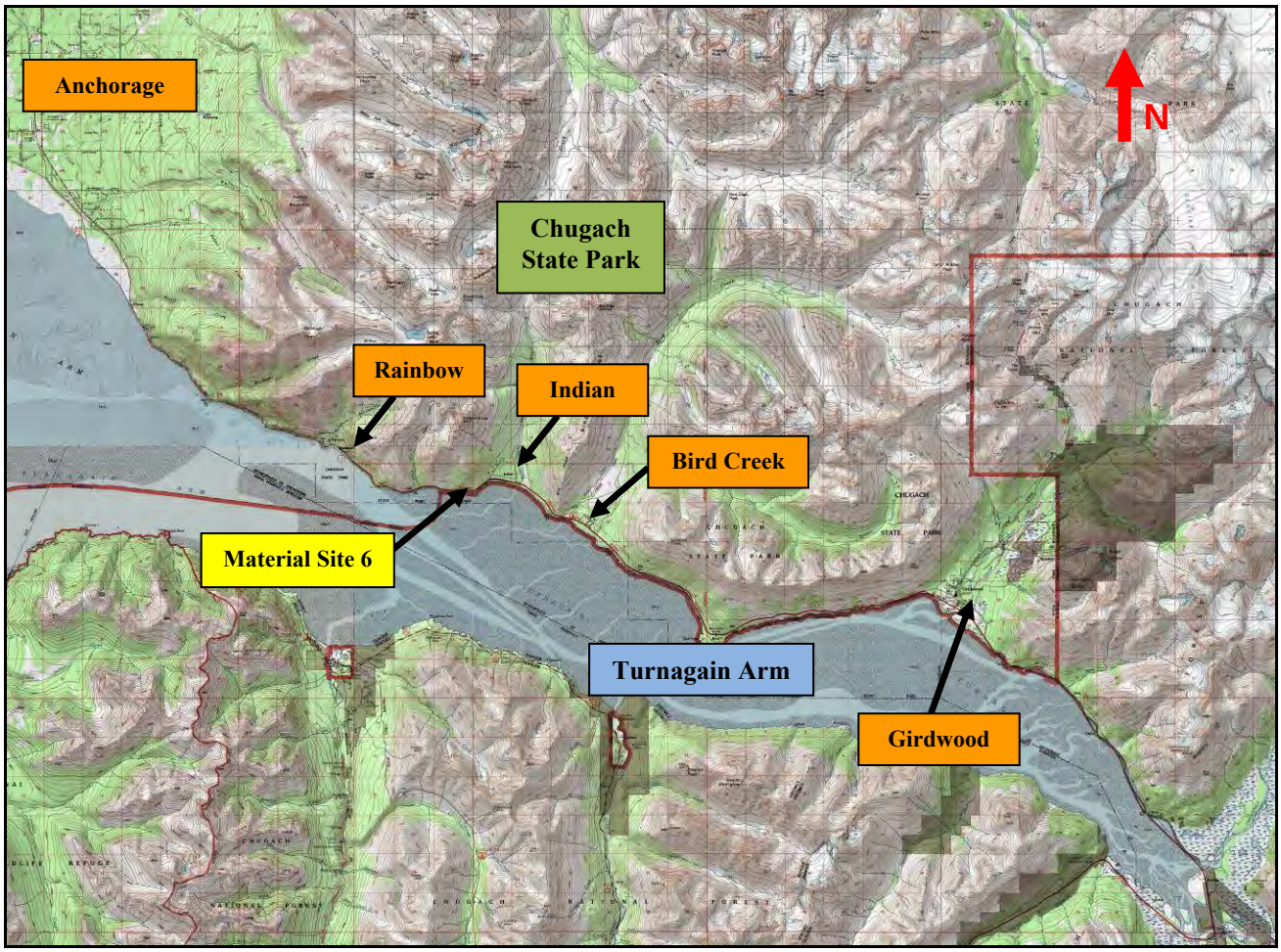
[5] Since Standard Rule 1-1(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their opinion of value, we invoke the Jurisdictional Exception Rule that permits departure.

Chapter 2: Neighborhood Analysis

Overview

The neighborhood is the Turnagain Arm District of the Municipality of Anchorage. The reader is referred to the maps below and on following pages that illustrate neighborhood boundaries.

Location Map

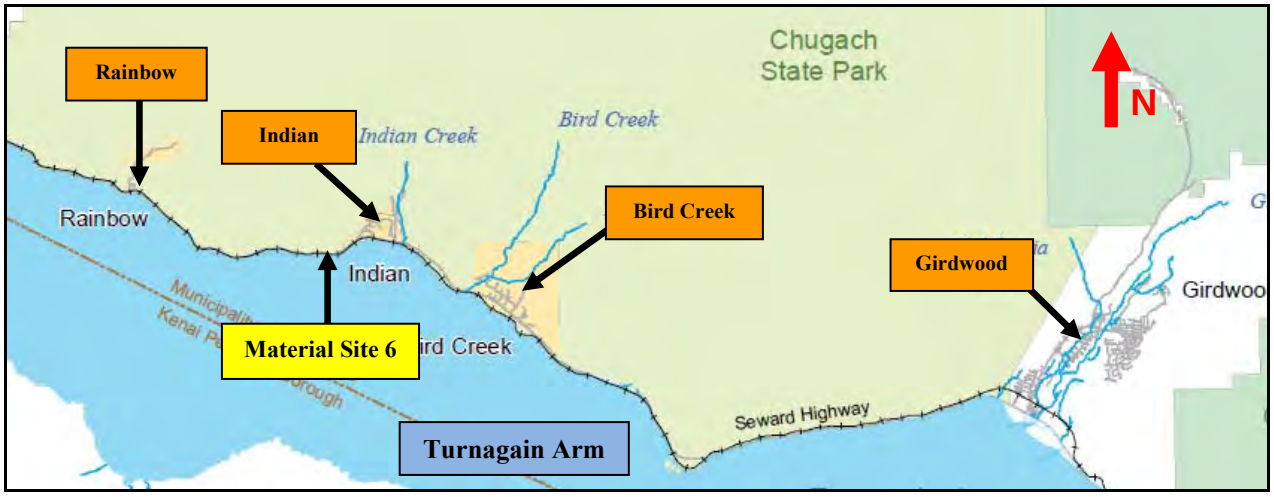


General Neighborhood

The general neighborhood is within the Turnagain Arm district and the area along the Seward Highway from Girdwood to Anchorage. The general neighborhood also includes the communities of Rainbow, Indian, and Bird Creek. According to the Municipality, the neighborhood has a population range from 350 to 375 residents. The predominate development pattern in the neighborhood is residential. Commercial development fronts the Seward Highway corridor and is located in Indian

and Bird Creek. Commercial development includes service and retail use such as restaurants, gas stations, automobile repair, and lodging.

Neighborhood Map



According to the Turnagain Arm Comprehensive Plan, Rainbow Valley developed under unusual circumstances with a group of landowners sharing plots of land for their individual homes, without actual platted lot boundaries. According to the homeowner's association, no vacant private land exists in the valley. All of the useable land is developed with rural residential homes and associated accessory use structures.

The Indian community includes a combination of large-lot rural residential developments with some scattered commercial uses along the Seward Highway and up-valley, including a small commercial nursery and Indian Valley meats, a large-scale meat processing facility. The east side of the valley includes a row of older homestead residences, some with renter cabins and two-family developments. Chugach Park View Subdivision in Indian is the most recent residential subdivision. The 35-lot subdivision is located between Indian Valley Road and Ocean View Road and offers large lots averaging 2.5± acres, paved streets, and partial Turnagain Arm and mountain views. The neighborhood offers various access points to Chugach State Park.

Bird Creek developed much like Indian, dominated by larger lot rural type residential development, with some scattered commercial uses along the highway and some small-scale commercial businesses within the residential area. A telecommunications facility is located along the highway and an automobile maintenance facility operates near the site's east end. A sawmill operates within the residential lots as a permitted use.

Chugach State Park contains approximately 495,000 acres of land and is one of the four largest state parks in the United States. The park's westernmost boundary lies in the western foothills of the Chugach Mountain Range and is a mere seven miles to the east of downtown Anchorage. The park is further defined by the Knik Arm on the north, Turnagain Arm on the south, and Upper and Lower Lake George and Chugach National Forest on the east.

Additional recreation opportunities in the neighborhood include State of Alaska campgrounds, seasonal salmon fishing at Bird Creek, and the "Bird to Girdwood" paved bike trail.

Summary

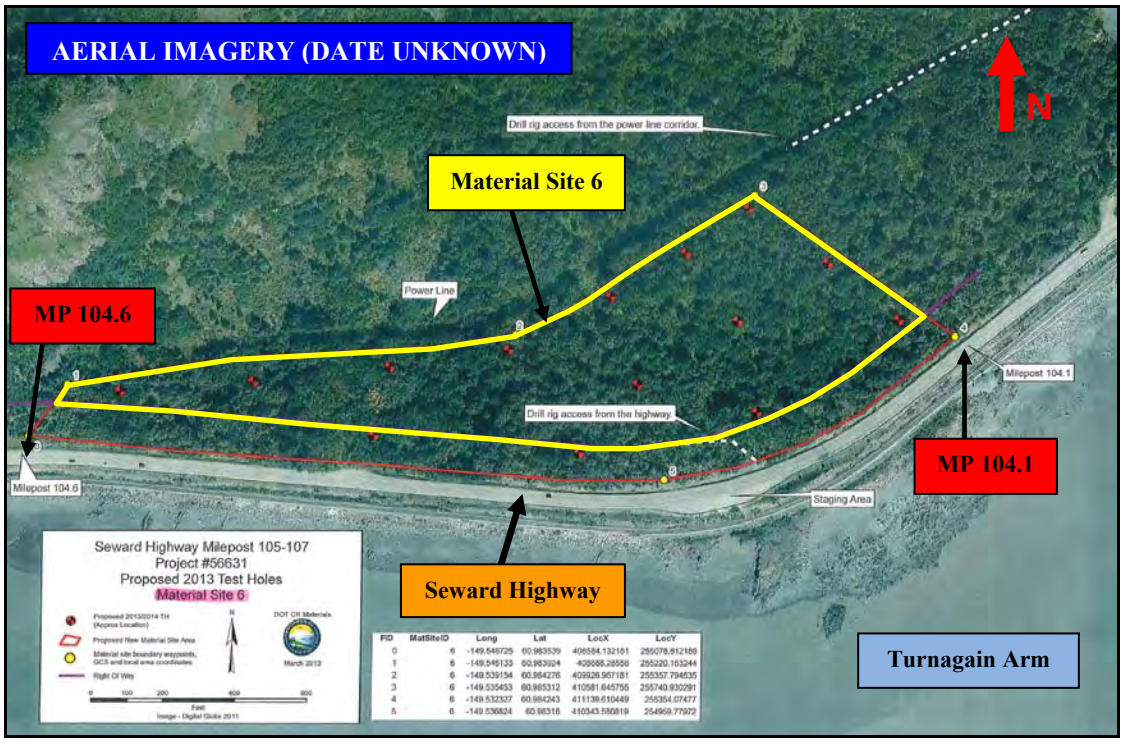
The Turnagain Arm district is an established community between Anchorage and Girdwood. Development in the district centers in the Indian, Bird Creek, and Girdwood. The Seward Highway and adjacent railroad bisects the area and is the primary arterial providing access to/from Anchorage to the Kenai Peninsula to the south.

Chapter 3: Property Description and Analysis

Overview

Our appraisal inspection and available mapping are the principal data sources used to describe the appraised property. We requested a preliminary title report, but we did not receive this document. However, we did receive title abstracts from DOWL, Inc. staff that included deeds, easements, Recorder's Office document displays, Master Title Plats, and survey data pertaining to the appraised property. Although we rely upon this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

The subject acquisition consists of a 15.8-acre parcel located on the north side of the Seward Highway right of way from about Milepost 104.1 to 104.6, near Indian, Alaska. We use a tabular-type format to describe the physical character of the parcel. The most important physical factor that affects land use potential is topography and bedrock soil geology. We discuss zoning and other regulatory requirements that affect land use potential after describing the parcel. Photographs that follow provide a visual overview while inserted exhibits help illustrate the physical character of the parcel.



Land Description

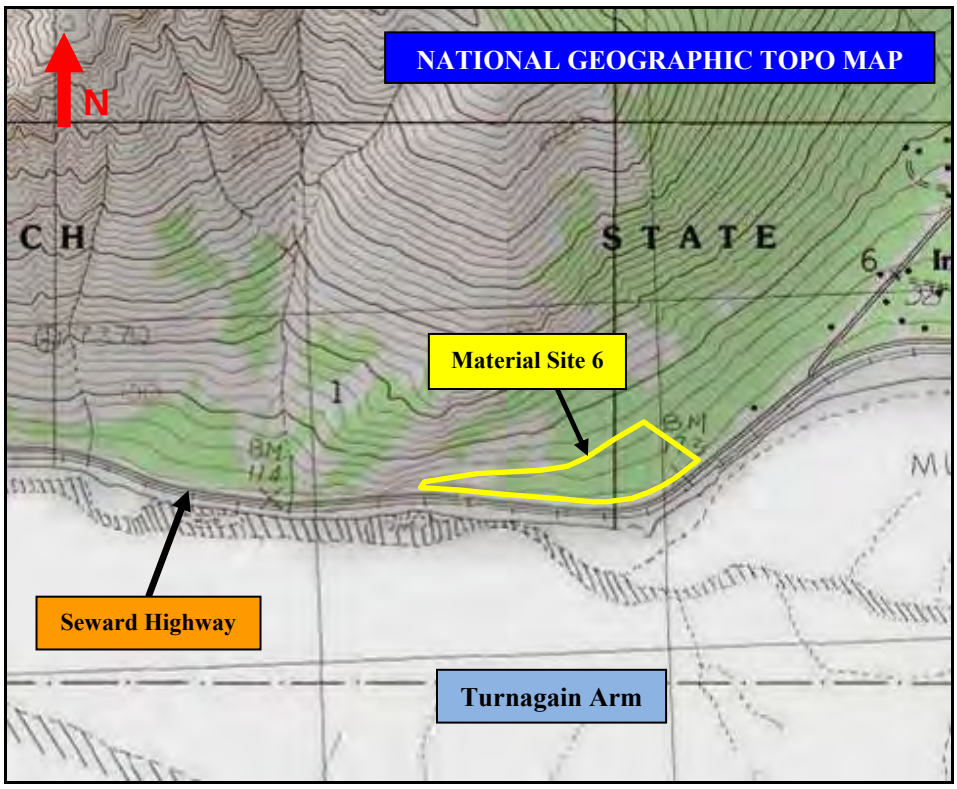
Overview: The entirety of highway frontage has an above-grade profile with undulating topography to steep ascending slope. The vast majority of the parcel is heavily treed. We observed areas suitable for development.

Present Use: Vacant land

Land Area: 15.8± acres or 688,248± square feet

Land Configuration: Irregular

Access: We presume legal access from Seward Highway on the south side of the parcel; 2,640± feet of highway right of way frontage



Topography: undulating topography along highway frontage to steep ascending slope to the north

Soils: Thin layer of organics over bedrock

Vegetation: Brush and grasses, alder, willow, cottonwood, birch

Public Utilities: Electricity and telephone near the northern boundary

Easements: None identified

Environmental Assessment: No evidence of adverse environmental conditions observed during the property inspection

Chugach State Park Land Use Regulations

The Land and Water Conservation Fund (LWCF) is a 50/50 Federal matching grant program that was used in the Chugach State Park to fund the acquisition of land including the subject parcel. The program requires that the property be retained and used solely for outdoor recreation in perpetuity. Therefore, the subject property may not be converted to anything other than public outdoor recreation uses without the prior review and approval by the Secretary of the U.S. Department of the Interior. Actions that may represent conversion of use include installation of cell towers, aboveground utilities, roads for uses other than recreation, creation of indoor recreation facilities, or private encroachments such as driveways.[6]

MOA Zoning Regulations

The subject acquisition parcel is located within the Chugach State Park, which is outside a zoning district. If the parcel was in the private sector, it would be zoned Turnagain Arm (TA) District. The purpose of this district is to govern the land uses for the area known as Turnagain Arm south of Potter Marsh, including but not limited to Rainbow, Indian, Bird Creek, and Portage/Twenty Mile. Permitted uses and densities within the TA District are to conform to the land use plan map, polices, land use definitions, and residential densities of the adopted *Turnagain Arm Comprehensive Plan*.[7] Permitted uses include the following:

- Residential and accessory uses and structures that conform to the *Turnagain Arm Comprehensive Plan*
- Commercial structures under 4,000 square feet in gross building area in areas designated "Turnagain Mixed Use" in the *Turnagain Arm Comprehensive Plan*
- Non-structural commercial uses occupying an area of 14,400 square feet or less in areas designated "Turnagain Mixed Use" in the *Turnagain Arm Comprehensive Plan*
- Industrial uses and structures in areas designated "industrial" in the *Turnagain Arm Comprehensive Plan*
- Institutional uses and structures under 4,000 square feet of gross building area in areas designated "community facility" in the *Turnagain Arm Comprehensive Plan*
- Traditional homestead uses and activities in areas designated "rural homestead" in the *Turnagain Arm Comprehensive Plan*

[6] Chugach State Park Management Plan (May 2011), Chapter 4: Park Use and Issues, pp. 31-32.

[7] AMC Title 21: Land Use Planning 4-24.

Conditional uses, which require a public review process, may be allowed provided they conform to the goals and policies of the *Turnagain Arm Comprehensive Plan*; protects the unique scenic and environmental features of the area; and minimizes impacts to adjacent properties, particularly those adjacent properties in a different land use category.

The subject parcel is closest to the Indian Land Use Plan, which includes low-density residential, mixed use and community uses. Single Family (one dwelling per 2.5 acres), Turnagain Mixed Use (TMU), and Community Facility are all uses included in lands fronting the Seward Highway. Single Family or TMU are the most probable uses for the subject parcel. The TMU land use category allows a mix of commercial and residential uses along the Seward Highway frontage.

Subject Property Photographs

On Pages 21 through 23 are photographs taken by Jim Dahl on August 8, 2018, with a map depicting location of photographs on Page 24.

Property Photographs

Taken By: Jim Dahl August 8, 2018



Easterly view toward western portion of subject from Seward Highway



Northwesterly view of central portion of subject

Property Photographs

Taken By: Jim Dahl August 8, 2018



Northeasterly view of central portion of subject and Seward Highway frontage



Westerly view of central portion of subject from Seward Highway

Property Photographs

Taken By: Jim Dahl August 8, 2018



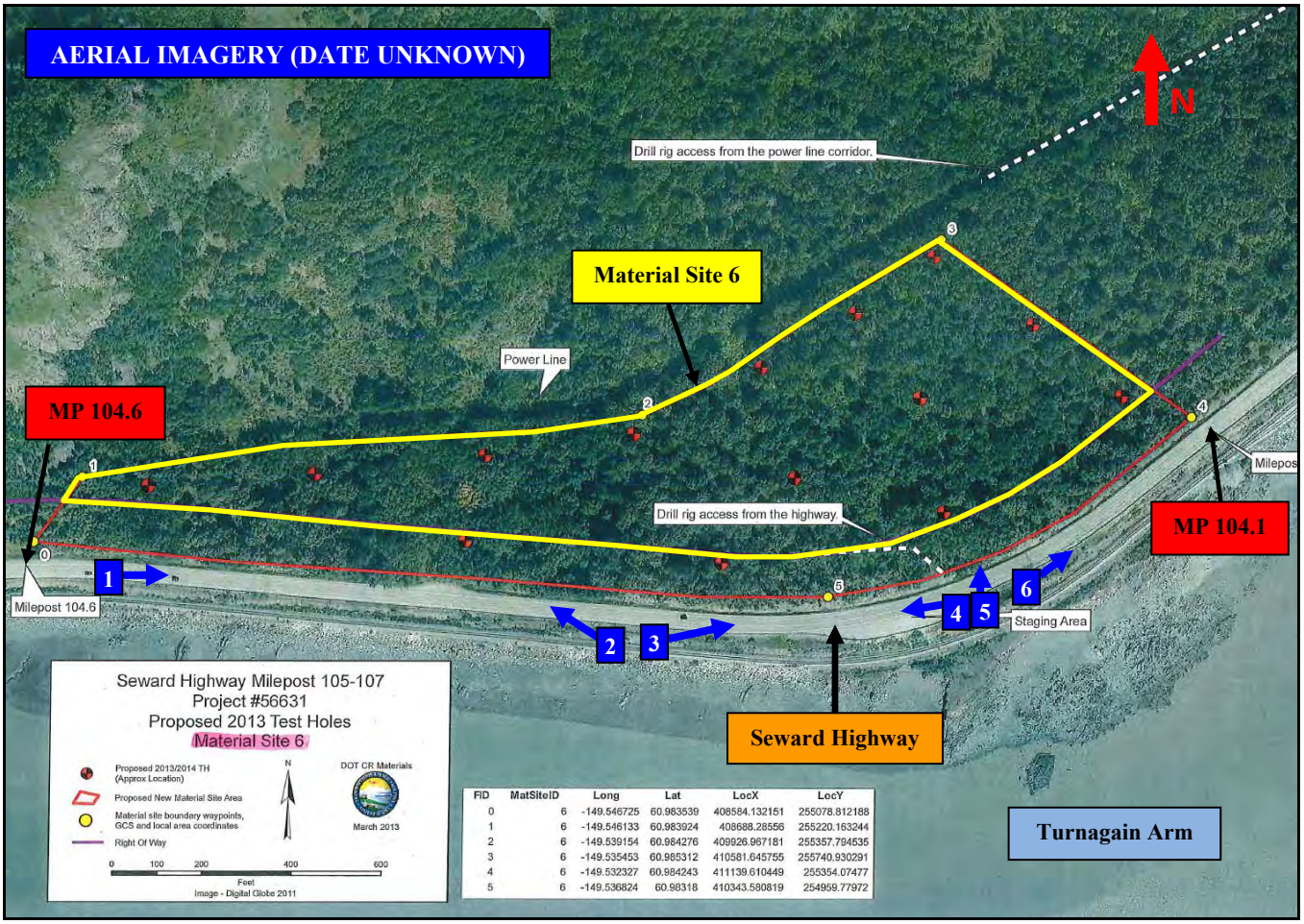
Northerly view of eastern portion of subject from Seward Highway



Northeasterly view of easternmost portion of subject

Property Photograph Location Map

Aerial Maps Showing Photo Location and Direction



Chapter 4: Highest and Best Use Analysis

Overview

Highest and best use is a market-driven concept rather than a subjective conclusion based on the experience of the appraiser or a property owner's wishes. Economic incentive is the motivation that has a market-effect on the productivity or profitability of the land. Our market value estimate relies upon the following definition of *highest and best use*.

The highest and most profitable use for which the property is adaptable and needed or likely to be needed in the reasonably near future.[8]

The criteria for analyzing potential use are legally permissible, physically possible, financially feasible, and the degree of profitability. Importantly, USAFLA requires that the estimate of highest and best use must be an economic use. A highest and best use analysis follows.

Highest and Best Use Analysis

Physically Possible/Legally Permissible: The subject is a 15.8-acre parcel located the north side of the Seward Highway right of way within Chugach State Park. The principal legal constraint affecting land use potential is the MOA zoning ordinance, which designates the subject parcel Turnagain Arm (TA) District if in the private sector. This zoning district references the Turnagain Arm Comprehensive Plan for land use regulations. The parcel is nearest to the Indian Land Use Area, with Single Family (one dwelling per 2.5 acres) or Turnagain Mixed Use (TMU) are the most probable uses for the subject parcel. The TMU land use category allows a mix of commercial and residential uses along the Seward Highway frontage.

We observed undulating topography near the Seward Highway right of way, then sloping steeply to the north. The bedrock limits development potential due to the high cost of developing access, as well as septic systems. However, the extensive ocean and mountain views are a desirable amenity. We determined the physical features of the parcel benefit recreation or residential use, though commercial is a secondary alternative. Essentially, residential, recreation, and commercial are legally permissible and physically possible uses of the subject parcel.

Financially Feasible: Residential, recreation, and commercial are the uses of the subject parcel determined to be physically possible and legally permissible. Recreation is most likely, though residential home site is a

[8] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 22.

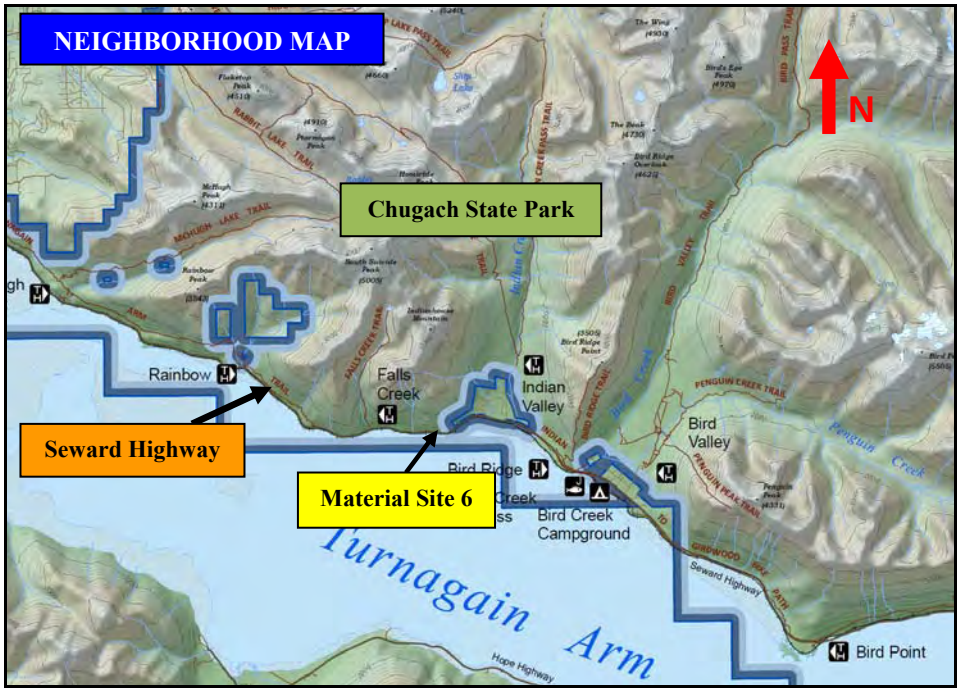
likely alternative. We also analyzed the economic merits of subdividing the subject into smaller parcels; although subdivision is legal, we determined the investment risk exceeds potential income benefits due to physical restraints. Due to the high costs of development, commercial use is not feasible at this time. By default, a recreation cabin or single-family home site is the most probable financially feasible uses of the subject parcel.

Degree of Profitability: Available data indicates price behavior does not differ significantly for Turnagain Arm District land used for single-family home sites or recreation lands. Thus, we determined that the degree of profitability is similar for either type of land use. Therefore, we conclude that the highest and best use of the subject parcel is recreation or residential home site.

Highest and Best Use	**Recreation or Residential Home Site**

Larger Parcel Consideration

Determining the larger parcel is a key to the appraisal problem. The three criteria for determining the larger parcel are unity of ownership, contiguity, and unity of use. Fundamental to the unity of use analysis is the principles of substitution, demand, and applied economics. Ignoring these principles will compromise the credibility of the larger parcel analysis.



The acquired parcel contains 15.8± acres, which we assume is a surveyed, platted, and legally marketable, stand-alone property. As stated, USAFLA requires that the estimate of highest and best use must be an economic use, and our analysis determined that use is recreation or residential home site. Importantly, typical similar recreation and home site parcels range in size from about five to 80 acres. Therefore, the acquired parcel fits within the market range for similar use parcels. Importantly, topographical and geological restraints limit any subdivision into smaller tracts, and there is no economic gain to expanding the area. Therefore, we determined the acquired parcel owned by the State of Alaska is the larger parcel.

Chapter 5: Property Valuation – Before Acquisition

Overview

This chapter analyzes similar land sales and makes comparisons of each to the 15.8-acre appraised parcel. We found sufficient sale activity to perform a credible analysis. We compare the sales on a price per acre basis and make qualitative adjustments for differences in location and physical character. An explanation of the sales comparison methodology follows.

Sales Comparison Methodology

The sales comparison approach is a market-based analysis premised on price behavior for alternative home site or recreational lands. Our initial land sales search focused on the Turnagain Arm market district, but turned up limited sale data that offers a reasonable comparability to the subject. Therefore, we expanded our search to include other similar access and topographical characteristics, and locations proximate to Chugach State Park, including Eagle River and Chugiak. Thereafter, we found eight land sales since August 2008. Of the eight, we rely on four sales to compare directly to the subject. The following table summarizes the eight sales, highlighting the four primary sales.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
2	Near the head of Crow Creek, eight miles up Crow Creek Road from Girdwood, *Crow Pass*	N/A	66.48	3/13	$198,000	$2,978
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
4	Southwest corner of Upper De Armoun Road and Canyon Road, *Anchorage*	R-8	67.83	9/14	$500,000	$7,371
5	End of Sandpiper Drive, south of Rabbit Creek Road, *Anchorage*	R-7	99.70	12/16	$900,000	$9,072
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
9	Foot trail to property from end of Potter Heights Drive, *Anchorage*	R-10	35.00	7/15	$195,000	$5,571

Regarding the comparative analysis, we use qualitative adjustments to measure differences between the sales and the subject. Qualitative adjustment uses a technique known as a relative comparison analysis, which represents a study of market relationships without recourse to quantification. By analyzing and interpreting market behavior, we rate various elements of comparison that influence price as superior, inferior, or similar. This adjustment technique is particularly useful in analyzing the comparable sales because of interrelationships between physical characteristics. The relative comparison grid on Page 38 summarizes the ratings of the primary land sales to the subject parcel.

Analysis of Elements of Comparison

The first step of the valuation process is to ascertain what comparative elements cause price to vary. We determined location and physical characteristics, i.e., size, access, topography, and utilities, have the greatest influence on price. Importantly, real property rights conveyed, financing terms, conditions of sale, and market conditions had no affect on price behavior for these sales. An explanation of adjustments made follows.

Real Property Rights Conveyed

The property rights appraised is the fee simple interest, and each of the sales conveyed similar entitlements. Therefore, no adjustment is necessary for property rights conveyed.

Financing Terms

Based on the definition of market value we assume financing terms in cash, or on terms reasonably equivalent to cash, for the subject property. Sales 1, 4, and 8 were owner-financed transactions with 17% to 50% down at undisclosed terms. However, owner financing is common in this market, and had little to no effect on price behavior. Therefore, we do not adjust these comparables for financing terms.

Conditions of Sale

Regarding Sale 1, the buyer owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivations might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district. Sales 4, 5 and 8 were exposed to the market, and do not indicate any atypical motivation.

Market Conditions

While analysis indicates modest appreciation from 2014 to the present day, we found no data to support a market conditions adjustment to the sale that transpired in 2014. Therefore, we do not adjust the comparable land sale for change in market conditions.

Location

The neighborhood environment and proximity of shopping and services are location influences that affect price behavior. The appraised property is located 14 miles from Midtown Anchorage, and about ten miles from a South Anchorage shopping district. Sale 1 is located 15 miles from Midtown Anchorage, but within five miles of the Eagle River commercial core. Further, Sales 3 and 8 are about 10 miles from Midtown Anchorage. Overall, the neighborhoods of these three sales offer similar locations removed from shopping and services. Therefore, we do not adjust these sales for location. However, Sale 4 is located on the Anchorage upper hillside, closer to commercial goods and services. Therefore, we adjust Sale 4 downward for a superior location.

Physical Characteristics

As stated, size, access, topography, and utilities are physical factors that cause price to vary. Importantly, interrelationships betweens these physical features make it difficult to measure or quantify price differential. Thus, we measure physical differences by a qualitative rating of inferior, similar, or superior.

Size: The sales range from 20.00± acres to 80.00± acres, whereas the subject is a 15.8-acre parcel. Typically, an inverse relationship between price and size reflects market behavior. However, this relationship is not linear. In fact, analysis of historical sales develops a price curve that has a steep slope for parcels containing less than 20 acres, a moderate slope for parcels ranging from 20 to 80 acres, and a modest slope for parcels greater than 80 acres. The weakness of this analytical process is the presumption that size is the sole price influence, which is an improbable dynamic. Thus, we use the price curve as an analytical tool to bracket value, but not quantify size adjustment. Based on the preceding analysis, we make a significantly upward adjustment to Land Sales 1, 3 and 4 for sizes more than four times larger than the subject.

Access Comparisons: The subject fronts the Seward Highway right of way, but potential legal and physical access includes risk. Developing physical access to the subject would be costly due to the above-grade frontage and bedrock. Location on a bend of the highway could create legal barriers to a driveway permit due to safety concerns.

Sale 1 does not have developed road access, but does have access via trail for ATV-type vehicles; we rate this access inferior to the subject parcel. Sale 4 has potential access from De Armoun Road and Canyon Drive. Sale 3 has access from a relatively well-used, dirt road that supports multiple properties, and Sale 8 has access via gravel road. Therefore, we adjust these sales downward for access superiority.

Topography Comparisons: The subject has undulating to steep sloping topography that is above grade with Seward Highway frontage. Sale 1 has steep sloping topography that limits development potential, which we rate inferior to the subject. Sales 3, 4 and 8 have a more modest slope, which is generally similar.

Easement and Restrictions: We do not identify any adverse easements or restrictions affecting the subject. However, Sales 3 and 8 are bisected by roadways, indicating an upward adjustment.

Utilities: The subject has electricity near the northern boundary of the parcel. Sale 1 does not have any utilities within the general proximity, and requires an upward adjustment for this inferiority. Conversely, Sale 4 has electricity and natural gas along two boundaries, which we rate superior to the subject. Sales 3 and 8 have electricity at the site, which is not significantly different from the subject.

View Amenity: The subject has direct view of Turnagain Arm and surrounding mountains. Sale 1 has Knik Arm and mountain views, while Sale 3, 4 and 8 have city and ocean views. While views differ, desirability of one view over the other is a subjective and personal assessment. Further, there is no data to support adjusting the sales for a view of Knik Arm versus Cook Inlet and Turnagain Arm. Therefore, we do not adjust for view amenity.

Use (Zoning)

The subject parcel is located within the Chugach State Park, which is outside a zoning district. If the parcel was in the private sector, it would be zoned Turnagain Arm (TA) District and would likely be subject to the Indian Land Use Plan. Nearby lands are designated for residential or mixed use; however, the highest and best use of the parcel is for recreation or home site.

Sales 1, 3, and 8 are zoned R-10, a low-density residential district with a minimum lot area of 1.25 to 7.50 acres depending on average slope and soil geology of the parcel. Due to the sloping topography and bedrock soils of the comparable sales, the R-10 zoning is rated generally similar to the subject indicating no adjustment is necessary. Sale 4 is zoned R-8, which states the minimum parcel size is four acres, although slope and soil condition will require larger lots if subdivided. Therefore, we do not adjust Sale 4 for zoning.

Comparative Land Sale Analysis

A tabular summary of the land sales used in comparative analysis follows. The inserted map that follows provides a location reference, with additional details of the four comparable land sales in the addendum.

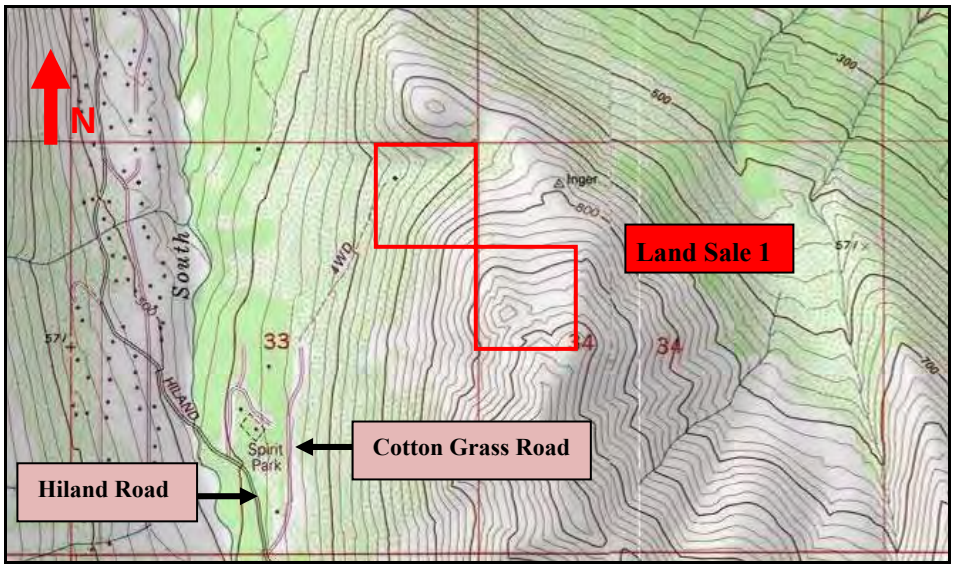
Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
4	Southwest corner of Upper De Armoun Road and Canyon Road, *Anchorage*	R-8	67.83	9/14	$500,000	$7,371
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
	Material Site 6 – MP 104.5 Seward Highway, Indian	***TA*** ***Assumed***	***15.80***	*-- --*	*-- --*	*-- --*

Land Sale 1

Summary: This sale is an 80-acre parcel located in the South Fork Eagle River valley neighborhood accessible from Hiland Drive. Located adjacent to Chugach State Park boundaries, the parcel has a panoramic northwesterly view of Eagle River and Knik Arm. While trail access is possible to the westerly parcel area, it permits only ATV-type vehicles. Steep topography is the defining physical feature, which diminishes useable land area. Available utilities are within one-half mile.

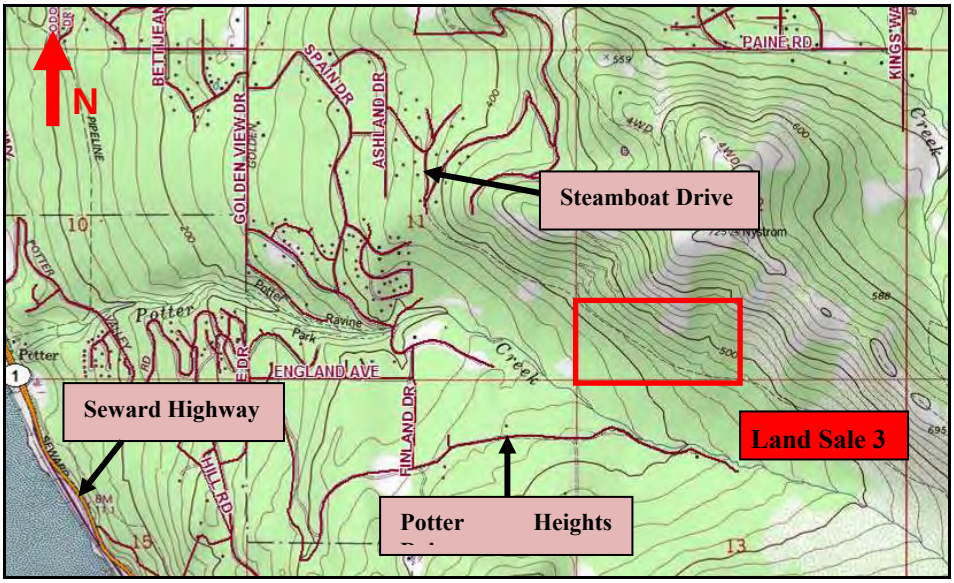
The buyer owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivations might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district.



Comparative Analysis: Analysis supports upward adjustments for inferior size, access, topography, and utilities. Therefore, Land Sale 1 indicates a unit value significantly greater than $2,215 per acre.

Land Sale 3

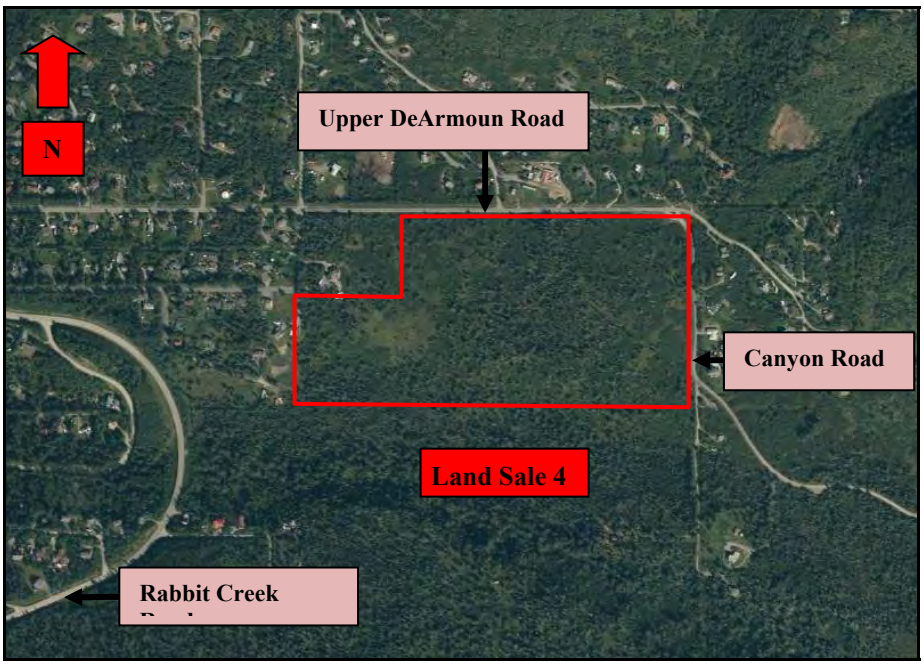
Summary: This sale is an 80.00-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Nystrom Peak, the parcel has a moderate to steep slope with southwesterly view of Anchorage and Turnagain Arm. Access is via a dirt trail extension of Steamboat Drive, which bisects the parcel as a 60-foot road easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is at the site.



Comparative Analysis: Analysis supports upward adjustments for size and the bisecting roadway. Conversely, access is a superior physical characteristic. Overall, the net adjustment to Land Sale 3 is upward, indicating a unit value greater than $4,375 per acre.

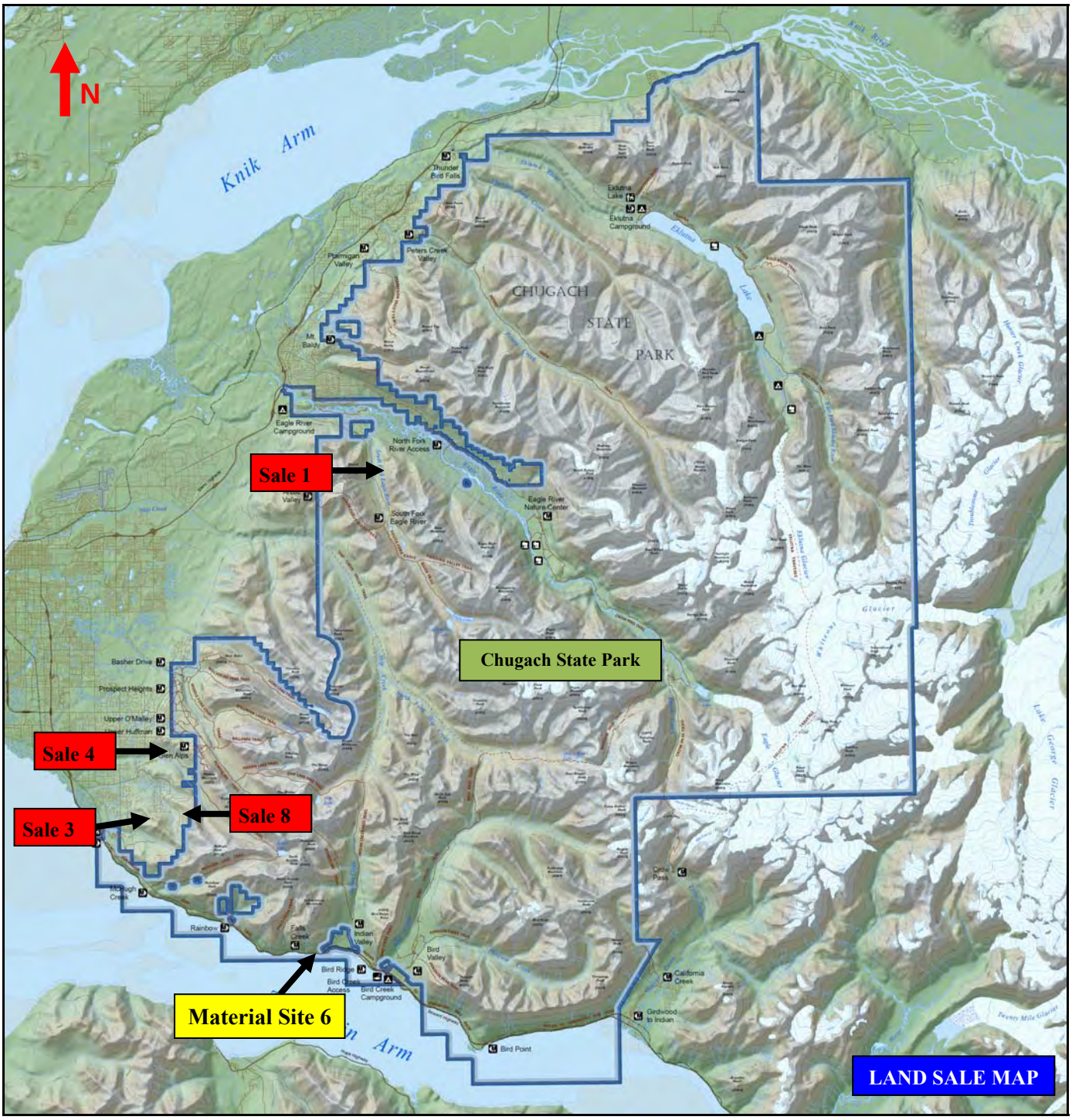
Land Sale 4

Summary: This sale is a 67.83-acre parcel located in the Upper Hillside neighborhood fronting the south side of Upper DeArmoun Road and west side of Canyon Road in Rabbit Creek Valley. Topography has a moderate southwesterly slope below access grade that enhances the view amenity. Reportedly, soil conditions cause a high water table with drainage constraints, which reduces yield potential.



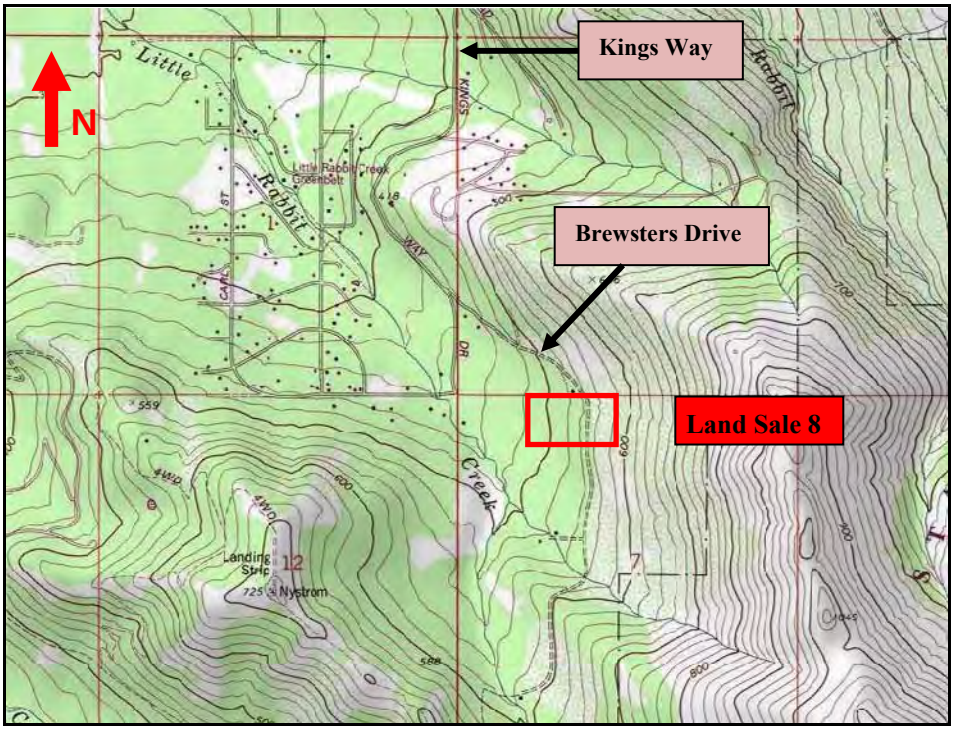
Electricity and natural gas are available from the road right-of-way. Zoned R-8, the minimum parcel size is four acres, although slope and soil condition will require larger lots if subdivided.

Comparative Analysis: Analysis supports a downward adjustment for superior location, access, and utilities. Conversely, an upward adjustment is necessary for size. Overall, the net adjustment is downward indicating a unit value less than $7,371 per acre.


N
Knik Arm
CHUGACH
STATE
PARK
Sale 1
Chugach State Park
Sale 4
Sale 3
Sale 8
Material Site 6
Knik Arm
LAND SALE MAP

Land Sale 8

Summary: This sale is a 20.00-acre parcel located in the Bear Valley neighborhood proximate to Chugach State Park. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage. Public electricity is along the northern boundary.



Comparative Analysis: Analysis supports a downward adjustment for superior access. Conversely, the bisecting public roadway is inferior. Overall, the superior access carries more weight than the bisecting roadway. Therefore, the net adjustment to Land Sale 8 is downward, indicating a unit value less than $7,450 per acre.

On the following page is an adjustment grid that summarizes the comparative land sale analysis.

Comparative Analysis Summary

Listed below is an adjustment grid that summarizes the comparative land sale analysis.

Comparable Land Sale Adjustment Grid

Land Sale No.	Subject	Land Sale 1	Land Sale 3	Land Sale 4	Land Sale 8
Sale Price	-- --	**$177,200**	**$350,000**	**$500,000**	**$149,000**
Price/Acre	-- --	**$2,215**	**$4,375**	**$7,371**	**$7,450**
Property Rights Conveyed	*Fee simple*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Financing Terms	*Cash*	Owner-financed **-Similar-**	Cash **-Similar-**	Owner-financed **-Similar-**	Owner-financed **-Similar-**
Conditions of Sale	*Assumed Typical*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Market Conditions	*8/18 (Date of value)*	7/14 **-Similar-**	6/17 **-Similar-**	9/14 **-Similar-**	9/15 **-Similar-**
Adjusted $/Acre	-- --	**$2,215**	**$4,375**	**$7,371**	**$7,450**
Location	*Turnagain Arm; Indian*	**- Similar -**	**-Similar-**	**-Superior-**	**-Similar-**
Physical Character					
Size	*15.80 Ac.*	80.00 Ac. **-Inferior-**	80.00 Ac. **-Inferior-**	67.83 Ac. **-Inferior-**	20.00 Ac. **-Similar-**
Access	*Seward Highway*	**-Inferior-**	**-Superior-**	**-Superior-**	**-Superior-**
Topography	*Undulating to steep sloping*	Steep sloping **-Inferior-**	Modest to steep slope **-Similar-**	Modest slope **-Similar--**	Modest slope **-Similar-**
Easements and Restrictions	*None*	**-Similar-**	**-Inferior-**	**-Similar-**	**-Inferior-**
Utilities	*Electricity*	None **-Inferior-**	Electricity **-Similar-**	Electricity & NG **-Superior-**	Electricity **-Similar-**
View Amenity	*Turnagain Arm; Mountains*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Use (Zoning)	*TA (assumed)*	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-8** **-Similar-**	**R-10** **-Similar-**
Overall Relative Comparison Rating		**Inferior**	**Superior**	**Superior**	**Superior**
Adjusted $/Acre	-- --	**> $2,215**	**> $4,375**	**< $7,371**	**< $7,450**

Reconciliation and Conclusion of Value

The comparable land sales indicate an unadjusted unit value range from $2,215 to $7,450 per acre. After analysis, Land Sales 4 and 8 are superior indicating a value less than $7,371 per acre. In contrast, Land Sales 1 and 3 are inferior indicating a value greater than $4,375 per acre. We array the land sales and subject on an overall basis as follows.

Land Sale	$/Acre	Overall Rank	Net Adjustment
8	$7,450	Superior	↓
4	$7,371	Superior	↓
Subject	-- --	-- --	-- --
3	$4,375	Inferior	↑
1	$2,215	Inferior	↑

After qualitative adjustments, the range tightens to a value greater than $4,375 but less than $7,371. Based on the preceding data, reasoning, and analysis, we estimate a value in the upper half of the indicated range or $6,500 to 6,900 per acre. This develops the following range of value.

15.80 Ac. @ $6,500/Ac. = $102,700

15.80 Ac. @ $6,900/Ac. = $109,020

In conclusion, the market value of the larger parcel before the acquisition is as follows.

Market Value Before Acquisition	**$105,000**

Chapter 6: Property Valuation – After Acquisition

Overview

Because the larger parcel and acquisition are the same, valuation reflects a full acquisition. Therefore, the property after the acquisition has no value.

Market Value After Acquisition	**$0**

Chapter 7: Market Value of Acquisition

Overview

We employ the before and after methodology to value the acquisition of Material Site 6. Analysis based on the sales comparison approach concluded with market value estimate before the acquisition as follows.

Value Before Acquisition	***$105,000***

The valuation reflects a full acquisition. Therefore, the property after the acquisition has no value.

Value After Acquisition	***$0***

The value of the acquisition is the difference between the before and after opinions of market value. Thus, the value of the acquisition of Material Site 6 is as follows.

Market Value of Acquisition	***$105,000***

Market Value of Acquisition

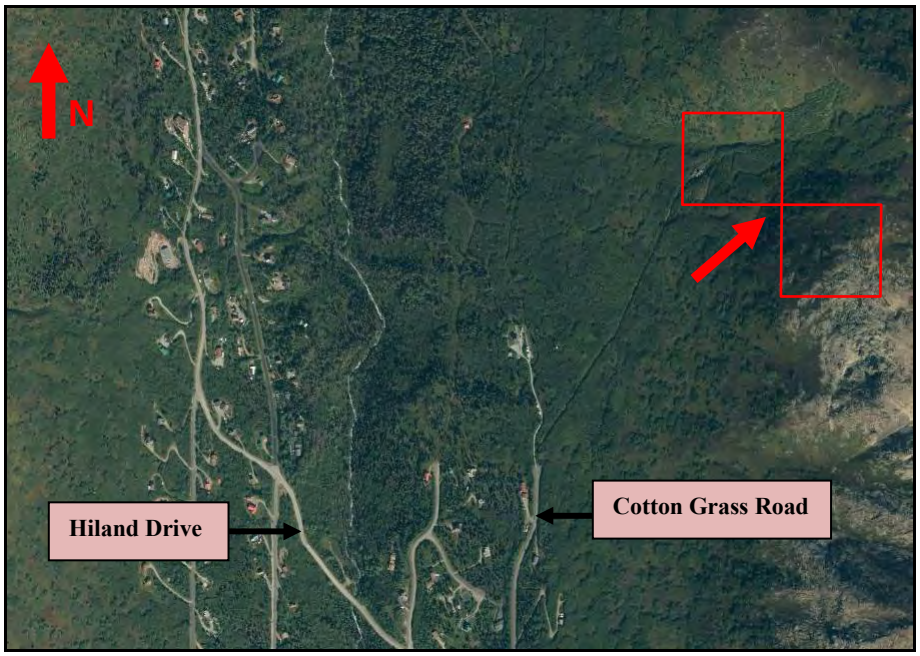
Based on the preceding data, reasoning, and analysis, it is our opinion the market value of the acquisition "Material Site 6," as of August 8, 2018, is as follows.

Market Value of Acquisition	**$105,000**

As instructed by DOWL, Inc., analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the parcel referred to as "Material Site 6" is a surveyed, platted, and legally marketable, stand-alone property.* Use of this hypothetical condition might have affected the assignment results.

MacSwain Associates LLC

Comparable Land Sale 1



Location:	East of Cotton Grass Drive off of Hiland Road, 9± miles southeast of Eagle River, Alaska
Assessor Numbers:	050-411-40 & 41
Legal Description:	NE4NE4, Section 33, T14N, R1W SM and SW4NW4, Section 34 T14N, R1W, SM, Anchorage Recording District

Grantor:	Eric Gingrich Personal Representative for Estate of Stephen Gingrich	**Instrument:**	Personal Representative's Deed
Grantee:	Hertha Monroe	**Document No:**	2014-028880-0
Sale Date:	7/14	**Data Source:**	Broker
Sale Price:	$177,200	**Confirmed By:**	Dan Shantz
Cash Equivalent Price:	$177,200	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $88,600 down payment, $88,600 Deed of Trust at undisclosed terms		

Land Area:	80.00± acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential
Access:	Trail	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements	**Inspected By:**	Dan Shantz

Property Description:

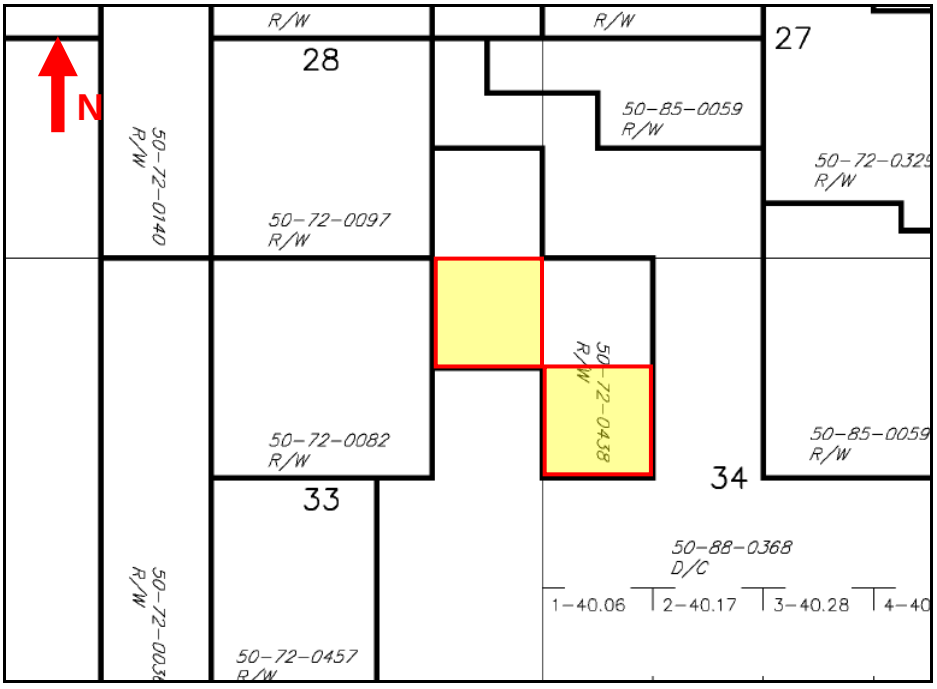
This 80-acre parcel is located on the eastern slope of the South Fork Eagle River valley neighborhood accessible from Hiland Road. Location is 15± miles from Midtown Anchorage. A trail extending nearly one-half mile links the parcel to Cotton Grass Drive. Topography is steep, which diminishes subdivision potential.

Remarks:

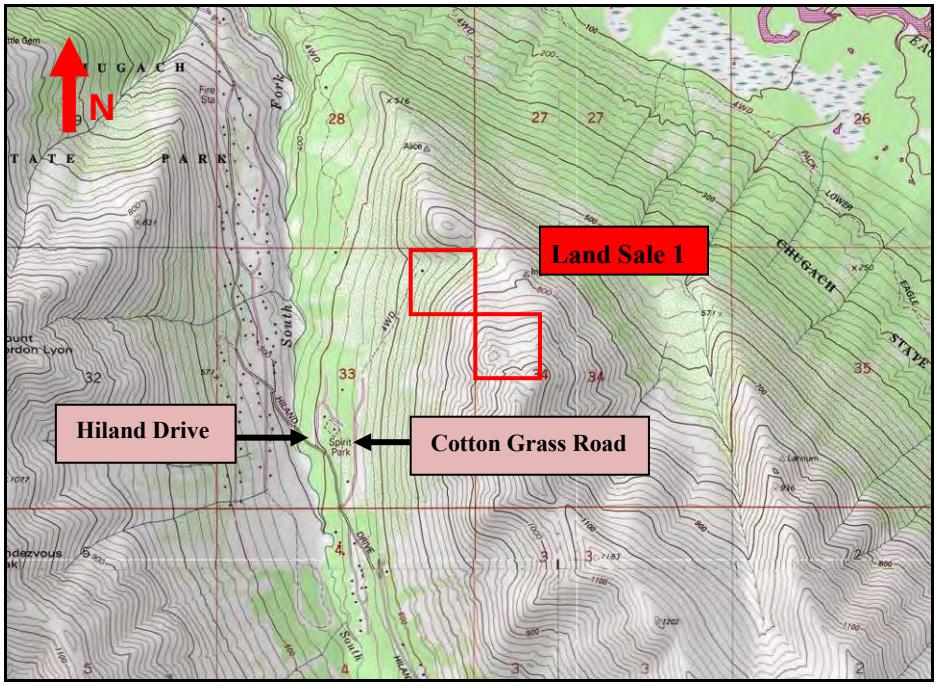
The buyer owned a contiguous property and desired to protect their privacy. The Broker stated the buyer negotiated the purchase prior to the listing reaching the MLS database.

Analysis **$177,200** ÷ **80.00± Acres** = **$2,215/Acre**

Comparable Land Sale 1



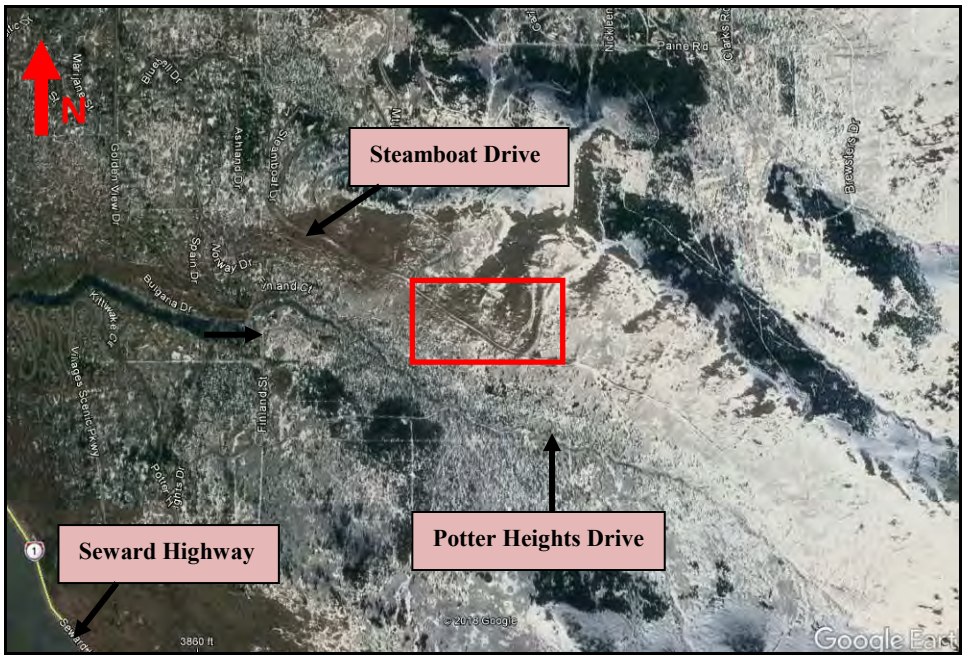
Portion of MTP T 14N, R 1W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 3



Location:	Dirt road extension of Steamboat Drive, north of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-221-02
Legal Description:	Tract 3, Potter Creek Subdivision, Plat No. 71-202

Grantor:	J&L Miller Alaska Community Property	**Instrument:**	Warranty Deed
Grantee:	Christopher Matthew & Kimberly Cavanaugh	**Document No:**	2014-031020
Sale Date:	6/17	**Data Source:**	Broker
Sale Price:	$350,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$350,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	80.00 Acres	**Public Utilities:**	Electricity
Zoning:	R-10	**Intended Use:**	Residential
Access:	Dirt trail extension of Steamboat Drive	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements; 60-foot bisecting road easement	**Inspected By:**	Steve MacSwain, MAI

Property Description:

This 80-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on the southwest slope near Nystrom Peak, the parcel has a moderate to steep slope. Access is via a well-travelled, dirt roadway extension of Steamboat Drive that pass through the parcel and continues to several other properties. Electricity is at the site.

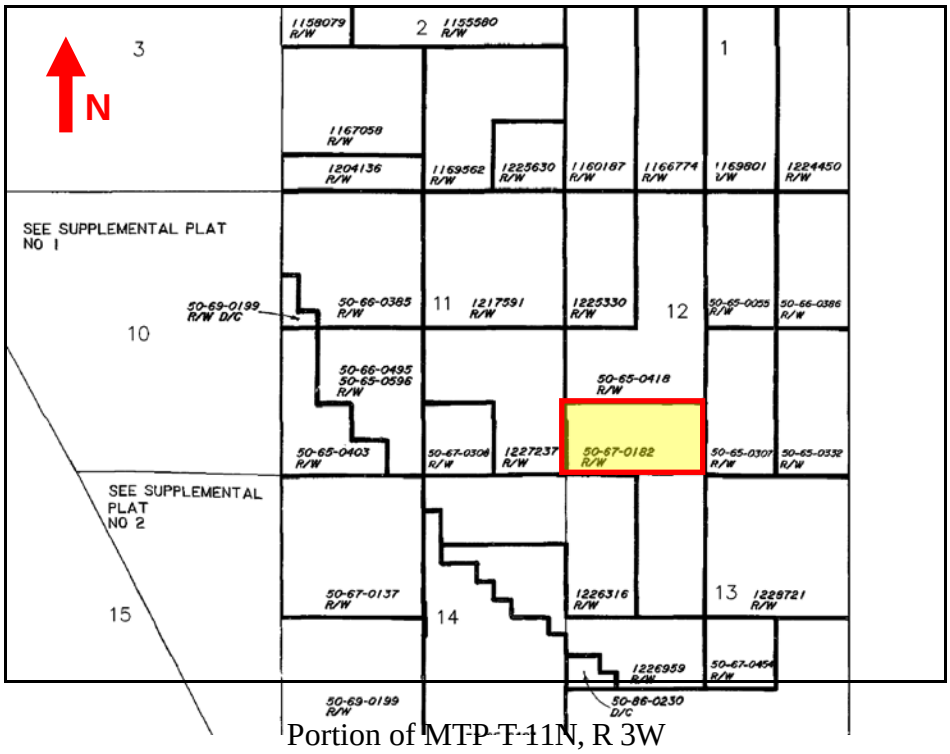
Remarks:

The parcel was originally listed at $400,000, before lowering to $370,000 and securing an offer after 16.5 months of exposure.

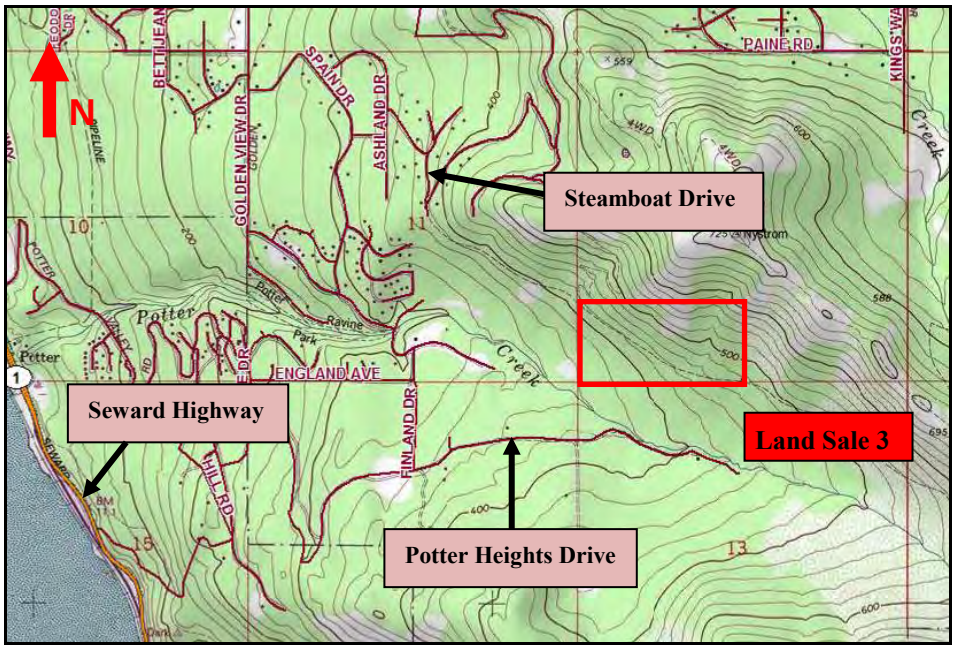
Analysis **$350,000** ÷ **80.00 Acres** = **$4,375/Acre**

MacSwain Associates LLC

Comparable Land Sale 3



Portion of MTP T 11N, R 3W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 4



Location:	South side of Upper De Armoun Road, 9± miles southeast of Midtown Anchorage, Alaska
Assessor Number:	017-073-06
Legal Description:	N2SE4 except the NW4NW4SE4, Section 25, T12N, R3W, SM, Anchorage Recording District

Grantor:	James Hoeffler and Karyn Warner	**Instrument:**	Warranty Deed
Grantee:	Big Country Enterprises, LLC	**Document No:**	2014-036617-0
Sale Date:	9/14	**Data Source:**	Broker
Sale Price:	$500,000	**Confirmed By:**	Dan Shantz
Cash Equivalent Price:	$500,000	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $200,000 down payment, $300,000 Deed of Trust at undisclosed terms		

Land Area:	67.83± acres	**Public Utilities:**	Electricity, natural gas
Zoning:	R-8	**Intended Use:**	Residential
Access:	Upper De Armoun Road and Canyon Road	**Highest & Best Use:**	Residential subdivision
Easements/Restrictions:	Section line easement	**Inspected By:**	Dan Shantz

Property Description:

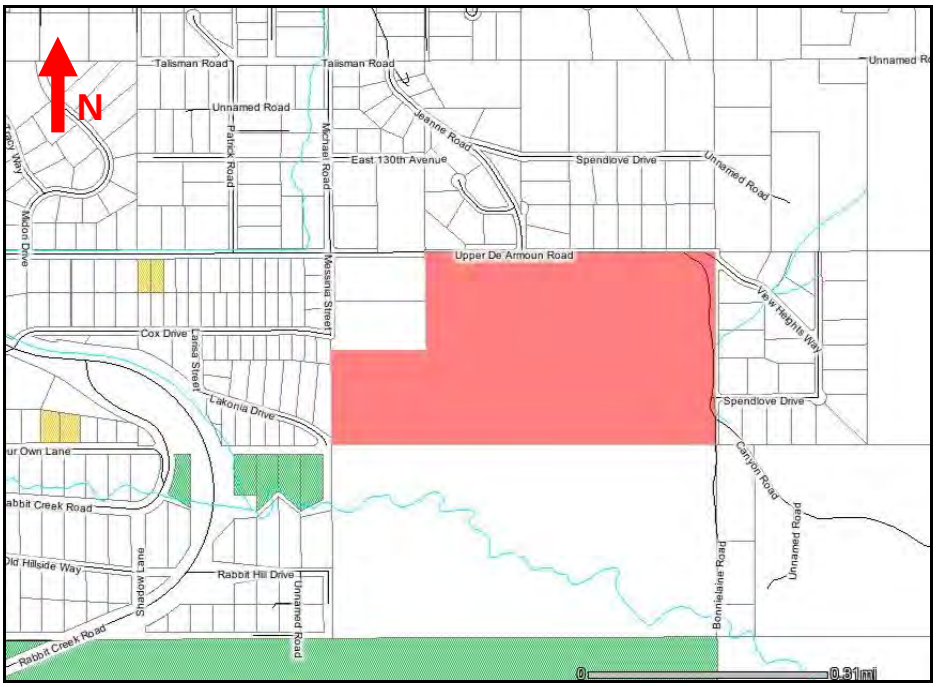
This 67.83-acre parcel is located in the Upper Hillside neighborhood with road access possible from the north and east boundaries. Topography has a descending southwesterly gradient below access grade that provides a desirable view amenity. A high water table with drainage constraints characterizes a majority of the parcel. R-8 zoning requires a minimum lot size of four acres if subdivided.

Remarks:

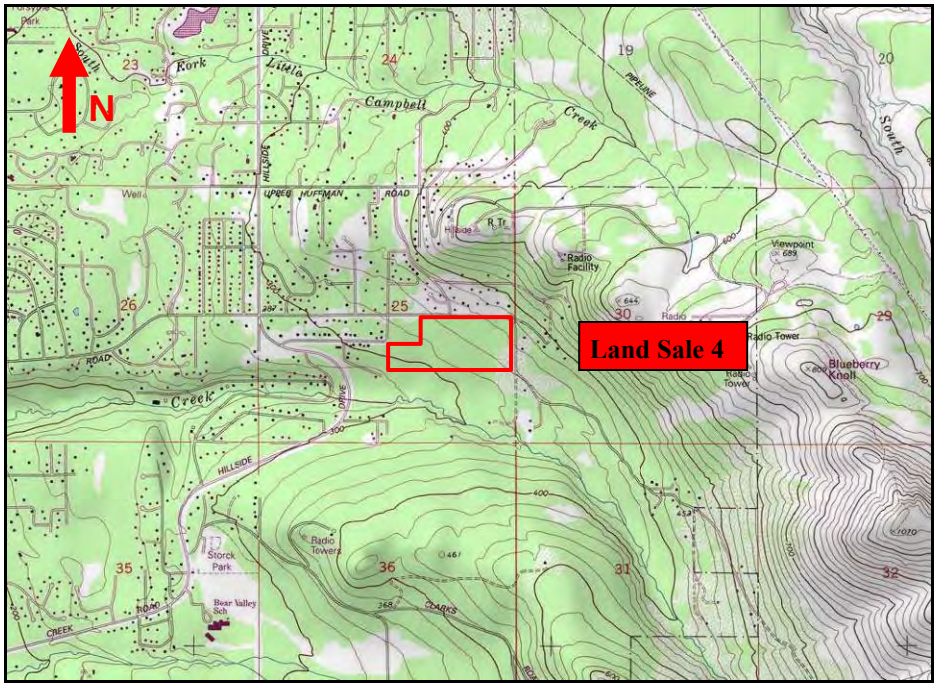
Listed for $750,000, the parcel sold after 3± days on the market. The Broker stated the list price was high, while the sale price reflects market parameters. According to the Broker, owner financing did not influence price negotiations.

Analysis	**$500,000**	**÷**	**67.83± Acres**	**= $7,371/Acre**

Comparable Land Sale 4



MOA Mapping



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 8



Location:	Bisected by Brewsters Drive, off Kings Way, Bear Valley neighborhood, 10.5± miles southeast of Midtown Anchorage, Alaska
Assessor Number:	020-151-03
Legal Description:	N1/2NE1/4NW1/4, Section 7, T 11N, R 2W, SM, Anchorage Recording District

Grantor:	James Rowe	**Instrument:**	Warranty Deed
Grantee:	Shawn P. and Joell F. McAlpin	**Document No:**	2015-046895-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$149,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$149,000	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $25,000 down payment, $124,000 Deed of Trust at undisclosed terms		

Land Area:	20.00 Acres	**Public Utilities:**	Electricity at northern boundary
Zoning:	R-10	**Intended Use:**	Residential
Access:	Gravel roadbed	**Highest & Best Use:**	Residential
Easements/Restrictions:	Bisecting roadway; 50-foot section line easement along southern boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

This 20.00-acre parcel is located in on either side of Brewsters Drive, in the Bear Valley neighborhood, about 9.5± miles from Midtown Anchorage. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage.

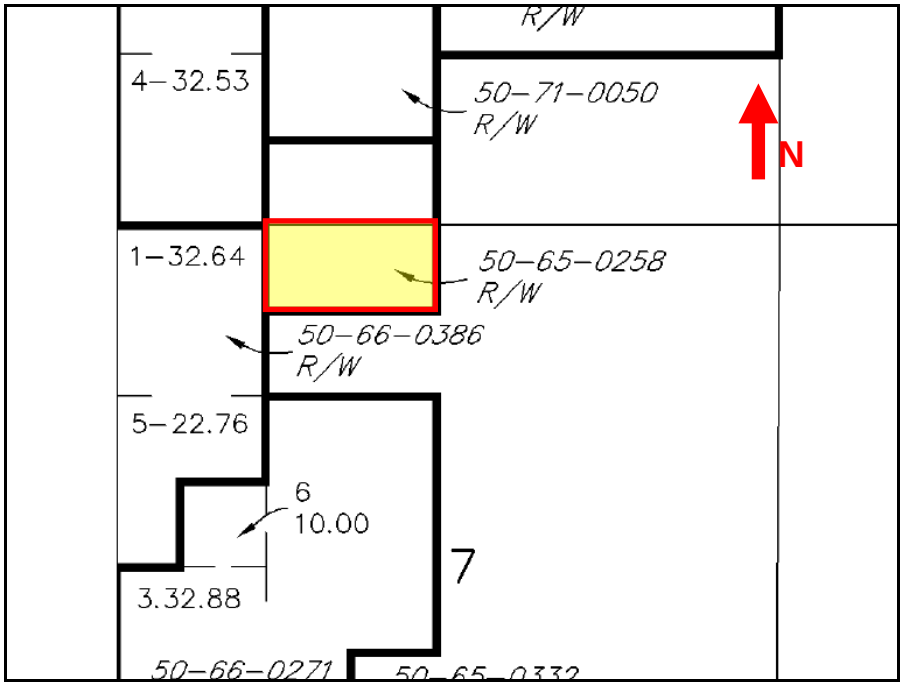
Remarks:

The parcel was listed off and on for several years, lastly listed in February 2014 for $169,900, before lowering to $149,000 securing an offer a few months later. The Broker stated that owner financing with $25,000 down did not affect the sale price.

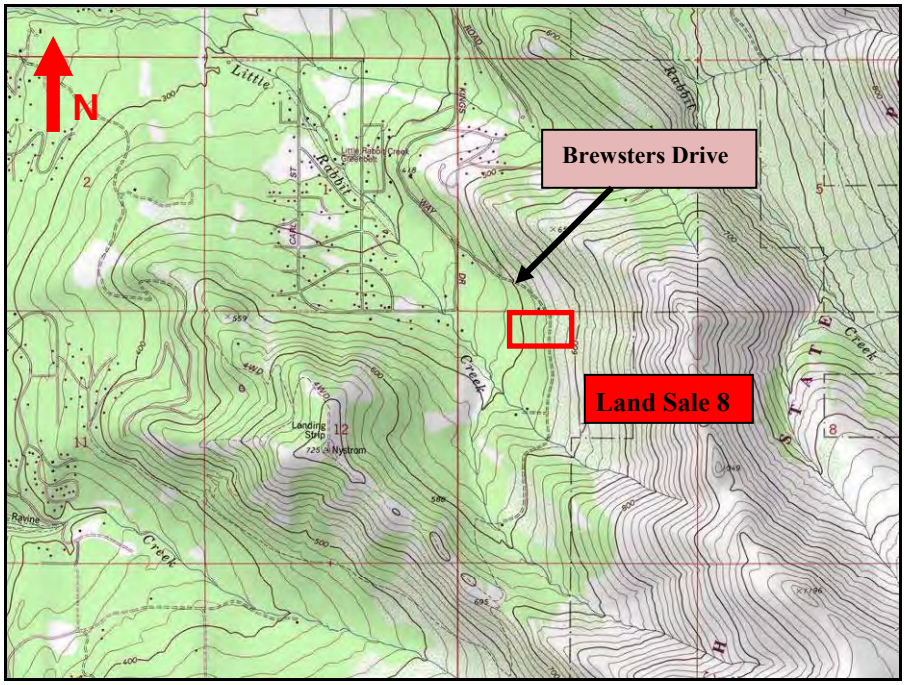
Analysis **$149,000** ÷ **20.00 Acres** = **$7,450/Acre**

MacSwain Associates LLC

Comparable Land Sale 8



Portion of MTP T 11N, R 2W



National Geographic TOPO Map

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

Appraiser: Steve MacSwain, MAI

Member of Appraisal Institute - No. 5700

State of Alaska, Certified General Real Estate Appraiser - No. 42

Professional Experience: 1986 to Present - MacSwain Associates LLC

1976 to 1986 - Appraisal Company of Alaska - President

1970 to 1975 - Real Estate Services Corporation – Appraiser

1969 to 1970 - State of Alaska Department of Highways - Right of Way Agent

Real estate appraiser and consultant of all property types throughout Alaska including commercial, industrial, subdivisions and special-purpose properties. Appraisals have been performed for financing, leasing, insurance, condemnation, taxation, property damages, investment analysis, and buy-sell decisions. Appraisals include valuation of both real property and business enterprises. Professional experience totals 49 years. Life-long Alaskan resident of Alaskan Native descent.

Education: Bachelor of Business Administration, Finance (1969), University of Alaska Fairbanks

Appraisal Education: The following is a list of completed appraisal courses and seminars.

2018 – Uniform Standards of Professional Appraisal Practice – Update by the Appraisal Institute

2017 – Appraising Environmentally Contaminated Properties by the Appraisal Institute

2017 – Residential & Commercial Valuation of Solar by the Appraisal Institute

2017 – Right of Way Acquisition for Pipeline Projects by the International Right of Way Association

2015 – Litigation Appraising: Specialized Topics and Applications by the Appraisal Institute

2015 – Business Practices and Ethics by the Appraisal Institute

2013 – Complex Litigation Appraisal Case Studies by the Appraisal Institute

2013 – Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book) by the Appraisal Institute

2012 – Appraisal Curriculum Overview by the Appraisal Institute

2010 – Reviewing Appraisals in Eminent Domain by the International Right of Way Association

2010 – Commercial Appraisal Engagement and Review Seminar for Bankers and Appraisers by the Appraisal Institute

2009 – The Appraiser as an Expert Witness: Preparation and Testimony by the Appraisal Institute

2009 – Attacking and Defending an Appraisal in Litigation by Whitmer Education

2008 – Uniform Standards of Professional Appraisal Practice by the Appraisal Institute

2007 – Business Practices and Ethics by the Appraisal Institute

2007 – Eminent Domain Law for Right of Way Professionals by the International Right of Way Association

2007 – Appraisal Review for Federal Aid Programs by the International Right of Way Association

2007 – Analyzing Operating Expenses by the Appraisal Institute

2007 – Forecasting Revenue by the Appraisal Institute

2007 – Case Studies in Highest and Best Use by the Appraisal Institute

1969-2006: Numerous appraisal classes pertaining to principles, income capitalization, cost analysis, sale comparison approach, and highest and best use analysis by the Appraisal Institute, Society of Real Estate Appraisers, International Right-of-Way Association, International Association of Assessing Officers, and Marshall Valuation Service

Membership and Organizations: Member of Appraisal Institute – No. 5700, International Right of Way Association (IRWA), and Building Owners and Managers Association (BOMA)

Public Service: Past Chairman of the State Board of Certified Appraisers

Past Member of Board of Equalization, Municipality of Anchorage, National Experience Review Committee of the Appraisal Institute, and Regional Ethics and Counseling Panel of the Appraisal Institute

Past President of Alaska Chapter 57 of the Appraisal Institute

Significant Assignments:

- Appraised Pacific Spaceport Complex-Alaska (PSCA) land and facilities for Alaska Aerospace Corporation on Kodiak Island..
- Appraised proposed LNG Pipeline, a FERC-regulated 860-mile pipeline transporting liquefied natural gas.
- Appraised the Trans-Alaska Pipeline System, a FERC-regulated 800- pipeline that transports crude oil from Prudhoe Bay to Valdez, for TAPS ownership.
- Appraised remote lands (65,000± acres) owned by three Native corporations damaged by the *Selendang Ayu* grounding and subsequent oil spill.
- Appraised Calais Company, Inc., a real estate holding company consisting of 39 commercial parcels in Anchorage.
- Principal real estate consultant and expert witness for all lands affected by the *Exxon Valdez* oil spill. Project involved over 2,000,000 acres of remote land and nearly 2,000 private property owners.
- Appointed as a representative of a three-member panel that analyzed and valued over 1,000,000 acres and 8,000 parcels for the Mental Health Lands Settlement.
- Contract assessor for the North Slope Borough, Kodiak Island Borough, City of Nome, and the City of Valdez.
- Represented Seibu Alaska, Inc. (Alyeska Resort and Alyeska Prince Hotel) in preparing of their property tax appeal with the Municipality of Anchorage that resulted in a $65 million reduction in assessed value.
- Appraised submerged tideland parcels and wetlands parcels located in Womens Bay on Kodiak Island for the purpose of an exchange between Koniag, Inc. and U.S. Fish and Wildlife Service.
- Appraised Common Carrier Pipeline right-of-ways leased and operated by BP Transportation Alaska and ConocoPhillips Alaska.
- Appraised 3,600 acres consisting of the former Adak Naval Air Station and Submarine Base conveyed to the City of Adak and the State of Alaska.

Expert Witness Experience: Steve MacSwain, MAI is qualified as an expert witness in both the United States Federal Court and the State of Alaska Superior Court. Steve has testified as an expert witness in State and Federal courts. In addition, Steve has testified as expert witness in numerous Alaskan municipal tax courts, public hearings, and depositions on matters related to real property.

Arbitrator Experience: Appointed a Master by the Superior Court of Alaska and Municipality of Anchorage to serve as an arbitrator in determining just compensation.



License #: APRG42
Effective: 05/16/2017
Expires: 06/30/2019

STATE OF ALASKA
Department of Commerce, Community, and Economic Development
Division of Corporations, Business, and Professional Licensing
Real Estate Appraisers

Licensee: **STEVEN JAMES MACSWAIN**
License Type: **Certified General Real Estate Appraiser**
Status: **Active**

Commissioner: Chris Hladick

REVIEW APPRAISER'S DETERMINATION OF APPRAISAL COMPLIANCE WITH UASFLA & USPAP	PROJECT NAME: WINDY CORNER SEWARD HWY. MILEPOST 105-107
By	DOT & PF PROJECT NO. 0A3-1(34)/56631
Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	PROPOSED MATERIAL SITE 6 (STATE OF ALASKA) KVC FILE NO. 18-101D

Property Owner: Alaska Department of Natural Resources, Chugach State Park.

Appraised Property: The fee-simple interest in 15.8± acres of vacant land located along the Seward Highway between Mileposts 104.1 and 104.6 near Indian, Alaska. The real estate is roughly, legally described as being situated in Section 6, Township 10 North, Range 1 West and Section 1, Township 10 North, Range 2 West, Seward Meridian, Alaska. **Note**: ***The appraiser was instructed by his client, DOWL, Inc., to base the appraisal on the hypothetical condition that the 15.8 acres constituted a platted, legally marketable, stand-alone property rather than an unsubdivided portion of a 495,000-acre park***.

I, Franklin M. King, MAI, have completed a technical review of the August 10, 2018, appraisal report on the above-referenced property which was prepared, signed and certified by Steve MacSwain, MAI. My review was completed without a field inspection of the subject property or the comparable sale properties, *i.e*., a "desk" review was performed. The scope of my review included: 1) a check for proper appraisal methodology, analytical consistency, internal logic, and accuracy of mathematical calculations; 2) a check for compliance with the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP); and 3) a determination as to whether the appraisal constitutes an adequate basis for an offer of just compensation. I did not independently confirm the market data or subject property data presented in the appraisal report.

My five-page appraisal review report herein is intended for use only by my client, DOWL, Inc., as well as the State of Alaska and the National Park Service.

Mr. MacSwain utilized the sales comparison approach to value the subject land as if vacant and available for development to its highest and best use, which he determined to be as a recreation or home site. The results of his appraisal were communicated in an "Appraisal Report" as defined in the 2018-2019 edition of USPAP.

The fee simple interest in the land is to be acquired as part of the above-captioned road project. The appraiser's opinion of the **market value** of the **acquisition,** as of **August 8, 2018** was **$105,000.00 (One Hundred Five Thousand Dollars)**.

Review Appraiser's Determination:

- ***In my opinion, the content, analyses, and conclusions in the appraisal report are in compliance with the current editions of* UASFLA *and* USPAP.**
- ***The market value opinion was based on an adequate quantity of relevant data and proper adjustments to the data were made where appropriate.***
- ***The appraisal methods and techniques used were appropriate for the valuation problem.***

- ***The $105,000 market value opinion for the property rights that are proposed to be acquired is appropriate and reasonable, given the data and analyses presented, and I recommend approval of the appraisal as an adequate basis for an offer of just compensation.***

JUST COMPENSATION ALLOCATION:

Land:	$105,000
Section Line/PLO Interests:	$ N/A
Improvements	$ N/A
Cost-to-Cure:	$ N/A
Damages:	$ N/A
Special Benefits:	$ N/A
TOTAL:	**$105,000**

Uneconomic Remnant? ☐ Yes ☑ No If yes, enter value: $ N/A and describe:

Reviewer Assumptions & Limiting Conditions:

- This appraisal review is based solely on data and information contained in the appraisal report that is the subject of this review.
- It is assumed that the data and information are factual and accurate,
- I reserve the right to consider any additional data or information that may subsequently become available and to revise the opinions and conclusions in this report if such data and information indicate the need for such a change.
- All of the assumptions and limiting conditions contained in the appraisal report that is the subject of this review are also conditions of this review unless otherwise stated.

Review Appraiser Certification:

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this appraisal review report are true and correct.
- The reported analyses, opinions, and conclusions in this review report are limited only by the assumptions and limiting conditions stated in this review report, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of the work under review and no personal interest with respect to the parties involved.
- In May of 2017, I reviewed an appraisal report on this same property, which was also prepared by Steve MacSwain, MAI, and dated April 26, 2017. I have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of the work under review within the three-year period immediately preceding acceptance of this current assignment.
- I have no bias with respect to the property that is the subject of the work under review or to the parties involved with this assignment.
- My engagement in this assignment was not contingent upon developing or reporting predetermined results.

- My compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in this review or from its use.

- My compensation for completing this assignment is not contingent upon the development or reporting of predetermined assignment results or assignment results that favor the cause of the client, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal review.

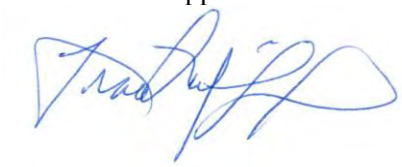
- My analyses, opinions, and conclusions were developed and this review report was prepared in conformity with the requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* as well as the Appraisal Institute's Code of Professional Ethics & Standards of Professional Appraisal Practice, which include the *Uniform Standards of Professional Appraisal Practice*.

- The use of this review report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

- I have not made a personal inspection of the subject of the work under review.

- No one provided significant appraisal, appraisal review, or appraisal consulting assistance to me during the review process.

- As of the date of this report, I have not completed the continuing education program of the Appraisal Institute. I have, however, completed the State of Alaska's continuing education requirements for real estate appraisers.



Franklin M. King, MAI
Review Appraiser

Alaska General Real Estate Appraiser
Certificate #APRG 18 — Expires 6/30/19

Date of Appraisal Review Report: August 21, 2018

APPRAISAL REPORT CHECKLIST	PROJECT NAME: WINDY CORNER, SEWARD HIGHWAY MILEPOST 105-107
By	**DOT & PF PROJECT NO. 0A3-1(34)/56631**
Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	**PROPOSED MATERIAL SITE 6 (STATE OF ALASKA)** KVC FILE NO. 18-101D

Appraiser: Steve MacSwain, MAI **Review Appraiser:** Franklin M. King, MAI

☑ Special Instructions: The appraiser was instructed by his client, DOWL, Inc., to base the appraisal on the hypothetical condition that the 15.8 acres constituted a platted, legally marketable, stand-alone property rather than an unsubdivided portion of a 495,000-acre park.

Note: If item is not applicable, write "N/A" by the box for that item

☑ Current ROW Plans
☑ Appraisal matches plans
☑ Narrative Appraisal Summary Completed
☑ Certificate of Appraisal signed
☑ Scope of appraisal, Purpose and function
☑ Assumptions & Limiting Conditions
☑ Area & Neighborhood Analysis
☑ Land area and shape
☑ Access/Frontage
☑ Topography
☑ Soils
☑ Utilities
☑ Rights to be acquired
☐ Easements and encroachments shown
☑ Present use
☑ Zoning / Restrictions (Before & After)
☑ Known Hazards: Environmental, Flood
N/A Improvements described + sketch + shown on plat
N/A Specialty items or Tenant owned improvements
☑ Assessed Value/tax trends
☑ Plat/Plot Plan/Parcel Map
☑ Photos: land & improvements
☑ Ten-Year Sales History
☑ Highest and best use
☑ Approaches: Sales Comparison
☑ Support for Adjustments or Assumptions
☑ Value of the whole
☑ Conclusion and, if applicable, reconciliation
☑ Value of acquisition & allocation
☑ Remainder as a part of the whole
☑ Value reasonable and consistent
☐ Owner contact verification
N/A Title Report and Legal Description

Comparable Sales data should include:
☑ Comparable Sales map
☑ Size
☑ Shape
☑ Topography
☑ Utilities
☑ Soils
☑ Use / Zoning
☑ Access and Grade relationship
N/A Improvement allocation
☑ Photographs
☑ Verification by the appraiser

After Value: Has the appraiser considered
N/A Highest & Best Use change
N/A Access/Frontage issues
N/A Area/Shape
N/A Elevation or Drainage change
N/A Improvements
N/A Approaches: Sales Comparison
N/A Support for Adjustments
N/A Support for Damages/Special Benefits/Cost-to-cure

Issues: N/A

License #: APRG18
Effective: 06/06/2017
Expires: 06/30/2019

STATE OF ALASKA

Department of Commerce, Community, and Economic Development

Division of Corporations, Business, and Professional Licensing

Real Estate Appraisers

Licensee: **FRANKLIN M. KING**

License Type: **Certified General Real Estate Appraiser**

Status: **Active**

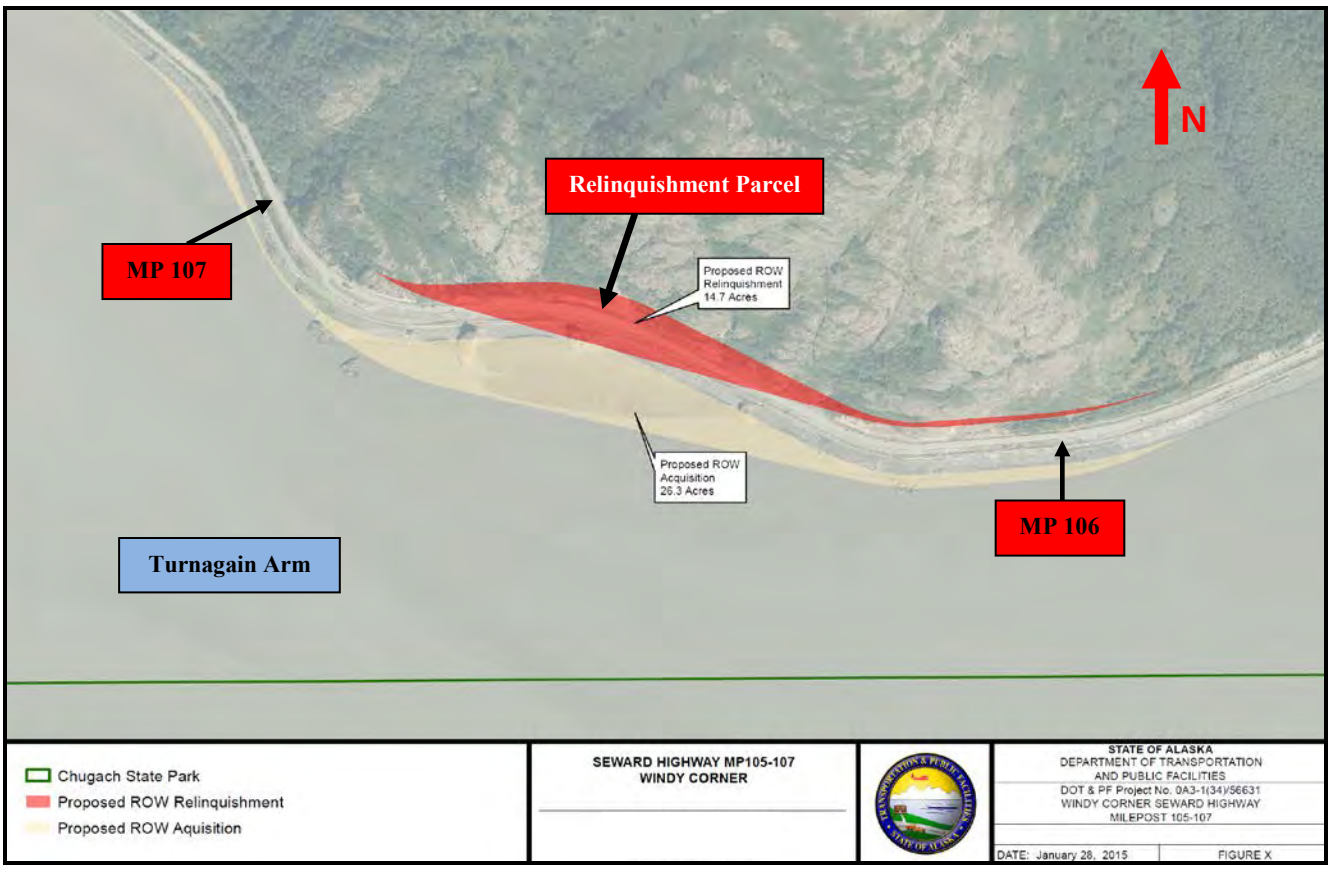
Commissioner: Chris Hladick

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

APPRAISAL REPORT

Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
“Relinquishment Parcel”



Effective Appraisal Date: August 8, 2018 File No. 18-3182(R)

Submitted To:

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

MacSwain Associates LLC

4401 Business Park Blvd., Suite 22
Anchorage, Alaska 99503
Telephone: 907-561-1965
Facsimile: 907-561-1955
s.macswain @macswain.com

August 10, 2018

Claire Mueller
Real Estate Specialist
DOWL, Inc.
4041 B Street
Anchorage, Alaska 99503

Re: Windy Corner Seward Highway Project
Milepost 105-107 (0A3-1(34)/56631)
"Relinquishment Parcel"

Dear Ms. Mueller:

We have prepared an *Appraisal Report* that analyzes the above-referenced property affected by the Windy Corner Seward Highway Project. The purpose of the appraisal is to estimate the market value of property rights acquired pertaining to the partial acquisition of an 87.63-acre parcel, as of August 8, 2018 (effective date of value). The property rights appraised is the fee simple interest. Totaling 14.70 acres, the acquired land consists of steep sloping bedrock and level land, located between Rainbow and Indian, Alaska. We note that MacSwain Associates LLC appraised "Relinquishment Parcel" effective April 13, 2017, for the same client, intended use, and intended users. Our opinion of value of the property rights acquired was $231,300. Although we uncovered and analyzed new sale data during this new assignment, our analysis resulted in the same opinion of value.

Importantly, we were instructed by DOWL, Inc. to disregard any improvements, and to appraise the property as if under a single ownership, the State of Alaska. Therefore, analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

The appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP). Since UASFLA states an estimate of market value tied to exposure and marketing time is inappropriate and requires exclusion from the appraisal report, we invoke the jurisdictional exception rule permitted in USPAP.[1] This departure represents the only conflict between UASFLA and USPAP.

Based on the data, reasoning, and analysis contained in the appraisal report, it is our opinion the market value of the appraised property before and after the acquisition is as follows.

Value Before Acquisition	***Value After Acquisition***
$1,124,500	***$893,200***

Therefore, it is our opinion the market value of the property rights acquired, as of August 8, 2018, is as follows.

Market Value of Acquisition	**$231,300**

We direct your attention to the Assumptions and Limiting Conditions on Page 6 for an explanation of the restrictions and limitations of the report. If you have questions regarding our analysis or conclusion, please contact our office.

Respectfully submitted,

Steve MacSwain, MAI
State of Alaska Certificate No. 42

[1] Standard Rule 1-2(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their market value opinion. Section D-1b of UASFLA provides legal authority for invoking the Jurisdictional Rule.

Table of Contents

Title Page

Transmittal Letter **1**

Table of Contents **3**

Appraiser Certification **4**

Assumptions and Limiting Conditions **6**

Appraisal Summary **7**

Chapter 1: Premise of the Appraisal **8**

Chapter 2: Neighborhood Analysis **17**

Chapter 3: Property Description and Analysis **20**
Property Photographs **23**
Property Photograph Location Maps **26**

Chapter 4: Highest and Best Use Analysis **27**

Chapter 5: Property Valuation – Before Acquisition **30**

Chapter 6: Property Valuation – After Acquisition **55**

Chapter 7: Market Value of Acquisition **58**

Addendum
Comparable Land Sales
Appraiser Qualifications

Appraiser Certification

The undersigned certifies that to the best of their knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and legal instructions, and are the personal, unbiased professional analysis, opinions, and conclusions of the appraisers.
- The appraisers have no present or prospective interest in the property appraised and no personal interest or bias with respect to the parties involved.
- The compensation received by the appraisers for the appraisal is not contingent on the analyses, opinions, or conclusions reached or reported.
- The appraisal was made and the appraisal report prepared in conformity with the *Uniform Appraisal Standards For Federal Land Acquisitions* (UASFLA).
- The appraisal was made and the appraisal report prepared in conformity with Appraisal Foundation's *Uniform Standards of Professional Appraisal Practice* (USPAP), except to the extent that the *Appraisal Standards For Federal Land Acquisitions* (UASFLA) required invocation of USPAP's Jurisdictional Exception Rule, as described in Section D-1 of the *Appraisal Standards For Federal Land Acquisitions*.
- The appraisers have made a personal inspection of the property appraised. Property owner contact information was not provided to the appraisers.
- Jim Dahl provided significant professional assistance to the appraiser.
- The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of Professional Appraisal Practice of the Appraisal Institute.
- The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- As of the date of this report, Steve MacSwain, MAI has completed the continuing education program of the Appraisal Institute.
- As of the date of this report, Steve MacSwain, MAI is a certified General Real Estate Appraiser in the State of Alaska, and has completed the education requirements through June 2019.

- MacSwain Associates LLC appraised the subject parcel effective April 13, 2017, for the same client, intended use, and intended users. We have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

- Our opinion of market value of the property rights acquired, as of August 8, 2018, is $231,300.



Steve MacSwain, MAI
State of Alaska Certificate No. 42

8/10/18
Date

Assumptions and Limiting Conditions

This appraisal report is subject to the following **Hypothetical Condition**. Use of this hypothetical condition might have affected the assignment results.

- We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.

This appraisal report is subject to the following Assumptions and Limiting Conditions.

- We assume no responsibility for the legal descriptions provided or for other matters pertaining to legal or title considerations. We assume title to the appraised property is marketable unless otherwise stated.
- We appraise the property free and clear of all liens or encumbrances unless otherwise stated.
- We believe the information furnished by others is reliable, but we do not guarantee its accuracy.
- We assume all engineering studies are correct. We believe all maps, surveys, and other illustrative material are accurate. We include these exhibits only to help the reader visualize the appraised property.
- We assume there are no hidden or unapparent conditions that render the property more or less valuable. We assume no responsibility for such conditions or for obtaining the engineering studies that may be required to discover them.
- We assume the appraised property is in full compliance with all applicable federal, state, and local environmental regulations and laws unless the lack of compliance is stated, described, and considered in the appraisal report.
- Possession of this report, or a copy thereof, does not carry with it the right of publication.
- The appraisers are not required to give consultation, testimony, or attend court proceedings with reference to the subject property without prior arrangements.
- The appraisers acknowledge the appraisal report may be available for public review upon request. However, this right does not allow dissemination to the public through advertising, public relations, news, sales, or other media without prior written consent and approval from the appraisers.
- We did not observe any hazardous material or other type of environmental contamination that may affect the appraised property. Furthermore, we do not have any knowledge that such substances exist. However, the presence of environmental conditions may impair property value. Therefore, we urge the client to retain an environmental assessment for discovery and evaluation.

Appraisal Summary

Property Type:	Vacant land
Purpose of Appraisal:	Provide market value opinion of property rights acquired
Property Rights Appraised:	Fee simple interest
Legal Description:	Based on a review of the available information, the appraised acquisition is located within Sections 2 and 3, Township 10 North, Range 2 West, Seward Meridian.
Property Owner:	State of Alaska
Tax Parcel No:	N/A (exempt from taxation)
Location/Neighborhood:	Located from about Milepost 105.7 to 107.4 of the Seward Highway between Rainbow and Indian, Alaska
Land Area:	Larger Parcel – 87.63 Acres Acquisition – 14.70 Acres Remainder Parcel – 72.93 Acres
Access:	We presume legal road access
Topography:	Steep slope to the north; level to undulating; tidelands
Utility Service:	Electricity and telephone
Easements and Restrictions:	None identified
Zoning:	Located outside any zoning authority
Improvement Description:	None
Highest and Best Use:	Transport or distribution corridor
Environmental Condition:	No evidence of adverse environmental conditions observed
Property Inspection Date:	August 8, 2018
Effective Date of Appraisal:	August 8, 2018
Report Date:	August 10, 2018
Market Value Before Acquisition:	$1,124,500
Market Value After Acquisition:	$893,200

Market Value of Acquisition: $231,300

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

Chapter 1: Premise of the Appraisal

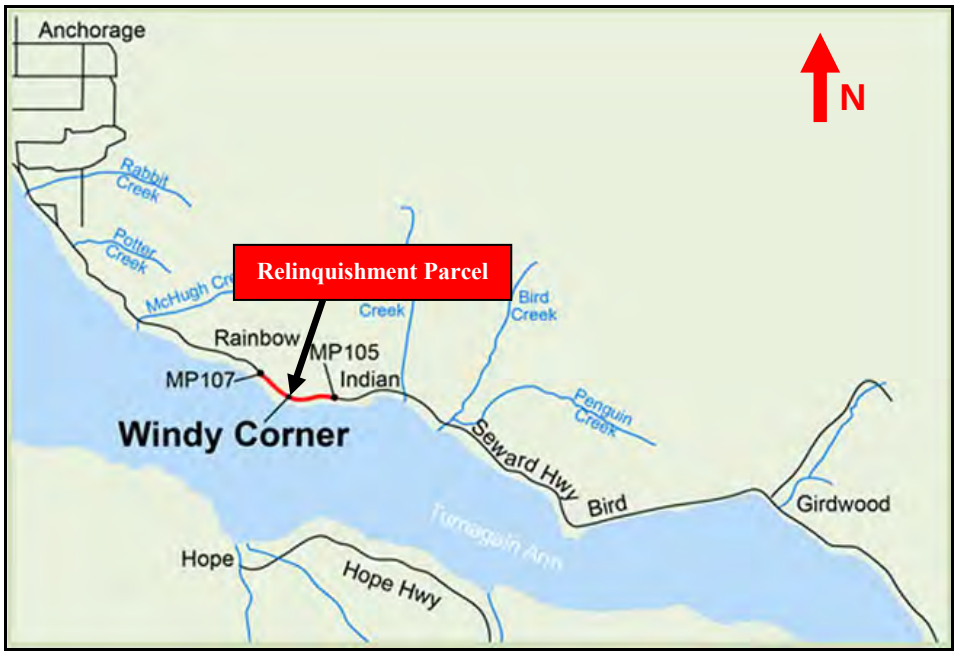
Overview

We have prepared an *Appraisal Report* that analyzes land within existing rights of way and adjacent tidelands. The State of Alaska intends to acquire 14.70 acres referred to as "Relinquishment Parcel," of an 87.63-acre larger parcel as part of a proposed road improvement project. The appraised property is located from about Milepost 105.7 to 107.4 of the Seward Highway, between Indian and Rainbow, Alaska. The proposed partial acquisition is necessary in conjunction with construction of a road improvement project. This appraisal is intended to comply with requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and *Uniform Standards of Professional Appraisal Practice* (USPAP).

Project and Acquisition Summary

Project Summary: The project intent is to address traffic safety concerns in the vicinity of Windy Corner by realigning the highway and the railroad to meet current design standards. The new alignment will also create space for new roadside recreational facilities and wildlife viewing areas (including parking and walkways) with acceleration and deceleration lanes for turning traffic.

Project Location Map



Specifically, the project, located within the Municipality of Anchorage between Indian and Rainbow, involves realigning and constructing a divided two-lane highway from Milepost 105 to 107, and relocating and realigning the Alaska Railroad Corporation (ARRC) tracks. The space created by the road and rail realignment will accommodate improved parking/pullout facilities on both sides of the highway with new auxiliary lanes to accommodate traffic entering and exiting the highway.

Acquisition Summary: The analysis and valuation reflects the partial acquisition of vacant land.

Purpose of Appraisal	The purpose of the appraisal is to form a market value opinion for a potential voluntary acquisition adhering to UASFLA and USPAP.
Client	Our client is DOWL, Inc.
Intended Use of the Appraisal Report	The intended use of the report is to assist with compensating the property owner for the property rights acquired. The appraisal report is not intended for any other use.
Intended Users of the Appraisal Report	The intended users of the report are DOWL, Inc., the State of Alaska, and the National Park Service.
Date of Property Inspection	August 8, 2018
Effective Date of Appraisal	The effective date of appraisal is August 8, 2018, which represents the property inspection date.
Report Date	August 10, 2018

Definition of Market Value

The definition of market value is the basis of our analysis and valuation of the appraised land. *Market value* is defined as follows.

Market value is the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of value, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property.[3]

Property Rights Appraised

The property rights appraised is the *fee simple interest, which* is defined as follows.

Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.[4]

Property Owner

A title report was requested from the client, but not provided. Based on review of public records, the appraised property is owned by various agencies of the State of Alaska. Importantly, our client has instructed us to appraise the property as if under a single ownership, the State of Alaska.

Legal Description

We requested a preliminary title report, but we did not receive this document. However, we did receive partial title abstracts from DOWL, Inc. staff that included court decisions, Patents, Recorder's Office document displays and case abstracts, and Master Title Plats pertaining to the appraised property. Although we rely upon this data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

Based on a review of the available information, the appraised acquisition is located within Sections 2 and 3, Township 10 North, Range 2 West, Seward Meridian.

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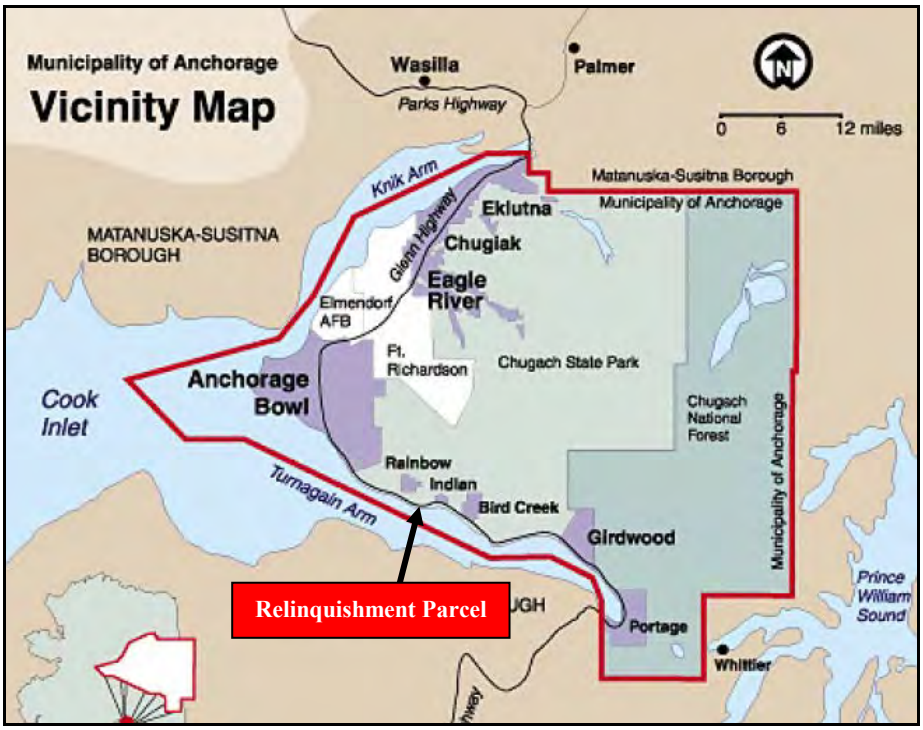
[3] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 10.

[4] *Appraisal of Real Estate*, Fourteenth Edition (2013), by the Appraisal Institute, p. 5.

Identification of Real Estate Appraised

Property Type:	Vacant land within a transportation corridor
Neighborhood:	Turnagain Arm
Location:	Located from about Milepost 105.7 to 107.4 of the Seward Highway between Rainbow and Indian, Alaska

Location Map



Property History

Property and Occupancy/Use History: The subject parcel is publicly owned land located within the boundaries of the Seward Highway and Alaska Railroad rights of way and adjacent tidelands. Known uses of the property include the Seward Highway, Alaska Railroad tracks, and scenic/wildlife viewing areas.

10-Year Property Sale History: A title report was requested but not provided. Review of public records indicates no property sales in the past 10-year period.

Rental History: There is no record of rental or lease history for the subject parcel.

Assessed Value and Real Estate Taxes

The appraised parcel is owned by agencies of the State of Alaska, and not subject to taxation.

Larger Parcel Determination

We determined that the larger parcel is a portion of a transport or distribution corridor, which includes 87.63 acres of uplands and adjacent tidelands. Explanation of this determination is located in the highest and best use analysis section of this report.

Hypothetical Condition

We were instructed by DOWL, Inc. to disregard any improvements, and to appraise the property as if under a single ownership, the State of Alaska. Therefore, analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

Appraisal Methodology

Per UASFLA, we employ the before and after methodology to estimate the market value of the acquisition. First, we value the property before the acquisition; then we value the property that remains after the acquisition. The difference between the before and after values is the market value of the acquisition.

We determined that the appraised property, or larger parcel, represents a portion of a transport or distribution corridor that extends from Anchorage to the Kenai Peninsula. We employ the across the fence (ATF) methodology to estimate the value of the larger parcel. This methodology is a reliable technique of measuring land value for a corridor-type property. The premise of this methodology is the corridor land is as valuable as the land it passes, prior to consideration of corridor factor and usage factor adjustments. Since a majority of the corridor from Indian to the weigh station crosses through near-identical land, we use the key-parcel technique in the comparative analysis. Importantly, the land it crosses includes three different physical types of land (low-utility uplands, high-utility uplands, and tidelands) that contribute differently.

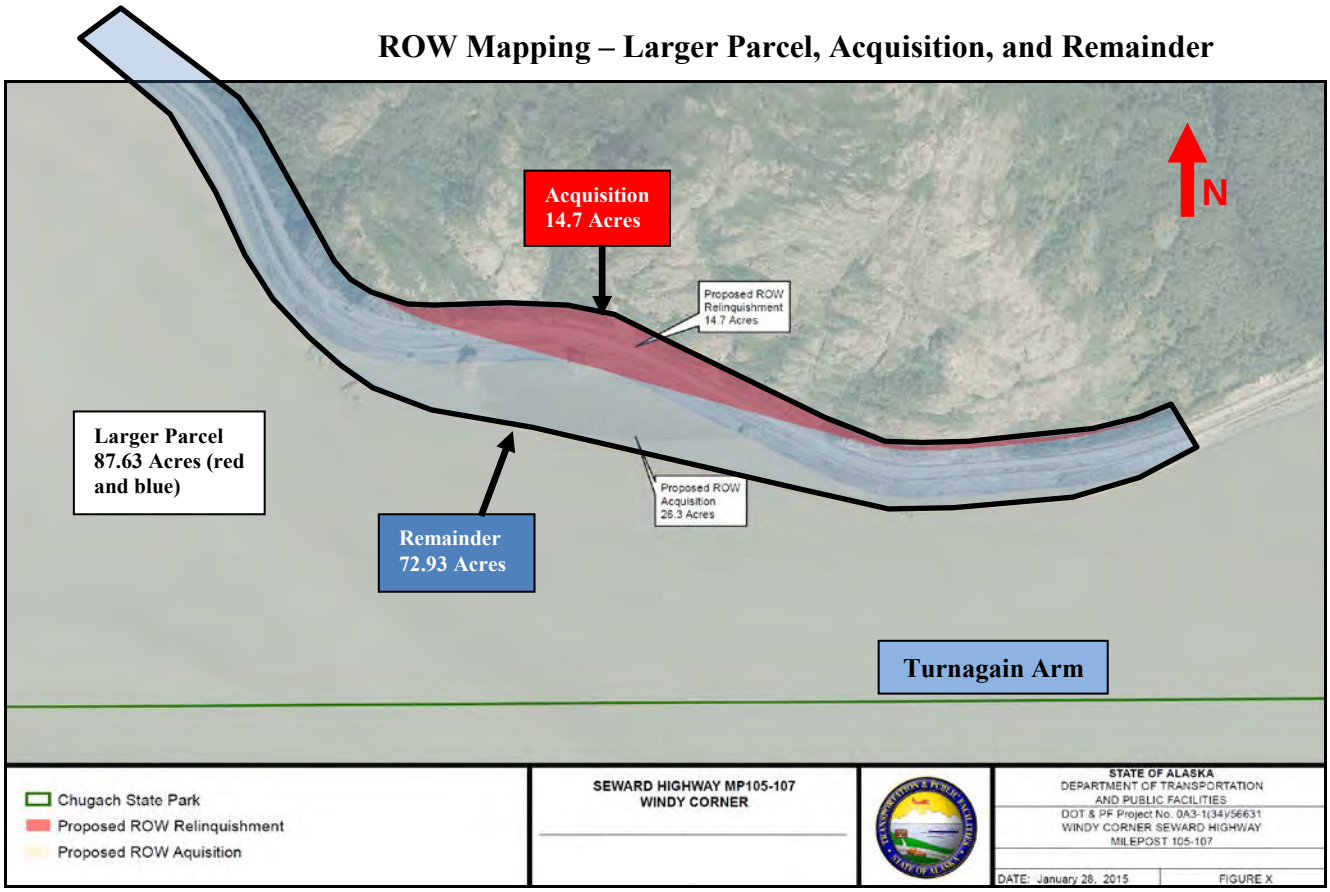
Because of a lack of sales with tidelands, high utility uplands, and low utility uplands, application of direct sale comparison to the key parcel is not possible without significant appraiser judgment. Therefore, we apply

an allocation technique that is similar to the concept of contribution. Though most often used to allocate land value to improved properties when land sale data is lacking, we believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. Again, this technique is utilized because a lack of market data prevents application of a more direct method.

Since the ATF methodology is a variation of the sales comparison approach, we made a comprehensive search of land sales and choose the most similar to perform the comparative analysis of each type of land that makes up the key parcel, relying upon qualitative analysis. After developing unit values of each type of land the corridor passes, we apply these unit values to the larger parcel to develop our estimate of market value before the acquisition. We then apply the same analysis to estimate the value of the remainder parcel, from which we develop our final estimate of value of the acquisition.

The ROW map below illustrates the partial acquisition affecting the appraised parcel, while the table on the following page provides a comparative analysis before and after the acquisition.

ROW Mapping – Larger Parcel, Acquisition, and Remainder



Before and After Acquisition Summary

	Larger Parcel (Before Acquisition)	Remainder Parcel (After Acquisition)
Land Area:	87.63 Ac.	72.93 Ac.
Low-Utility Uplands:	49.07 Ac.	36.87 Ac.
High-Utility Uplands:	12.26 Ac.	9.76 Ac.
Tidelands:	26.30 Ac.	26.30 Ac.
Shape:	Irregular	Similar
Road Access:	Yes	Same
Topography:	Tidelands, level lands, steep sloping	Similar
Soils:	Mudflats, bedrock	Same
Utilities:	E & T	Same
Easements and Restrictions:	None identified	Same
Improvements:	Assumed vacant	Same
Zoning:	Not zoned	Same
Highest and Best Use:	Transport or distribution corridor	Same

Scope of the Appraisal

Jim Dahl preformed the most current inspection of the appraised property, and assisted Steve MacSwain, MAI with data collection and analysis. In addition, Steve MacSwain, MAI administered the appraisal process, reviewed draft appraisals, and concluded with an opinion of value. The scope of the appraisal is summarized as follows.

- Steve MacSwain and Jim Dahl inspected the subject property on August 8, 2018, and prior dates;
- Reviewed information provided by DOWL, Inc. including parcel and project mapping;
- Reviewed Municipality of Anchorage (MOA) mapping;
- Reviewed Municipal Code pertaining to zoning;
- Reviewed *Turnagain Arm Comprehensive Plan;*
- Reviewed *Consulting Assignment for the Analysis of Corridor Enhancement Factor for a Portion of Alaska Railroad Corporation's Corridor* prepared in 2004 by Randy L. Seale, MAI of Allen, Williford & Seale, Inc.;
- Observed the land use pattern of the Turnagain Arm market district;
- Collected and analyzed economic data pertaining to the Turnagain Arm market district;

- Interviewed Brokers that list Turnagain Arm district properties or specialize in marketing these properties;
- Reviewed USGS topographical maps and aerial mapping;
- Performed a land use analysis;
- Collected and analyzed comparable land sales;
- Confirmed land sales with the buyer, seller, Broker, or other knowledgeable third party;
- Relied upon the ATF methodology (sales comparison and allocation technique) to estimate market value of the property before the acquisition;
- Relied upon the ATF methodology (sales comparison and allocation technique) to estimate market value of the property after the acquisition; and
- Concluded with an opinion of market value of the acquisition by relying upon the before and after methodology.

Exposure Time

We invoke the Jurisdictional Exception Rule permitted in USPAP to comply with Section 9 of UASFLA that states an estimate of market value linked to an exposure or marketing time must be excluded from the appraisal report.[5]

Statement of Competency

MacSwain Associates LLC has completed numerous appraisals of vacant tracts of land throughout Alaska, including along the Seward Highway from Anchorage to Girdwood. Representative clients include lending institutions, government agencies, property owners, property managers, and private parties. A summary of Steve MacSwain, MAI's experience and professional qualifications are located in the addendum. Steve MacSwain, MAI has the knowledge and experience required by the competency provision of USPAP to complete this appraisal assignment credibly.

[5] Since Standard Rule 1-1(c) of USPAP requires the appraiser to estimate a reasonable exposure time in conjunction with their opinion of value, we invoke the Jurisdictional Exception Rule that permits departure.

Summary of Appraisal Problem

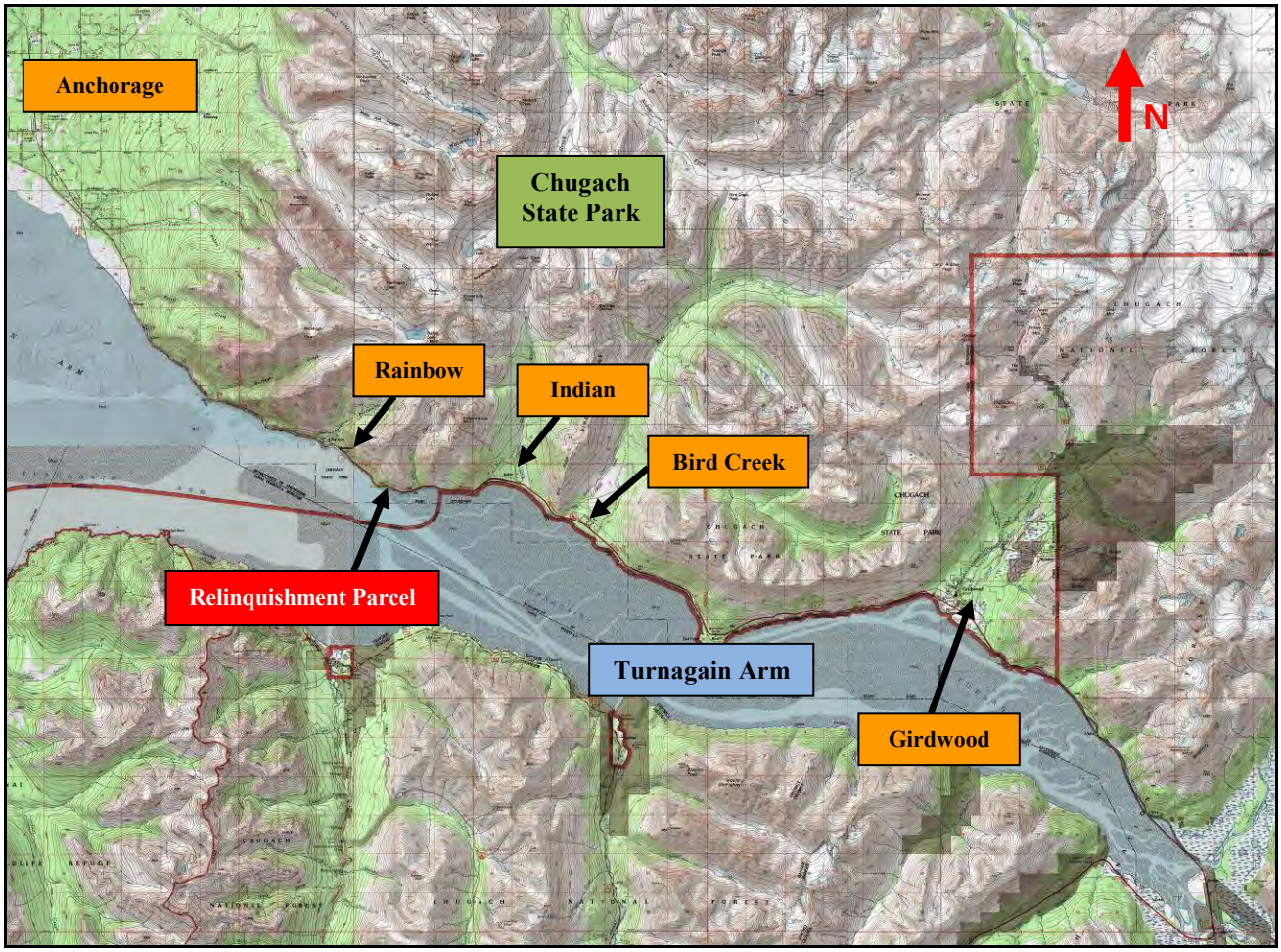
The special appraisal problem encountered was a lack of sales that included all three types of land the corridor passes. This resulted in employing an allocation technique that determined the contribution of each type of land based upon direct sale comparison. Although sale activity is scarce, we analyzed sufficient data to develop a market-supported conclusion for each type of land. However, the scarcity of sales requires use of qualitative adjustment techniques rather than paired analysis that measures differences by quantification. Despite these deficiencies, we performed a reliable analysis that concludes with a credible estimate of market value.

Chapter 2: Neighborhood Analysis

Overview

The neighborhood is the Turnagain Arm District of the Municipality of Anchorage. The reader is referred to the maps below and on following pages that illustrate neighborhood boundaries.

Location Map

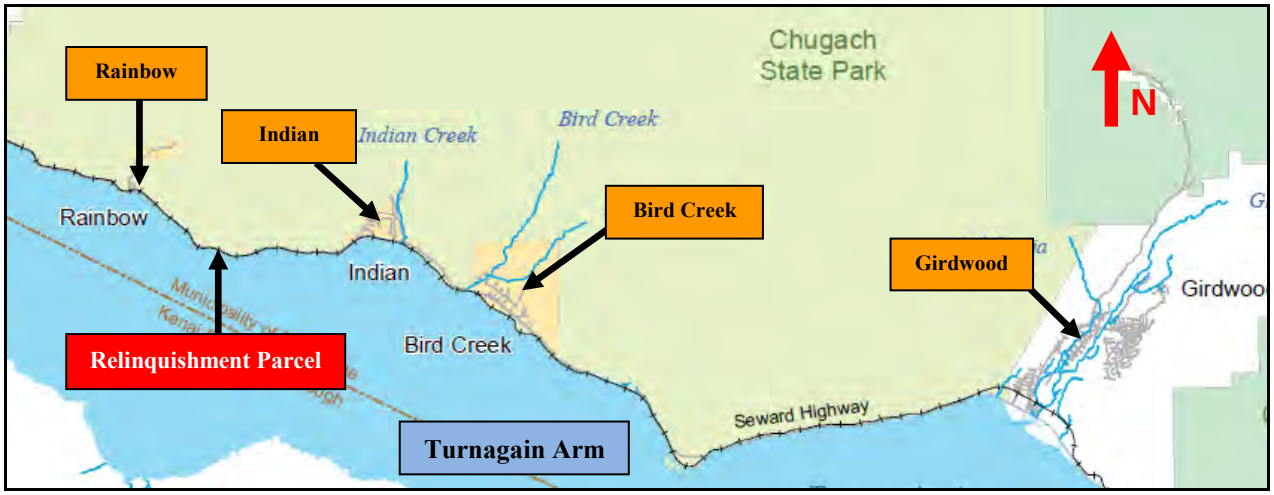


General Neighborhood

The general neighborhood is within the Turnagain Arm district and the area along the Seward Highway from Girdwood to Anchorage. The general neighborhood also includes the communities of Rainbow, Indian, and Bird Creek. According to the Municipality, the neighborhood has a population range from 350 to 375 residents. The predominate development pattern in the neighborhood is residential. Commercial development fronts the Seward Highway corridor and is located in Indian

and Bird Creek. Commercial development includes service and retail use such as restaurants, gas stations, automobile repair, and lodging.

Neighborhood Map



According to the Turnagain Arm Comprehensive Plan, Rainbow Valley developed under unusual circumstances with a group of landowners sharing plots of land for their individual homes, without actual platted lot boundaries. According to the homeowner's association, no vacant private land exists in the valley. All of the useable land is developed with rural residential homes and associated accessory use structures.

The Indian community includes a combination of large-lot rural residential developments with some scattered commercial uses along the Seward Highway and up-valley, including a small commercial nursery and Indian Valley meats, a large-scale meat processing facility. The east side of the valley includes a row of older homestead residences, some with renter cabins and two-family developments. Chugach Park View Subdivision in Indian is the most recent residential subdivision. The 35-lot subdivision is located between Indian Valley Road and Ocean View Road and offers large lots averaging 2.5± acres, paved streets, and partial Turnagain Arm and mountain views. The neighborhood offers various access points to Chugach State Park.

Bird Creek developed much like Indian, dominated by larger lot rural type residential development, with some scattered commercial uses along the highway and some small-scale commercial businesses within the residential area. A telecommunications facility is located along the highway and an automobile maintenance facility operates near the site's east end. A sawmill operates within the residential lots as a permitted use.

Chugach State Park contains approximately 495,000 acres of land and is one of the four largest state parks in the United States. The park's westernmost boundary lies in the western foothills of the Chugach Mountain Range and is a mere seven miles to the east of downtown Anchorage. The park is further defined by the Knik Arm on the north, Turnagain Arm on the south, and Upper and Lower Lake George and Chugach National Forest on the east.

Additional recreation opportunities in the neighborhood include State of Alaska campgrounds, seasonal salmon fishing at Bird Creek, and the "Bird to Girdwood" paved bike trail.

Summary

The Turnagain Arm district is an established community between Anchorage and Girdwood. Development in the district centers in the Indian, Bird Creek, and Girdwood. The Seward Highway and adjacent railroad bisects the area and is the primary arterial providing access to/from Anchorage to the Kenai Peninsula to the south.

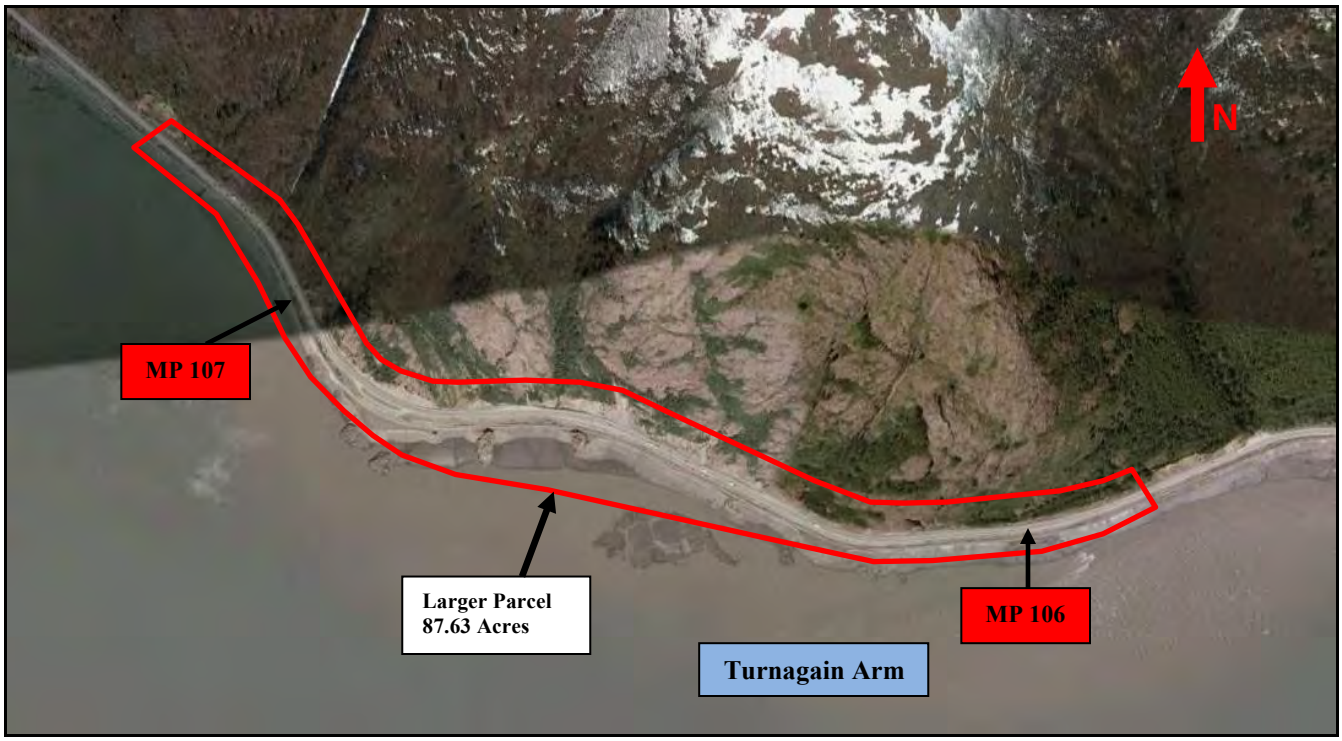
Chapter 3: Property Description and Analysis

Overview

Our appraisal inspection and available mapping are the principal data sources used to describe the appraised property. We requested a preliminary title report, but we did not receive this document. However, we did receive title abstracts from DOWL, Inc. staff that included deeds, easements, Recorder's Office document displays, Master Title Plats, and survey data pertaining to the appraised property. Although we rely upon these data, our interpretation of easements, restrictions, and reservations may change with review of a preliminary title report.

The subject larger parcel consists of a 87.63 acres located within the Seward Highway right of way and adjacent tidelands, from about Milepost 105.7 to 107.4, near Indian, Alaska. We use a tabular-type format to describe the physical character of the larger parcel. The most important physical factor that affects land use potential is topography and soil geology. We discuss zoning and other regulatory requirements that affect land use potential after describing the parcel. Photographs that follow provide a visual overview while inserted exhibits help illustrate the physical character of the parcel.

Google Earth Aerial Imagery (April 2011)



Land Description

Overview: The larger parcel consists of a swath of land ranging from about 300 to 750 feet wide and extends 1.5 miles along a northwest/southeast path. The parcel includes both uplands and adjacent tidelands. The utility of the parcel varies greatly by topography between tidelands (30% of larger parcel), high-utility uplands (14%), and low-utility uplands (56%). These high-utility uplands are generally level, and vary from about 40 to 120 feet wide.

Present Use: The Seward Highway, Alaska Railroad tracks, and scenic/wildlife viewing areas; *we assume the property is vacant and exclude from valuation all asphalt paving, railroad tracks and equipment, or any other improvements that may exist.*

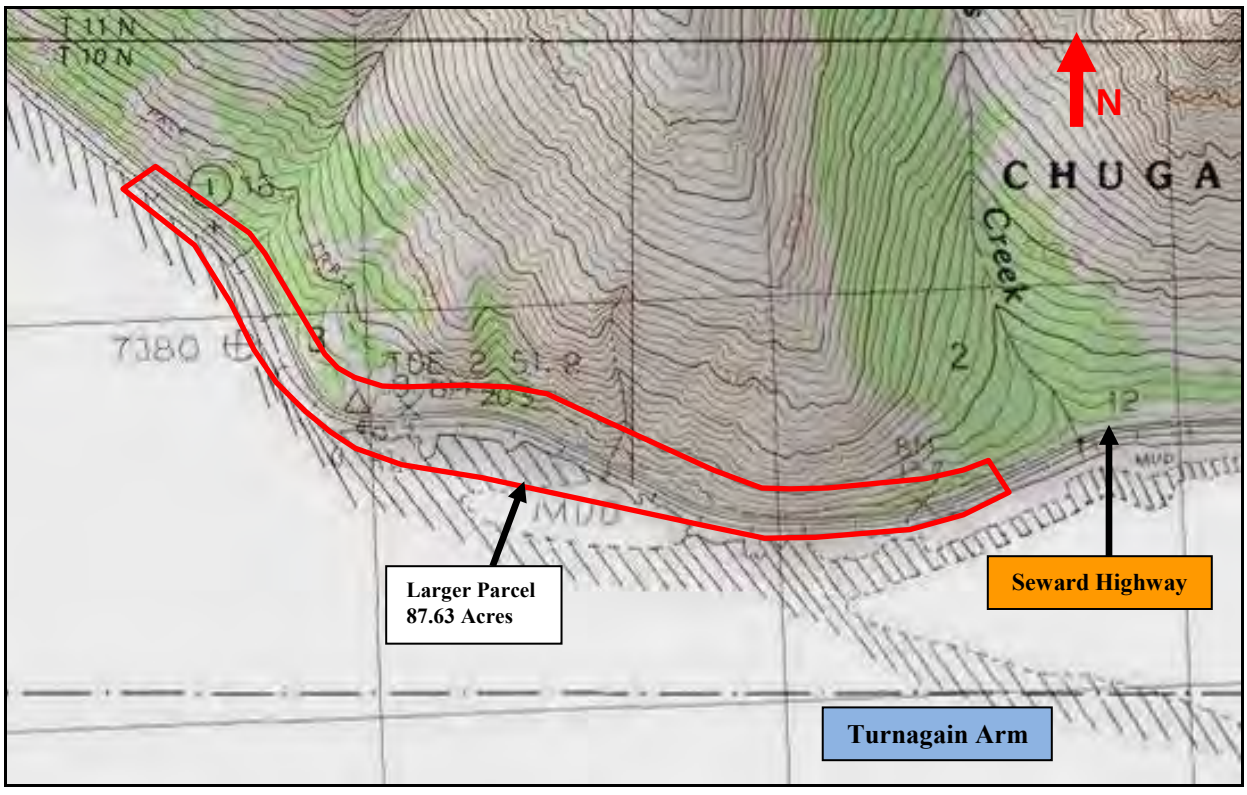
Total Land Area: 87.63± acres or 3,817,163± square feet

Land Area by Type: Tidelands – 26.30± Acres (30%)
Flat Uplands – 12.26± Acres (14%)
Sloping Uplands – 49.07± Acres (56%)

Land Configuration: Irregular, relatively narrow, elongated shape

Access: We presume legal road access

National Geographic Topo Map



Topography: Varies greatly between submerged tidelands (30% of larger parcel), flat to undulating uplands (14%), and steep sloping uplands (56%)

Soils: Bedrock; mud, silt and sand

Vegetation: Brush and grasses, alder, willow, cottonwood, birch cover sloping uplands

Public Utilities: Electricity and telephone on site

Easements: None identified

Environmental Assessment: No evidence of adverse environmental conditions observed during the property inspection

Zoning: Located outside of any zoning authority

Land Use Regulations

Located outside of a zoning authority, there are legal regulations of the U.S. Corps of Engineers that would regulate filling of wetlands or tidelands, and the Department of Environmental Conservation (DEC) would regulate water and wastewater systems.

Subject Property Photographs

On Pages 23 through 25 are photographs taken by Jim Dahl on August 8, 2018, with a map depicting location of photographs on Page 26.

Property Photographs

Taken By: Jim Dahl August 8, 2018



Southeasterly view of westernmost portion of larger parcel



Southeasterly view of western portion of larger parcel; flat, high-utility uplands and steep, low-utility uplands

Property Photographs

Taken By: Jim Dahl August 8, 2018



Easterly view of central portion of larger parcel; flat, high-utility uplands and steep, low-utility uplands



Southeasterly view of central portion of larger parcel toward tidelands

Property Photographs

Taken By: Jim Dahl August 8, 2018



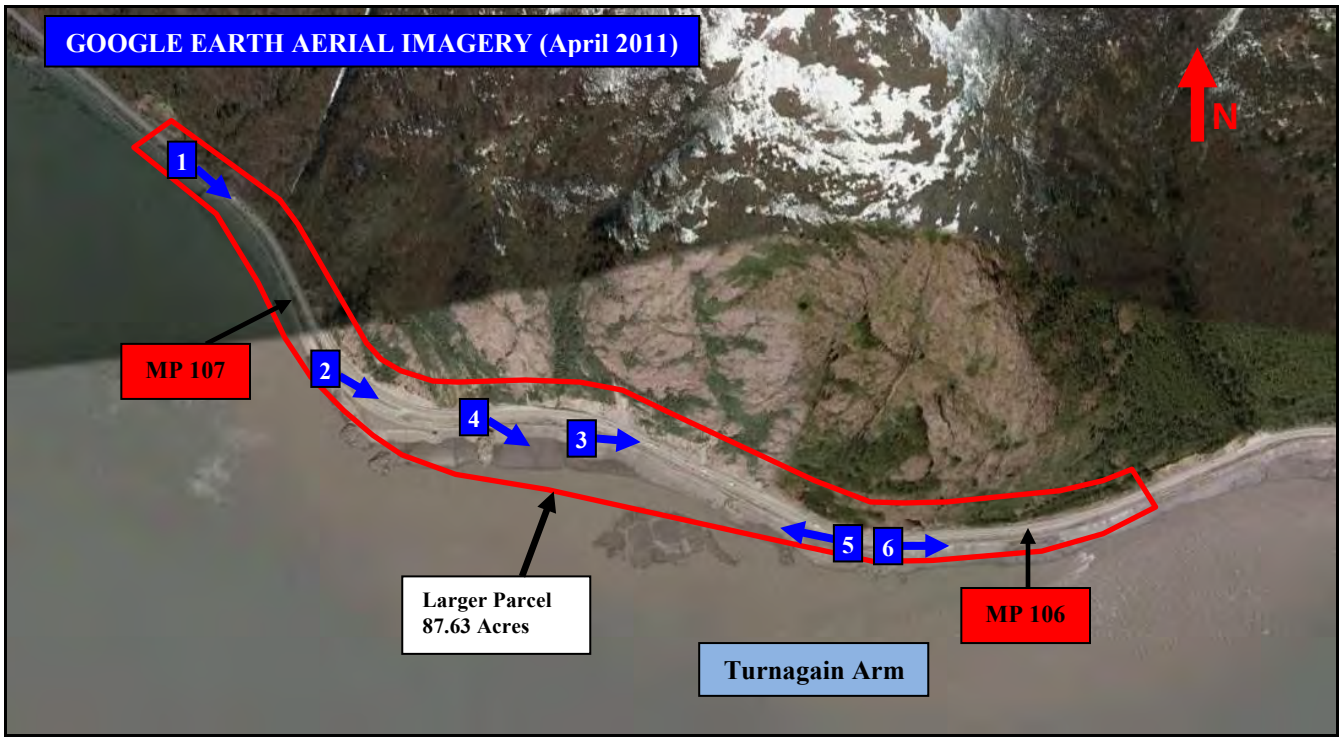
Westerly view of eastern portion of larger parcel toward tidelands



Easterly view of eastern portion of larger parcel

Property Photograph Location Map

Aerial Map Showing Photo Location and Direction



Chapter 4: Highest and Best Use Analysis

Overview

Highest and best use is a market-driven concept rather than a subjective conclusion based on the experience of the appraiser or a property owner's wishes. Economic incentive is the motivation that has a market-effect on the productivity or profitability of the land. Our market value estimate relies upon the following definition of *highest and best use*.

The highest and most profitable use for which the property is adaptable and needed or likely to be needed in the reasonably near future.[6]

The criteria for analyzing potential use are legally permissible, physically possible, financially feasible, and the degree of profitability. Importantly, USAFLA requires that the estimate of highest and best use must be an economic use. A highest and best use analysis follows.

Highest and Best Use Analysis

Physically Possible/Legally Permissible: The appraised larger parcel represents a swath of land that ranges from 300 to 750 feet wide and extends 1.5 miles along a northwest/southeast path. Located outside of a zoning authority, the only legal regulations pertain to permits for water and wastewater systems from Department of Environmental Conservation (DEC), and filling of tidelands from U.S. Corps of Engineers. Despite the presence of tidelands and low utility uplands, high utility uplands create a path between about 40 and 120 feet wide upon which development is most probable. Importantly, the parcel endpoints connect to other segments that are physically suitable for corridor-type development extending from Anchorage to Girdwood and beyond. Regarding the tidelands, a shallow offshore water depth, extreme tidal change, and intertidal sediment (mud, silt, sand) limit use. Because of shape and topographical constraints, few development alternatives are physically possible other than a corridor use.

Financially Feasible/Degree of Profitability: Transportation and utility development are financially feasible land use alternatives because of need for transport along Turnagain Arm, connecting Anchorage to the Kenai Peninsula and various communities along the way. Road, rail and utility transport provides an economic benefit to the supplier and a social benefit to the consumer. Thus, there is a financial incentive to undertake the risk and uncertainty of developing rail or utility lines.

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[6] Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions*, 6th ed. (Appraisal Institute, 2016), 22.

We consider transportation or utility development the most productive use of the appraised land. Since its endpoints connect to other segments that are physically suitable for corridor-type development, and provide economic and social benefits, we consider the appraised land a corridor. Thus, the highest and best use of the appraised land is a transport or distribution corridor.

Highest and Best Use	Transport or Distribution Corridor

Larger Parcel Consideration

Determining the larger parcel is a key to the appraisal problem. The three criteria for determining the larger parcel are unity of ownership, contiguity, and unity of use. Fundamental to the unity of use analysis is the principles of substitution, demand, and applied economics. Ignoring these principles will compromise the credibility of the larger parcel analysis.



The subject acquisition contains 14.7± acres of existing right of ways, most of which is low utility land. Contiguous lands include the remaining rights of way as well as adjacent tidelands, all owned by the State of Alaska. As stated, USAFLA requires that the estimate of highest and best use must be an economic use, and our analysis determined that use is transport or distribution corridor. While the corridor stretches along Turnagain Arm from Anchorage to the Kenai Peninsula, we

determined that a 1.5-mile stretch of land around the acquisition represents part of this corridor that is capable of being a distinct economic unit. This length of the corridor has relatively level to undulating terrain, as well as steep rock embankments and tidelands suitable for corridor expansion. Therefore, we determined the acquired parcel owned by the State of Alaska is a portion of an 87.63-acre portion of the corridor, considered the larger parcel.

Chapter 5: Property Valuation – Before Acquisition

Overview

We determined that the appraised property, or larger parcel, represents a portion of a transport or distribution corridor that extends from Anchorage to the Kenai Peninsula. We employ the ATF methodology to estimate the value of the larger parcel. This methodology is a reliable technique of measuring land value for a corridor-type property. The premise of this methodology is the corridor land is as valuable as the land it passes, prior to consideration of corridor factor and usage factor adjustments. Since a majority of the corridor from Indian to the weigh station crosses through near-identical land, we use the key-parcel technique in the comparative analysis. Importantly, the land it crosses includes three different physical types of land (tidelands, high utility uplands, and low utility uplands) that contribute differently.

Because of a lack of sales with tidelands, high utility uplands, and low utility uplands, application of direct sale comparison to the key parcel is not possible without significant appraiser judgment. Therefore, we apply an allocation technique that is similar to the concept of contribution. Though most often used to allocate land value to improved properties when land sale data is lacking, we believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. Again, this technique is utilized because a lack of market data prevents application of a more direct method.

Since the ATF methodology is a variation of the sales comparison approach, we made a comprehensive search of land sales and choose the most similar to perform the comparative analysis of each type of land that makes up the key-parcel. We rely upon qualitative analysis to measure differences between the sales and the three types of land making up the key parcel. After developing unit values of each type of land the corridor passes, we apply these unit values to the larger parcel.

Generally, a corridor-type property represents an assemblage of land that connects two destination points. Often, this assemblage produces greater utility, particularly land with multiple ownership and diverse use. Thus, the market value of the corridor may exceed the value indicated by the ATF methodology and require a market-derived "enhancement" factor. Our analysis indicates an enhancement factor does apply to the appraised lands because, though limited, demand from alternative users for the existing corridor exists.

Sales Comparison Analysis

Again, we use an allocation technique because a lack of market data prevents application of a more direct method. We believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. In the end, a comprehensive sales search provided sufficient data to perform reliable comparative analysis of the key parcel.

Our initial land sales search focused on the Turnagain Arm market district, but turned up limited sale data that offers a reasonable comparability to the subject uplands. Therefore, we expanded our search to include other similar access and topographical characteristics, and locations proximate to Chugach State Park, including Eagle River and Chugiak. Thereafter, we found eight sales to compare directly to the key-parcel uplands. The following table summarizes the primary sales we rely upon.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
10	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	12/13	$105,000	$42,000
11	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	9/08	$120,000	$48,000
14	West side of Ledyard Circle, north of Seward Highway near Milepost 103, *Indian*	TA	3.28	3/17	$115,000	$35,061
15	End of Reindeer Circle, and north side of Seward Highway near Milepost 103, *Indian*	TA	3.23	7/15	$215,000	$66,563

Sales 1, 3, 7 and 8 are located in Eagle River and Anchorage hillside and typify alternative home site or recreational lands with physical restraints comparable to the low-utility uplands of the key parcel. Sales 10, 11, 14 and 15 are located on or near the Seward Highway corridor along Turnagain Arm, and represent sites comparable to the high-utility uplands.

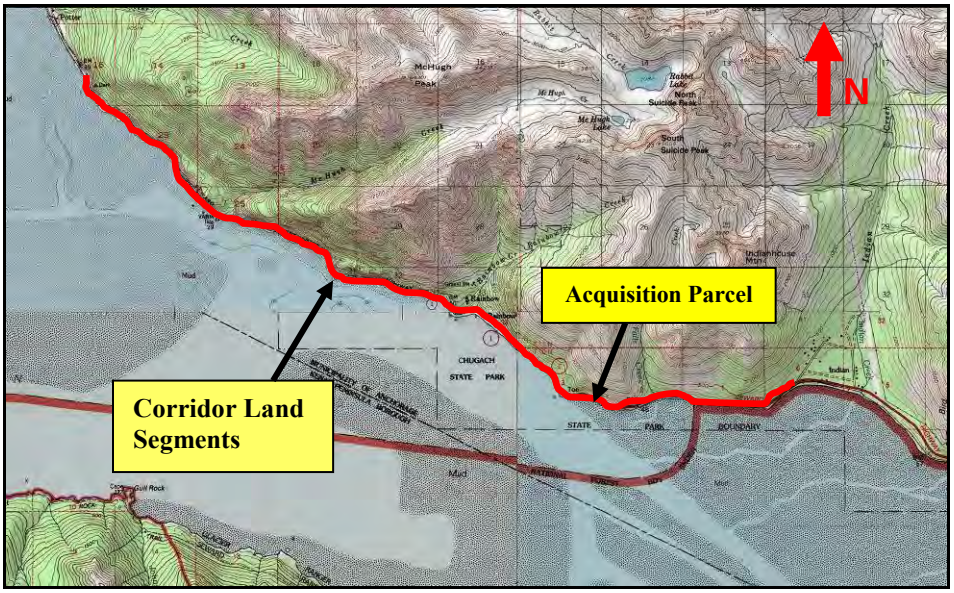
Regarding the comparative analysis, we use qualitative adjustments to measure differences between the sales and the subject. Qualitative adjustment uses a technique known as a relative comparison analysis, which represents a study of market relationships without recourse to quantification. By analyzing and interpreting market behavior, we rate various elements of comparison that influence price as superior, inferior, or similar. This adjustment technique is particularly useful in analyzing the comparable sales because of interrelationships between physical characteristics. The relative comparison grids on Pages 43 and 49 summarize the ratings of the primary land sales to the key parcel.

Since similar tideland sales do not exist, we estimate the value of adjacent uplands and then apply a market-supported price ratio to develop the tideland value. This ratio analysis allows comparison of tideland sales that differ in location and physical character, but have similar highest and best use. The rationale for employing this valuation technique is it reflects market behavior. Simply, our research found a distinct relationship between the price paid for tidelands and the adjacent uplands.

Key Parcel Description and Analysis

The key parcel represents typical-land adjacent to the corridor segments that start near the weigh station south of Potter's Marsh, and extend to the west end of Indian. Described on the next page is the physical, legal, and economic character of the key parcel.

Aerial Overview of Key-Parcel Physical Character



Property Rights Conveyed: Fee simple entitlements

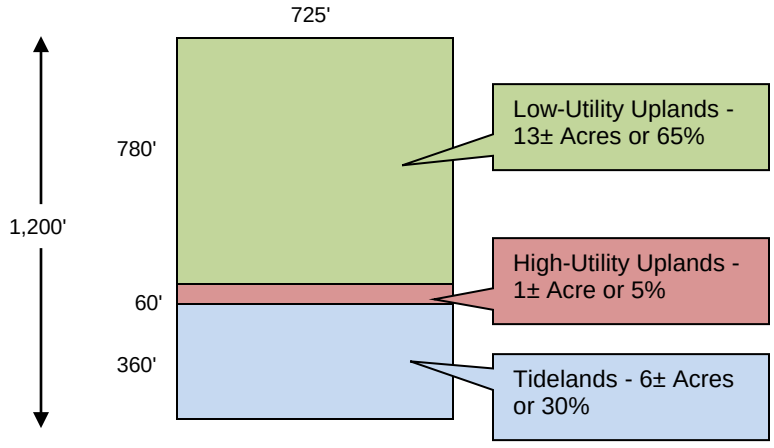
Location: The key parcel is located proximate to the northwest/southeast path of the Seward Highway and Alaska Railroad rights of way. Specifically, the key parcel represents a location from the weigh station south of Potter's Marsh to the west end of Indian.

Topography: This length of the corridor has a strip of relatively level to undulating terrain, as well as steep rock embankments and tidelands

Land Area: A crucial factor of the key-parcel analysis is estimating the size of land adjacent to the appraised corridor. We reviewed the current development pattern as well as land use requirements of this residential district. Parcels similar to the low-utility uplands range from 10± to 80± acres. Regarding the high-utility uplands, aside from the community of Rainbow, lands within this segment include similar narrow strips forming the corridor. These lands with relatively level to undulating terrain are generally about 40 feet wide, though there are small sections that widen to over 100 feet. Based on our analysis, we estimate the average width of the high-utility land is about 60 feet. After analysis, we determined the typical size of land segments adjacent to the corridor is 20± acres, with a width of 725± feet and depth of 1,200± feet. Based on a width of 60 feet for the high-utility uplands, this indicates a size of 1± acre or 5% of the key parcel. Regarding the tidelands, we estimate a size of approximately 30% of the key parcel or 6± acres. Therefore, the low-utility uplands represent 65% of the key parcel or 13± acres.

The following sketch displays the shape and size of the key parcel, with an allocation of the three types of land.

Key Parcel Sketch



Again, the key parcel consists of 13± acres of low-utility uplands, 1± acre of high utility uplands, and 6± acres of tidelands. We use these sizes through our allocation technique for comparison of each type of land.

Road Access: Presume legal road access

Other Physical Characteristics: The key parcel has a rectangular shape. Uplands soils are bedrock, while the tidelands consist of mudflats. Public utility infrastructure includes electricity in close proximity. View amenity includes Turnagain Arm and mountains. Tidelands characterized by shallow offshore water depth, extreme tidal change, and intertidal sediment (mud, silt, sand).

Highest and Best Use: Zoning of the key parcel is Turnagain Arm (TA) District. Permitted uses and densities within the TA District are to conform to the land use plan map, polices, land use definitions, and residential densities of the adopted *Turnagain Arm Comprehensive Plan*. The plan permits most types of low-density residential, commercial, and industrial use. However, physical character, particularly topography, does not support commercial or industrial use. By default, a recreation cabin or single-family home site are the most probable uses of the key parcel. Available data indicates price behavior does not differ significantly for Turnagain Arm District land used for single-family home sites or recreation lands. Therefore, we conclude that the highest and best use of the key parcel is recreation or residential home site.

Analysis of Elements of Comparison

The first step of the valuation process is to ascertain what comparative elements cause price to vary. Again, Sales 1, 3, 7, and 8 typify alternative home site or recreational lands comparable to the low-utility uplands of the key parcel. Sales 10, 11, 14 and 15 represent similar sites comparable to the high-utility uplands.

We determined conditions of sale, location and physical characteristics, i.e., size, access, topography, and utilities, have the greatest influence on price. Importantly, real property rights conveyed, financing terms, and market conditions had no effect on price behavior for these sales. An explanation of adjustments made follows.

Real Property Rights Conveyed

The property rights appraised is the fee simple interest, and each of the sales conveyed similar entitlements. Therefore, no adjustment is necessary for property rights conveyed.

Financing Terms

Based on the definition of market value we assume financing terms in cash, or on terms reasonably equivalent to cash, for the subject property. Sales 1 and 8 were owner-financed transactions. However, owner financing is common in this market, and had little to no effect on price

behavior. Therefore, we do not adjust these comparables for financing terms.

Conditions of Sale

Sale 11 represents a transaction of a parcel that conveyed 3.72 acres, though a portion of the site was within a PLO and legal entitlement was in question. Subsequent to the sale, the State claimed legal jurisdiction to 1.22 acres, and the buyer retained entitlement to 2.50 acres. The buyer based the purchase price of $120,000 on a 2.5-acre site, but with potential entitlement to the additional 1.22 acres. As support to this purchase motivation, Sale 10 represents the resale of the same property in 2013 at a lower price of $105,000.

Regarding Sale 1 the buyer owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivation might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district. However, Sale 7 requires a downward adjustment because the adjacent owner was motivated to purchase the property for access. Sales 3, 8, 10, 14 and 15 do not indicate any atypical motivation.

Market Conditions

While analysis indicates modest appreciation from 2008 to the present day, we found no data to support a market conditions adjustment to the one sale that transpired in 2008. Therefore, we do not adjust the comparable land sales for change in market conditions.

Location

The neighborhood environment and proximity of shopping and services are location influences that affect price behavior. The appraised property is located 14 miles from Midtown Anchorage, and about ten miles from a South Anchorage shopping district. Sales 1 is located 15 miles from Midtown Anchorage, but within five miles of the Eagle River commercial core. Sales 3, 7 and 8 are about 10 miles from Midtown Anchorage. Sales 10, 11, 14 and 15 are located along Turnagain Arm, just south of the corridor. Overall, the neighborhoods offer similar locations removed from shopping and services. Therefore, we do not adjust the sales for location.

Physical Characteristics

As stated, size, access, topography, easements and restrictions, and utilities are physical factors that cause price to vary. Importantly, interrelationships between these physical features make it difficult to

measure or quantify price differential. Thus, we measure physical differences by a qualitative rating of inferior, similar, or superior.

Size: In comparison to the 13.00± acres of the low-utility uplands, Sales 1, 3, 7 and 8 range from 20.00± acres to 80.00± acres. Typically, an inverse relationship between price and size reflects market behavior. However, this relationship is not linear. In fact, analysis of historical sales develops a price curve that has a steep slope for parcels containing less than 20.00 acres, a moderate slope for parcels ranging from 20.00 to 80.00 acres, and a modest slope for parcels greater than 80.00 acres. The weakness of this analytical process is the presumption that size is the sole price influence, which is an improbable dynamic. Thus, we use the price curve as an analytical tool to bracket value, but not quantify size adjustment. Based on the preceding analysis, we make a significant upward adjustment to Land Sales 1, 3 and 7 for a size over four to six times larger than the low-utility uplands. Additionally, we make an upward adjustment to Land Sale 8 for a size about 50-percent greater than the low-utility uplands.

Regarding the high-utility uplands, Sales 10/11, 14 and 15 are 2.50 to 3.28 acres, whereas the level to undulating uplands are 1.00± acre of the key parcel. Therefore, we make an upward adjustment to these sales for size over twice that of the high-utility uplands.

Access Comparisons: We presume the key parcel has legal road access; however, physical access to the low-utility uplands is marginal and includes substantial risk. Sale 1 does not have developed road access, but does have access via trail for ATV-type vehicles. Sale 7 has access via a dirt roadway. Overall, Sales 1 and 7 have physical and legal constraints similar to the low-utility uplands, and we make no adjustment. Sale 3 has access from a well-used, dirt road that supports multiple properties, and Sale 8 has access via gravel road. Therefore, we adjust these sales downward for access superiority to the low-utility uplands. Sales 10/11, 14 and 15 have highway or secondary road access, which we rate similar to the high-utility uplands. Importantly, access is an important physical characteristic that has a large effect on the price paid for land.

Topography Comparisons: The low-utility uplands have steep sloping topography that includes a steep rock faces along portions of the Seward Highway frontage. Sales 1 and 7 have similar steep sloping topography that limits development potential. Sales 3 and 8 have a more modest slope, which is a superior characteristic requiring a downward adjustment. The high-utility uplands are generally level to undulating. Sales 10/11 have sloping topography requiring an upward adjustment for the inferiority. Sales 14 to 15 are level to gentle sloping that we rate generally similar.

Easement and Restrictions: We do not identify any adverse easements or restrictions affecting the key parcel. However, Sales 3 and 8 are bisected by roadways, indicating an upward adjustment. Further, Land Sale 14 has setbacks from a bisecting creek, is affected by wetlands, and has CCRs that restrict use to single-family residential. Therefore, we make a large upward adjustment to Sale 14.

Utilities: The key parcel has electricity in the general proximity. Sales 1 and 7 do not have any utilities within the general proximity, and require upward adjustments for this inferiority. Sales 3 and 8 have electricity at the site, which is not significantly different from the subject. Sales 10/11 have electricity on site; with natural gas within the general neighborhood; Sales 14 and 15 have electricity and natural gas onsite. Therefore, we adjust sales 10/11, 14 and 15 downward for superior available utilities.

View Amenity: The key parcel has direct view of Turnagain Arm and surrounding mountains. While views differ, desirability of one view over the other is a subjective and personal assessment. Further, there is no data to support adjusting the sales for a view of Knik Arm versus Cook Inlet and Turnagain Arm. Therefore, we only adjust Sale 14 upward for inferior views.

Use (Zoning)

The key parcel is located outside a zoning district. If the parcel was in the private sector, it would be zoned Turnagain Arm (TA) District. This area is designated primarily for low-density residential land use, though some commercial uses are also allowed. Sales 1, 3, 7 and 8 are zoned R-10, a low-density residential district with a minimum lot area of 1.25 to 7.50 acres depending on average slope and soil geology of the parcel. Due to the sloping topography and bedrock soils of the comparable sales, the R-10 zoning is rated generally similar to the low-utility uplands indicating no adjustment is necessary. Sales 10/11, 14 and 15 are zoned R-11 or TA, similar to the high-utility uplands.

Comparative Land Sale Analysis – Low-Utility Lands

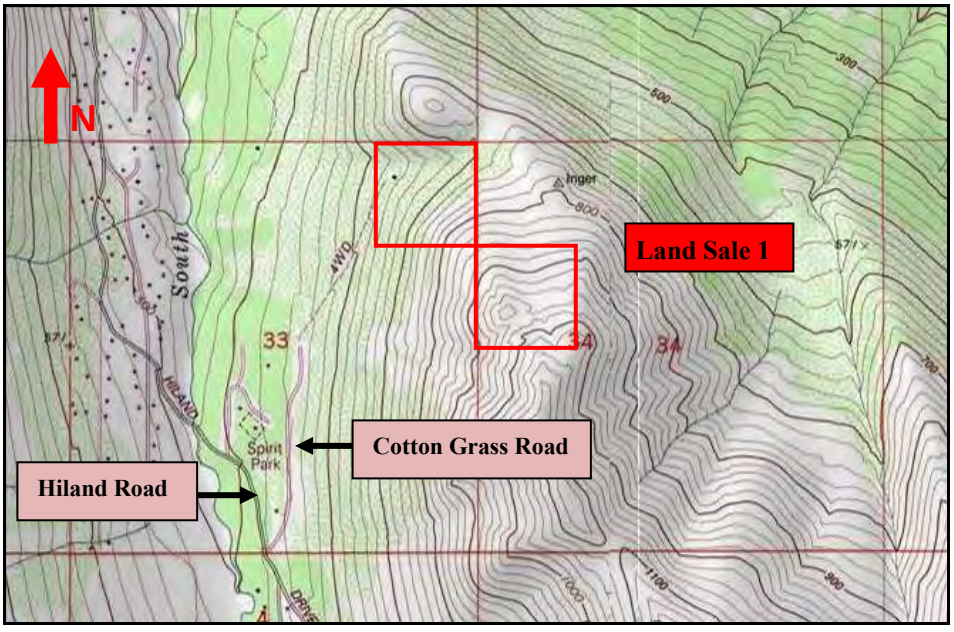
A tabular summary of the land sales used in comparative analysis of the low-utility uplands follows. The inserted map that follows provides a location reference, with additional details of the four comparable land sales in the addendum.

Comparable Land Sales

No.	Location	Zone	Size	Date	Price	Price/ Acre
1	East side of Cotton Grass Drive, off Hiland Drive, *Eagle River*	R-10	80.00	7/14	$177,200	$2,215
3	Extension of Steamboat Drive, north of Potter Heights Drive, *Anchorage*	R-10	80.00	6/17	$350,000	$4,375
7	End of dirt road from Miller Drive, South of Potter Heights Drive, *Anchorage*	R-10	62.50	9/15	$130,000	$2,080
8	Bisected by Brewsters Drive, off Kings Way, *Anchorage*	R-10	20.00	9/15	$149,000	$7,450
	Low-Utility Uplands, Turnagain Arm	***TA*** ***Assumed***	***13.00***	*-- --*	*-- --*	*-- --*

Land Sale 1

Summary: This sale is an 80-acre parcel located in the South Fork Eagle River valley neighborhood accessible from Hiland Drive. Located adjacent to Chugach State Park boundaries, the parcel has a panoramic northwesterly view of Eagle River and Knik Arm. While trail access is possible to the westerly parcel area, it permits only ATV-type vehicles. Steep topography is the defining physical feature, which diminishes useable land area. Available utilities are within one-half mile.

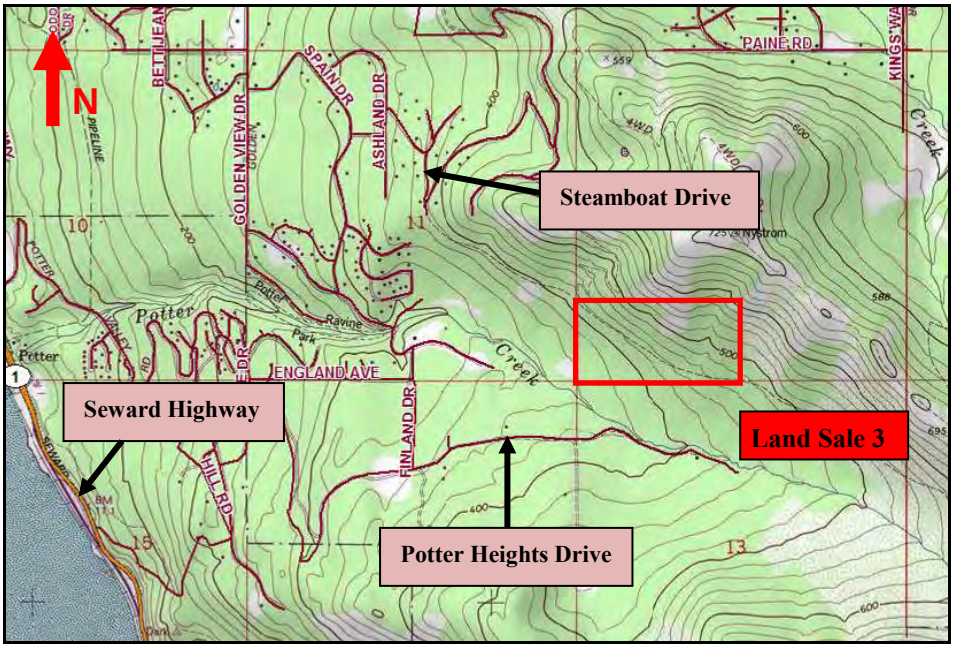


The buyer of Sale 1 owned a contiguous property and desired to protect their privacy. The Broker indicated buyer motivations might have trended the sale price upward because the parcel sold before the listing reached the MLS database. However, we do not adjust for conditions of sale because the price paid is similar to past sale activity in the Hiland Road market district.

Comparative Analysis: Upward adjustments are necessary for inferior size and utilities. Therefore, the net adjustment to Land Sale 1 is upward, indicating a unit value greater than $2,215 per acre.

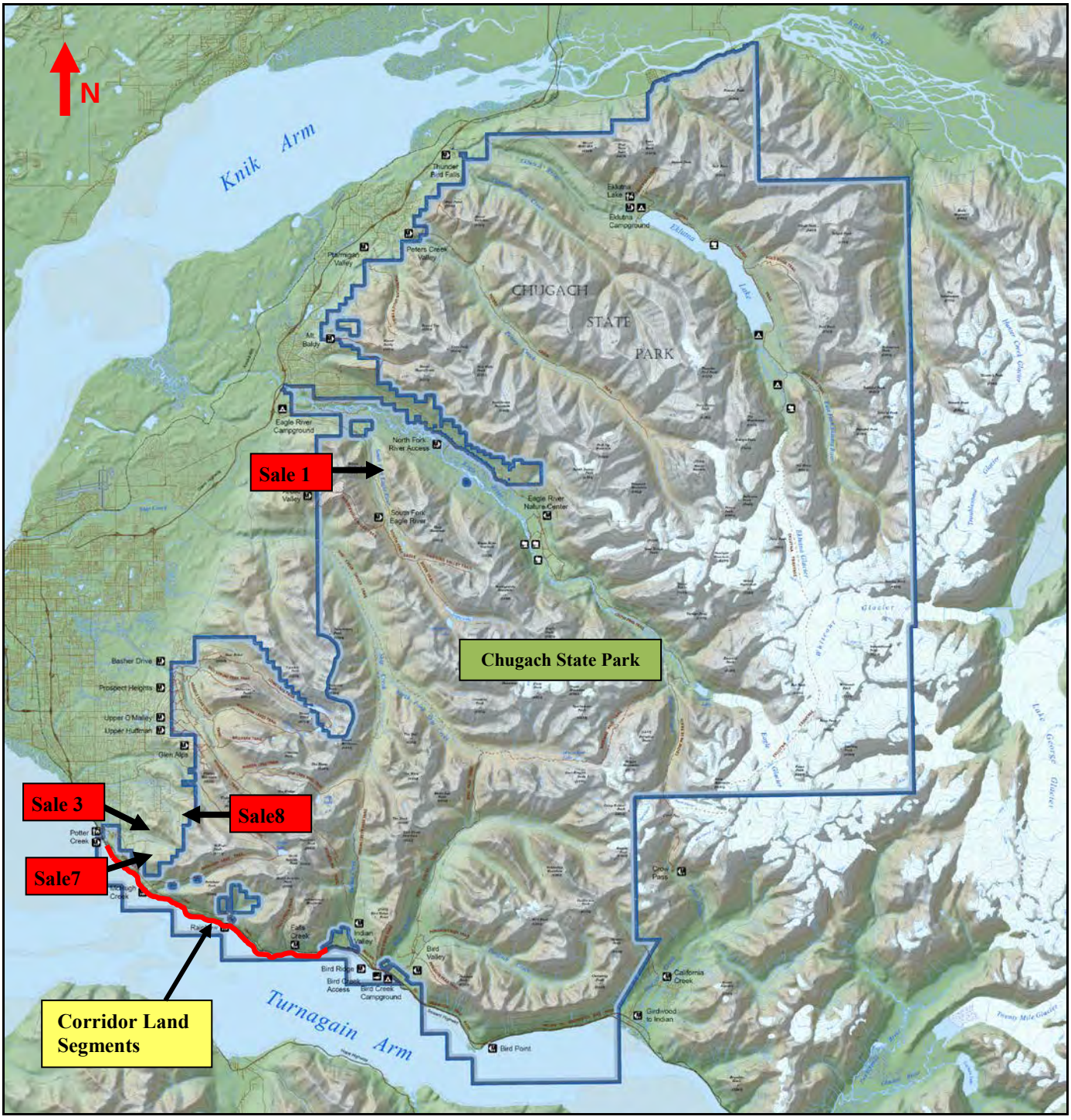
Land Sale 3

Summary: This sale is an 80.00-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Nystrom Peak, the parcel has a moderate to steep slope with southwesterly view of Anchorage and Turnagain Arm. Access is via a dirt trail extension of Steamboat Drive, which bisects the parcel as a 60-foot road easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is at the site.



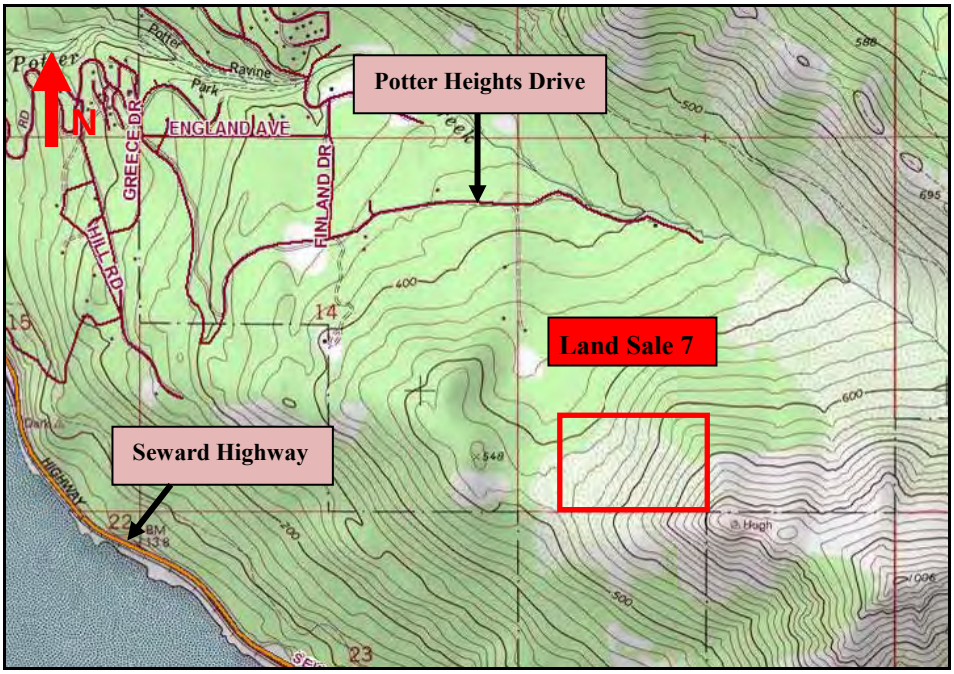
Comparative Analysis: Analysis supports upward adjustments for size and the bisecting roadway. However, access and topography are superior characteristics that outweigh inferiorities. Overall, the net adjustment to Land Sale 3 is downward, indicating a unit value less than $4,375 per acre.

Land Sale Map



Land Sale 7

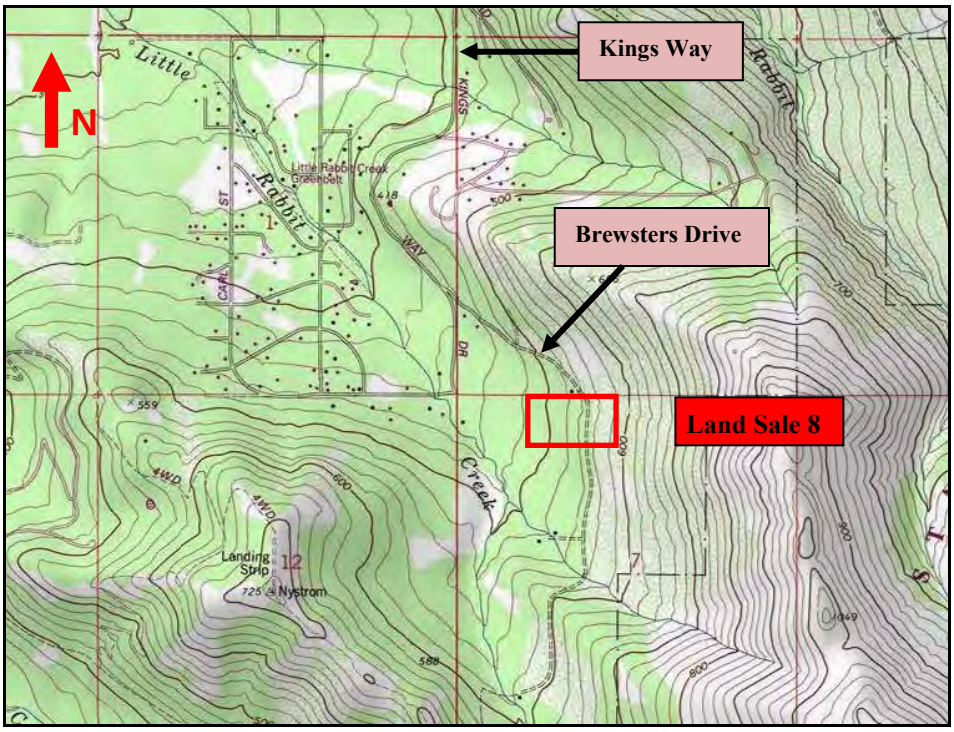
Summary: This sale is a 62.50-acre parcel located in the Potter Creek neighborhood proximate to Chugach State Park. Setting on slope near Hugh Peak, the parcel has a moderate to steep slope with northwesterly view of Anchorage and Turnagain Arm. Access is via a dirt road, and an undeveloped section line easement. Sloping topography and undeveloped access are the defining physical features, which diminishes utility. Public electricity is are about 1,500 feet to the northwest. The buyer is an adjacent property owner that purchased the parcel for access to a proposed homsite.



Comparative Analysis: Analysis supports a downward adjustment for conditions of sale. Conversely, size and lack of utilities are inferior characteristics that outweigh superiority. Overall, the net adjustment to Land Sale 7 is upward, indicating a unit value greater than $2,080 per acre.

Land Sale 8

Summary: This sale is a 20.00-acre parcel located in the Bear Valley neighborhood proximate to Chugach State Park. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage. Public electricity is along the northern boundary.



Comparative Analysis: Analysis supports downward adjustments for superior access and topography. Conversely, the bisecting public roadway and size are inferior. Overall, superior access and topography outweigh the inferior characteristics. Therefore, the net adjustment to Land Sale 8 is downward, indicating a unit value less than $7,450 per acre.

On the following page is an adjustment grid that summarizes the comparative land sale analysis.

Comparable Land Sale Adjustment Grid

Land Sale No.	Subject	Land Sale 1	Land Sale 3	Land Sale 7	Land Sale 8
Sale Price	-- --	**$177,200**	**$350,000**	**$130,000**	**$149,000**
Price/Acre	-- --	**$2,215**	**$4,375**	**$2,080**	**$7,450**
Property Rights Conveyed	*Fee simple*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Financing Terms	*Cash*	Owner-financed **-Similar-**	Cash **-Similar-**	Cash **-Similar-**	Owner-financed **-Similar-**
Conditions of Sale	*Assumed Typical*	**-Similar-**	**-Similar-**	**-Superior-**	**-Similar-**
Market Conditions	*8/18 (Date of value)*	7/14 **-Similar-**	6/17 **-Similar-**	9/15 **-Similar-**	9/15 **-Similar-**
Adjusted $/Acre	-- --	**$2,215**	**$4,375**	**< $2,080**	**$7,450**
Location	*Turnagain Arm*	**- Similar -**	**-Similar-**	**-Similar-**	**-Similar-**
Physical Character					
Size	*13.00 Ac.*	80.00 Ac. **-Inferior-**	80.00 Ac. **-Inferior-**	62.50 Ac. **-Inferior-**	20.00 Ac. **-Inferior-**
Access	*Road access*	**-Similar-**	**-Superior-**	**-Similar-**	**-Superior-**
Topography	*Steep bluff; sloping*	Steep sloping **-Similar-**	Modest to steep slope **-Superior-**	Modest to steep slope **-Similar-**	Modest slope **-Superior-**
Easements and Restrictions	*None*	**-Similar-**	**-Inferior-**	**-Similar-**	**-Inferior-**
Utilities	*Electricity in proximity*	None **-Inferior-**	Electricity **-Similar-**	None **-Inferior-**	Electricity **-Similar-**
View Amenity	*Turnagain Arm; Mountains*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Use (Zoning)	*TA (assumed)*	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-10** **-Similar-**	**R-10** **-Similar-**
Overall Relative Comparison Rating		**Inferior**	**Superior**	**Inferior**	**Superior**
Adjusted $/Acre	-- --	**> $2,215**	**< $4,375**	**> $2,080**	**< $7,450**

Reconciliation of Comparative Land Sale Analysis – Low-Utility Uplands

The comparable land sales indicate an unadjusted unit value range from $2,080 to $7,450 per acre. After analysis, Land Sales 3 and 8 are superior indicating a value less than $4,375 per acre. In contrast, Land Sales 1 and 7 are inferior indicating a value greater than $2,215 per acre. We array the land sales and subject on an overall basis as follows.

Land Sale	$/Acre	Overall Rank	Net Adjustment
8	$7,450	Superior	↓
3	$4,375	Superior	↓
Subject	-- --	-- --	-- --
1	$2,215	Inferior	↑
7	$2,080	Inferior	↑

After qualitative adjustments, the range tightens to a value greater than $2,215 but less than $4,375. Sales 3 and 8 have superior access, which is an important physical characteristic that has a large effect on the price paid for land. Therefore, we estimate a value in the lower half of the indicated range or $2,800 per acre. This develops the following value estimate for the low-utility uplands.

Low-Utility Uplands $2,800/Acre

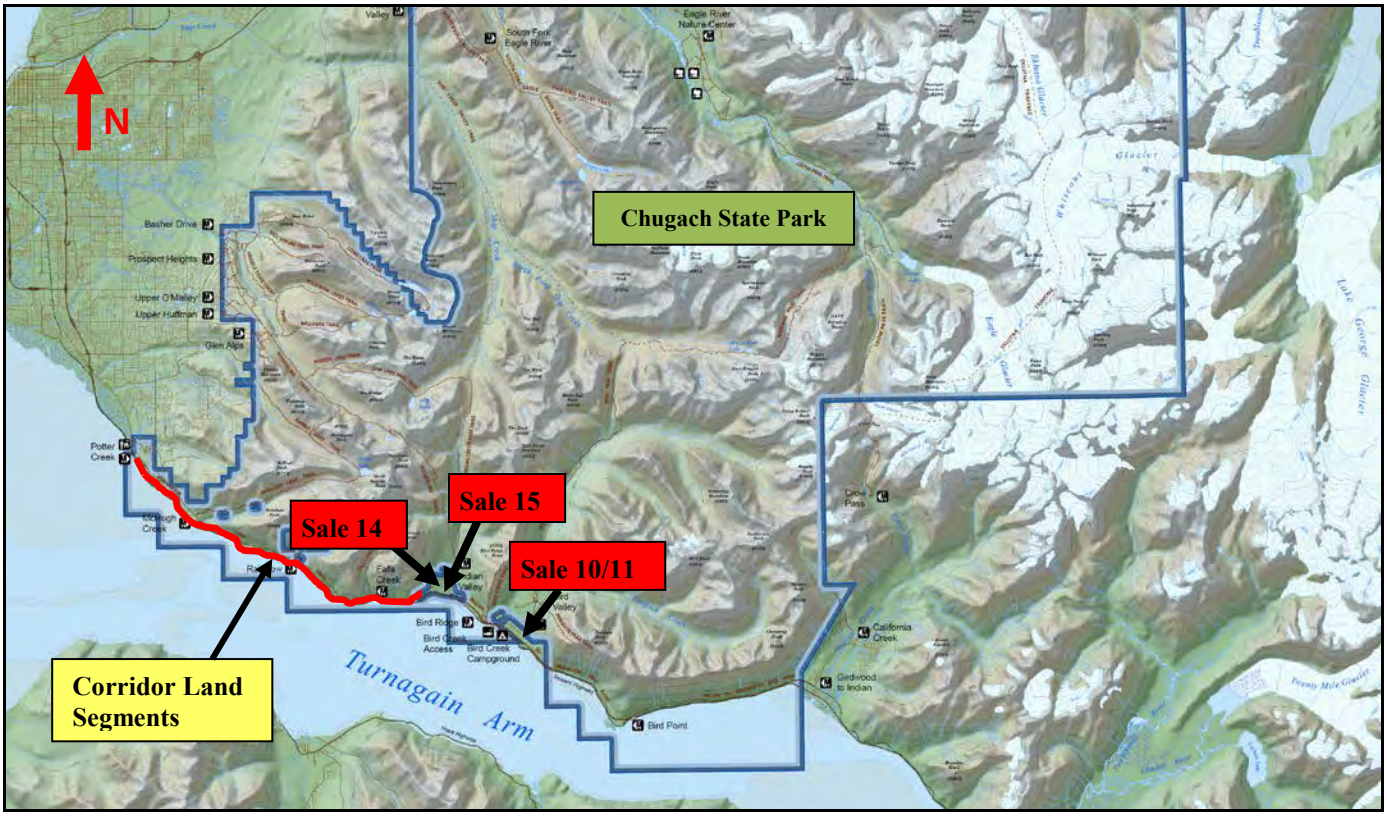
Comparative Land Sale Analysis – High-Utility Lands

A tabular summary of the land sales used in comparative analysis of the high-utility uplands is on the following page. The inserted map that follows provides a location reference, with additional details of the four comparable land sales in the addendum.

Comparable Land Sales

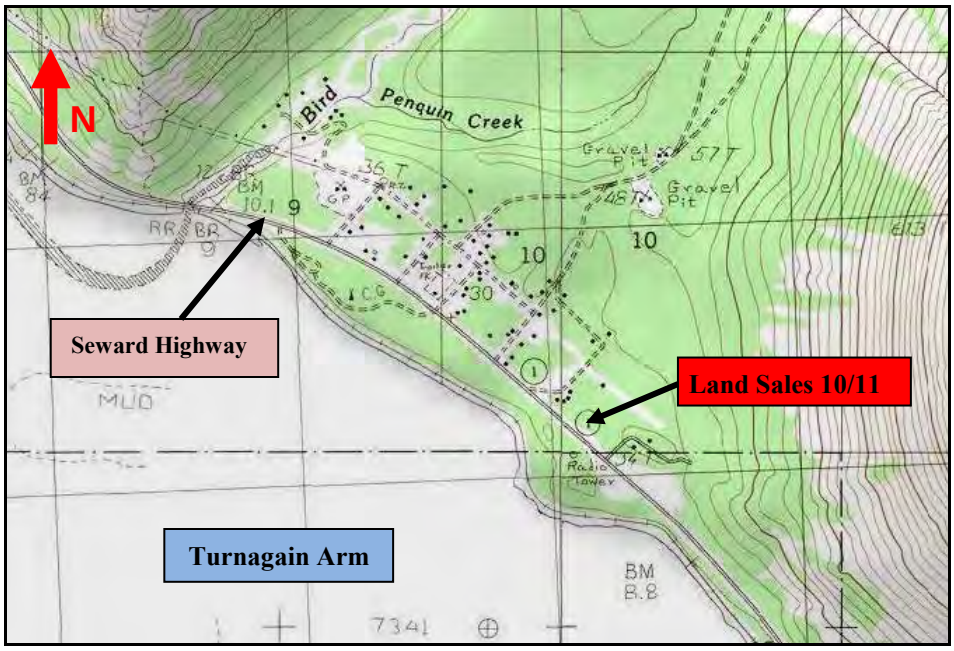
No.	Location	Zone	Size	Date	Price	Price/ Acre
10	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	12/13	$105,000	$42,000
11	North side of Seward Highway near Milepost 100.4, *Bird Creek*	R-11	2.50	9/08	$120,000	$48,000
14	West side of Ledyard Circle, north of Seward Highway near Milepost 103, *Indian*	TA	3.28	3/17	$115,000	$35,061
15	End of Reindeer Circle, and north side of Seward Highway near Milepost 103, *Indian*	TA	3.23	7/15	$215,000	$66,563
	High-Utility Uplands, Turnagain Arm	***TA*** ***Assumed***	***1.00***	-- --	-- --	-- --

Land Sale Map



Land Sales 10 & 11

Summary: Land Sales 10 and 11 represent a sale/resale of a parcel located on the Seward Highway, near Bird Creek. The parcel has panoramic views of Turnagain Arm and surrounding mountains. Topography includes a relatively steep slope at the south boundary, but the eastern portion of the site is generally level. A driveway provides direct Seward Highway access. Public utilities available include electricity, with natural gas in the general neighborhood.

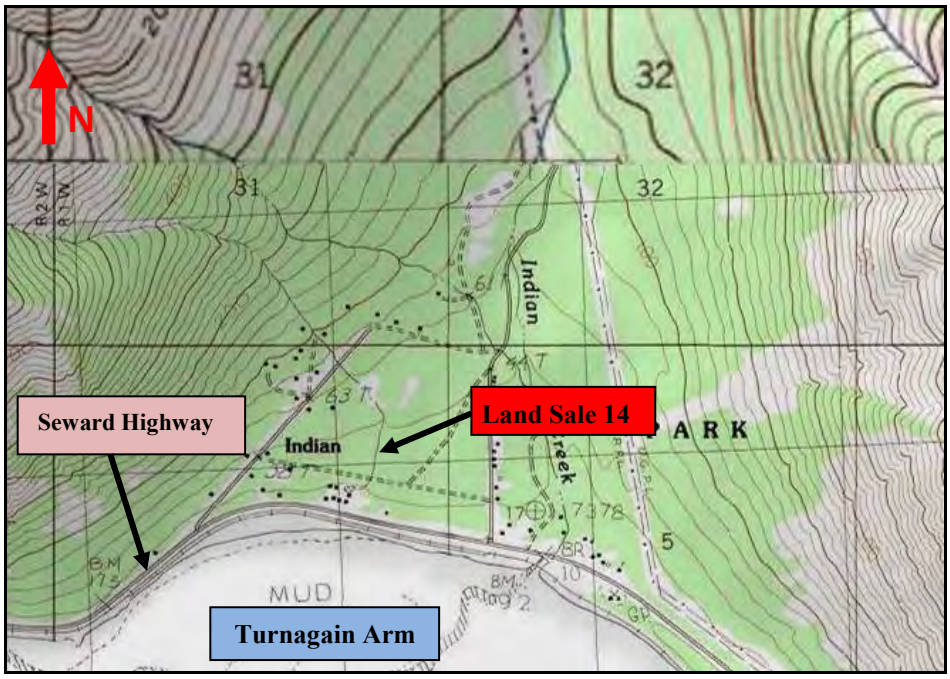


Comprised of two adjacent lots total land area transferred by deed is 163,350 square feet or 3.72 acres. The south lot (1.22 acres) is a highway remainder and private ownership was in question at the time of Sale 11. Subsequently, the State of Alaska has claimed jurisdiction to the 1.22 acres, while the buyer retained entitlement to 2.50 acres. The buyer of Sale 11 based the purchase price of $120,000 on a 2.5-acre site, but with potential entitlement to the additional 1.22 acres. As support to this purchase motivation, Sale 10 represents the resale of the same property in 2013 at a lower price of $105,000.

Comparative Analysis: Analysis supports upward adjustments for inferior size and topography. Conversely, superior shape and utilities require downward adjustments. Additionally, Sale 11 requires a downward adjustment for conditions of sale. After review, inferior topography and size override the superiorities of Sale 10, indicating a unit value greater than $42,000 per acre. However, the Sale 11 indicates a unit value approximating $48,000 per acre.

Land Sale 14

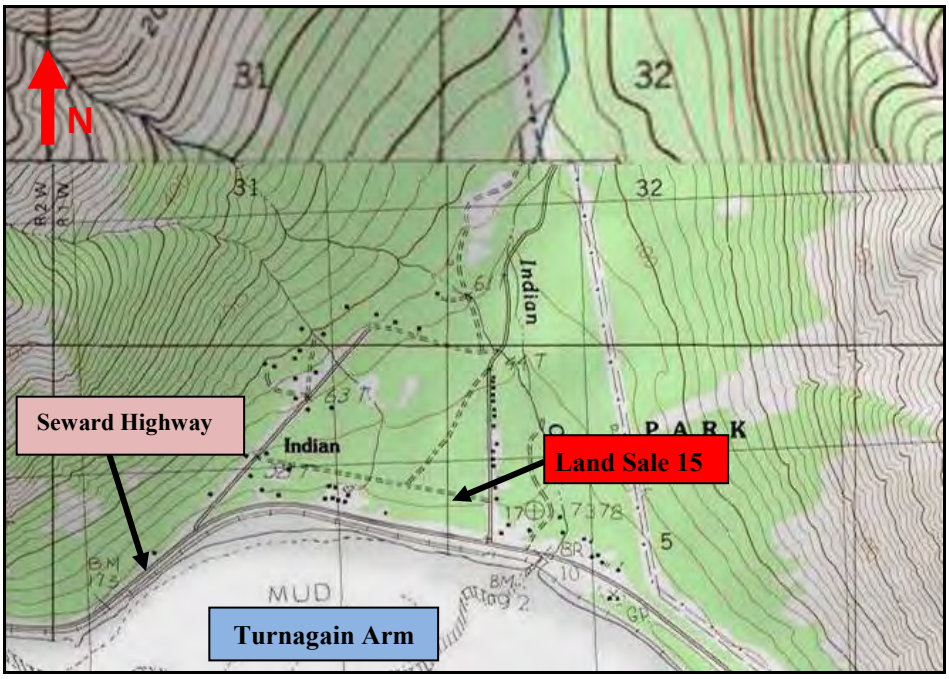
Summary: This sale is a 3.28-acre parcel located in a relatively new subdivision in Indian, north of the Seward Highway. Setting at a gentle slope, the parcel has partial mountain view of Bird Ridge. Access is via a paved Ledyard Circle. A small creek bisects the parcel, and creates a designated wetlands area restricting development potential and increasing development costs. Subdivision CCRs restrict use to single-family residential. Utilities at the site include electricity and natural gas.



Comparative Analysis: Analysis supports a downward adjustment for superior shape and utilities. Conversely, size, wetlands, and inferior view amenity require upward adjustments. Overall, the net adjustment to Land Sale 14 is upward, indicating a unit value greater than $35,061 per acre.

Land Sale 15

Summary: This sale is a 3.23-acre parcel located in a relatively new subdivision in Indian, fronting the Seward Highway. The parcel has panoramic views of Turnagain Arm and surrounding mountains. Access is via paved Reindeer Circle; the plat prohibits direct access to/from Seward Highway. Utilities at the site include electricity and natural gas. Although commercial use is allowable, lack of highway access diminishes commercial appeal.



Comparative Analysis: Analysis supports a downward adjustment for superior shape and utilities. Conversely, size requires an upward adjustment. Overall, the net adjustment to Land Sale 15 is downward, indicating a unit value less than $66,563 per acre.

On the following page is an adjustment grid that summarizes the comparative land sale analysis.

Comparable Land Sale Adjustment Grid

Land Sale No.	Subject	Land Sale 10	Land Sale 11	Land Sale 14	Land Sale 15
Sale Price	-- --	**$105,000**	**$120,000**	**$115,000**	**$215,000**
Price/Acre	-- --	**$42,000**	**$48,000**	**$35,061**	**$66,563**
Property Rights Conveyed	*Fee simple*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Financing Terms	*Cash*	Cash **-Similar-**	Cash **-Similar-**	Cash **-Similar-**	Cash **-Similar-**
Conditions of Sale	*Assumed Typical*	**-Similar-**	**-Superior-**	**-Similar-**	**-Similar-**
Market Conditions	*8/18 (Date of value)*	12/13 **-Similar-**	9/08 **-Similar-**	3/17 **-Similar-**	7/15 **-Similar-**
Adjusted $/Acre	-- --	**$42,000**	**< $48,000**	**$35,061**	**$66,563**
Location	*Turnagain Arm*	**- Similar -**	**- Similar -**	**- Similar -**	**- Similar -**
Physical Character					
Size	*1.00 Ac.*	2.50 Ac. **-Inferior-**	2.50 Ac. **-Inferior-**	3.28 Ac. **-Inferior-**	3.23 Ac. **-Inferior-**
Shape	*Narrow rectangle*	**-Superior-**	**-Superior-**	**-Superior-**	**-Superior-**
Access	*Road access*	**-Similar-**	**-Similar-**	**-Similar-**	**-Similar-**
Topography	*Level to undulating*	Level to steep slope **-Inferior-**	Level to steep slope **-Inferior-**	Gentle slope **-Similar-**	Level to undulating **-Similar-**
Easements and Restrictions	*None*	**-Similar-**	**-Similar-**	**-Inferior-**	**-Similar-**
Utilities	*Electricity in proximity*	Electricity; NG in area **-Superior-**	Electricity; NG in area **-Superior-**	Electricity & NG **-Superior-**	Electricity & NG **-Superior-**
View Amenity	*Turnagain Arm; Mountains*	**-Similar-**	**-Similar-**	**-Inferior-**	**-Similar-**
Use (Zoning)	*TA (assumed)*	**R-11** **-Similar-**	**R-11** **-Similar-**	**TA** **-Similar-**	**TA** **-Similar-**
Overall Relative Comparison Rating		**Inferior**	**Similar**	**Inferior**	**Superior**
Adjusted $/Acre	-- --	**> $42,000**	**= $48,000**	**> $35,061**	**< $66,563**

Reconciliation of Comparative Land Sale Analysis – High-Utility Uplands

The comparable land sales indicate an unadjusted unit value range from $42,000 to $66,563 per acre. After analysis, Land Sale 15 is superior indicating a value less than $66,563 per acre. In contrast, Land Sales 10 and 14 are inferior indicating a value greater than $42,000 per acre. Additionally, Land Sale 11 is rated generally similar indicating a value approximating $48,000 per acre. We array the land sales and subject on an overall basis as follows.

Land Sale	$/Acre	Overall Rank	Net Adjustment
15	$66,563	Superior	↓
11	$48,000	Similar	-- --
Subject	-- --	-- --	-- --
10	$42,000	Inferior	↑
14	$35,061	Inferior	↑

After qualitative adjustments, the sales support a value approximating $48,000 per acre. Based on the preceding data, reasoning, and analysis, we estimate a value of $48,000 per acre for the high-utility uplands.

High-Utility Uplands $48,000/Acre

Ratio Analysis of Tideland versus Adjacent Upland Sale Price

As stated, tideland sales are scarce because of their intrinsic productivity with adjoining uplands. Moreover, the public sector owns a majority of tidelands in rural Alaska communities with marine dependent economies. Further, most sales involving tidelands are improved properties with an integrated economic use. While sales of properties with tidelands transpire, it is difficult to extricate the tideland price from the total purchase. Consequently, we use a ratio method of valuing the appraised tidelands.

The ratio method is a common analytical tool founded on market behavior collected from several Alaska communities. The ratios reflect utility of the tidelands, as it relates to the adjacent uplands. The table on the following page summarizes four primary transactions with independent price negotiations for the uplands and adjoining tidelands.

The table also summarizes 10 secondary sales that illustrate price behavior between uplands and adjoining tidelands. While these transactions are credible indicators of market behavior, they are located in Kodiak and Southeast Alaska where private owned tidelands are more prevalent. We do not emphasize the secondary indicators, but they

bracket tideland price behavior involving tidelands with an integrated economic use with the adjoining uplands.

Summary Analysis of Upland Versus Tideland Price

No.	Location	Anticipated Use	Upland Price	Tideland Price	Ratio
	Primary Market Indicators				
T-1	Seward, Alaska	Oil Industry/Dock	$1.05/SF	$0.15/SF	**14.3%**
T-2	Nikiski, Alaska	Oil Industry/Dock	$1.10/SF	$0.18/SF	**16.4%**
T-3	Anchorage, Alaska	Residential	$3.48/SF	$0.35/SF	**10.0%**
T-4	Unalaska, Alaska	Fuel Dock	$5.22/SF	$1.05/SF	**20.0%**
	Secondary Market Indicators				
T-5	Kodiak, Alaska	Fish Processing	$16.20/SF	$6.34/SF	**39.1%**
T-6	Kodiak, Alaska	Fish Meal Plant	$5.59/SF	$1.42/SF	**25.4%**
T-7	Sitka, Alaska	Cold Storage	$14.97/SF	$4.50/SF	**30.1%**
T-8	Sitka, Alaska	Marina	$6.25/SF	$0.95/SF	**15.2%**
T-9	Ketchikan, Alaska	Dock	$14.60/SF	$3.35/SF	**23.0%**
T-10	Ketchikan, Alaska	Lodge/Dock	$1.28/SF	$0.32/SF	**25.0%**
T-11	Petersburg, Alaska	Fish Processing	$2.85/SF	$0.60/SF	**21.1%**
T-12	Petersburg, Alaska	Cargo Transfer	$3.00/SF	$0.76/SF	**25.3%**
T-13	Haines, Alaska	Dock	$1.50/SF	$0.25/SF	**16.7%**
T-14	Wrangell, Alaska	Warehouse	$3.00/SF	$0.62/SF	**20.7%**

The primary market indicators develop a price ratio ranging from 10.0 to 20.0 percent. Tideland Ratio 1 consists of 43± acres of uplands and 80± tideland acres, although only 15± acres sustain an integrated use. Therefore, excess tideland area, a majority of which has limited utility, trended the ratio downward. Tideland Ratio 2 fronts the east shore of Cook Inlet just north of Nikiski providing oil industry support services. Upland acreage total 31± acres that have an integrated use with the 29.35± acres of tidelands. Importantly, the tideland area extends 2,320± feet offshore to enhance access constraints caused shallow depth and severe tidal change. In addition, the tidelands include acreage for future expansion. These physical and economic factors trended the price ratio downward.

Tideland Ratio 3 is shallow, flat, bisected by an anadromous stream, and affected by large tidal shifts exceeding 30 feet. Located in Anchorage, the associated residential use of the uplands further limits the utility of the tidelands. Tideland Ratio 4 represents a fuel dock fronting Captain Bay in Unalaska. Although 31.01± acres of tidelands support the 25± acres of upland, the tideland acreage is necessary to berth more than one vessel for safety purposes.

Reconciliation of Tideland Ratio Analysis

We emphasize Tideland Ratios 2 and 3 in the reconciliation process. Tideland Ratio 2 compares to the subject in terms of shallow offshore water depth and Cook Inlet tidal change. Further, potential use of the tidelands for expansion is similar to the subject. Tideland Ratio 3 compares to the subject due to a similar physical character. However, the provide very limited utility to the adjacent upland use. Although the two ratio indicators represent the lower end of the bracket, the physical character of appraised tidelands warrant this comparison. After analysis, the market indicators support a ratio in the middle of the indicated range, or 15 percent of upland value.

Tideland Ratio 15%

Conclusion of Tideland Value

We rely upon a ratio analysis to estimate the unit value of the key parcel tidelands. We employ this methodology because similar tideland sales do not exist for direct comparison. We concluded with a unit value of $2,800 per acre for the low-utility uplands, and $48,000 per acre for the high-utility uplands. Thereafter, we performed a ratio analysis of integrated sales that require tidelands to support upland use. Analysis supports a 15 percent ratio between upland value and tideland value.

In order to apply the ratio analysis, we first develop a weighted average for the unit values of the adjacent uplands, which is developed as follows.

Low-Utility Uplands: 13.0 Ac. × $2,800/Ac.	***$36,400***
High-Utility Uplands: 1.0 Ac. × $48,000/Ac.	***+ $48,000***
Total Value of Key Parcel Uplands	***$84,400***
$84,400 ÷ 14.0 Ac. = $6,029/Ac.	

Based on the preceding, the blended unit value of the key parcel uplands is estimate at $6,029 per acre. Thus, we conclude the unit value indicated for the 6.0-acre key-parcel tidelands is $904 per acre.

$6,029/Upland Acre @ 15% Ratio = $904/Tideland Acre

Conclusion of Larger Parcel Value

Again, we employ the ATF methodology to estimate the value of the larger parcel. This methodology is a reliable technique of measuring land value for a corridor-type property. The premise of this methodology is the corridor land is as valuable as the land it passes, prior to consideration of corridor factor and usage factor adjustments. Since a majority of the corridor from Indian to the weigh station crosses through near-identical land, we used the key-parcel technique in the comparative analysis. Importantly, the land it crosses includes three different physical types of land (tidelands, high utility uplands, and low utility uplands) that contribute differently.

Because a lack of market data prevents application of a more direct method, we apply an allocation technique. We believe allocation is a reliable technique for estimating the contribution of the three distinct types of land that make up the key parcel. Based on the preceding key-parcel analysis, unit prices of the three types of land are summarized as follows.

Low-Utility Uplands	***$2,800/Acre***
High-Utility Uplands	***$48,000/Acre***
Tidelands	***$904/Acre***

The next step is to apply these unit values to the larger parcel. This develops the following value indication for the larger parcel before acquisition.

Low-Utility Uplands: 49.07 Ac. × $2,800/Ac.	***$137,396***
High-Utility Uplands: 12.26 Ac. × $48,000/Ac.	***$588,480***
Tidelands: 26.30 Ac. × $904/Ac.	***+ $23,775***
ATF Value of Larger Parcel	***$749,651***

Analysis of Corridor Factor

The final step is to determine if an enhancement factor applies to the appraised lands. As stated, a corridor-type property represents an assemblage of land that connects two destination points. Often, this assemblage produces greater utility, particularly land with multiple ownership and diverse use. Thus, the market value of the corridor may exceed the value indicated by the ATF methodology and require a market-derived "enhancement" factor. While, the appraised property represents single underlying ownership, there are multiple users including highway, railroad, and utilities. Therefore, our analysis indicates an enhancement factor does apply to the appraised lands because, though

limited, demand from alternative users for the existing corridor exists. However, measuring its market-effect on price is difficult because of limited demand and scarcity of reliable sale data.

Significantly, we are not aware of any corridor sales in Alaska, although there are right-of-way leases that, reportedly, apply a CF to the ATF value. While corridor property sales located outside of Alaska transpire with regularity, they involve numerous comparative factors that exceed the scope of our knowledge and expertise. However, discussions with parties with knowledge of these transactions stated sale data indicates the CF is trending upward, albeit, the incremental change is relative small.

Importantly, we have reviewed a consulting assignment for the analysis of a potential corridor enhancement factor relating to a portion of Alaska Railroad Corporation's (ARRC) rail corridor. Prepared in 2004 by Randy L. Seale, MAI of Allen, Williford & Seale, Inc., this consultation cites 15 corridor enhancement factor transactions throughout the United States. The comparables have a corridor enhancement factor ranging from 1.00 to 7.05, though most fall within an enhancement factor range from 1.25 to 1.60. Based on several factors, Mr. Seale determined that an appropriate corridor enhancement factor for the ARRC segment is 1.50, as it relates to the ATF value.

Based on a similar-type corridor use, we concur with the data and analysis provided in the above-mentioned consulting assignment. Therefore, we conclude with a CF of 1.50 or a 50-percent enhancement to the ATF value.

Estimate of Corridor Enhancement Factor 1.50

Multiplying the estimated CF of 1.50 to the ATF value of the appraised property develops the following estimate of market value.

$749,651 (ATF Value) × 1.50 CF = $1,124,477

In conclusion, the market value of the property before the acquisition is estimated as follows.

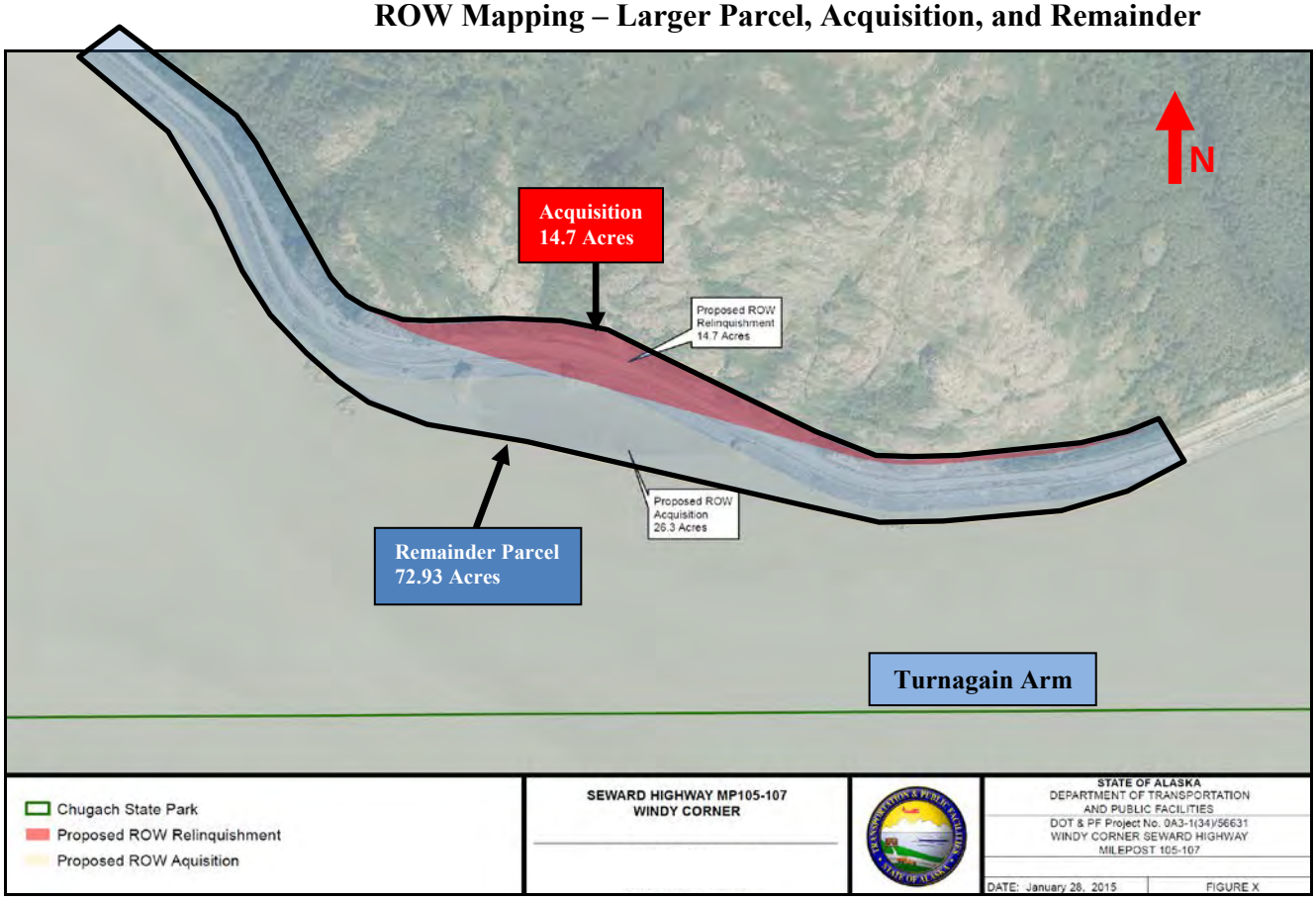
Market Value Before Acquisition	**$1,124,500**

Chapter 6: Property Valuation – After Acquisition

Overview

This chapter analyzes the property after the proposed acquisition, or the remainder parcel. The ROW map below illustrates the partial acquisition affecting the appraised property, while the table on the following page provides a comparative analysis before and after the acquisition.

ROW Mapping – Larger Parcel, Acquisition, and Remainder



Before and After Acquisition Summary

	Larger Parcel (Before Acquisition)	Remainder Parcel (After Acquisition)
Land Area:	87.63 Ac.	72.93 Ac.
Low-Utility Uplands:	49.07 Ac.	36.87 Ac.
High-Utility Uplands:	12.26 Ac.	9.76 Ac.
Tidelands:	26.30 Ac.	26.30 Ac.
Shape:	Irregular	Similar
Road Access:	Yes	Same
Topography:	Tidelands, level lands, steep sloping	Similar
Soils:	Mudflats, bedrock	Same
Utilities:	E & T	Same
Easements and Restrictions:	None identified	Same
Improvements:	Assumed vacant	Same
Zoning:	Not zoned; assumed TA for valuation	Same
Highest and Best Use:	Transport or distribution corridor	Same

Essentially, the proposed acquisition consists of 14.70 acres of on the north side of the larger parcel. Based on hand scaling of exhibits provided by the client, we determined the acquisition consists of 2.5± acres of high-utility uplands, and 12.2 acres of low-utility uplands; the area of the tidelands remains unchanged by the acquisition. Therefore, the area of the remainder parcel is reduced to 72.93 acres, with 36.87 acres of low-utility uplands, 9.76 acres of high-utility uplands, and 26.30 acres of tidelands. Importantly, the acquisition does not cause a change to the highest and best use of the property.

Because the remainder is similar to the property before the acquisition, the market data used in the valuation of the larger parcel are also reliable comparisons in valuing the remainder. Therefore, we utilize our allocation technique and key-parcel analysis previously discussed. To review the key-parcel analysis, unit prices of the three types of land are summarized as follows.

Low-Utility Uplands	***$2,800/Acre***
High-Utility Uplands	***$48,000/Acre***
Tidelands	***$904/Acre***

The next step is to apply these unit values to the remainder parcel. This develops the following value indication for the property after acquisition.

Low-Utility Uplands: 36.87 Ac. × $2,800/Ac.	***$103,236***
High-Utility Uplands: 9.76 Ac. × $48,000/Ac.	***$468,480***
Tidelands: 26.30 Ac. × $904/Ac.	***+ $23,775***
ATF Value of Remainder Parcel	***$595,491***

Finally, we apply the estimated CF of 1.50 to the ATF value of the appraised property to develop the following estimate of market value after acquisition.

$595,491 (ATF Value) × 1.50 CF = $893,237

In conclusion, the market value of the property after the acquisition is estimated as follows.

Market Value After Acquisition	**$893,200**

Chapter 7: Market Value of Acquisition

Overview

We employ the before and after methodology to value the acquisition of the Relinquishment Parcel. Analysis concluded with market value estimate before the acquisition as follows.

Value Before Acquisition	***$1,124,500***

Analysis concluded with market value estimate before the acquisition as follows.

Value After Acquisition	***$893,200***

The value of the acquisition is the difference between the before and after opinions of market value. Thus, the value of the acquisition of the Relinquishment Parcel is as follows.

Market Value of Acquisition	***$231,300***

Market Value of Acquisition

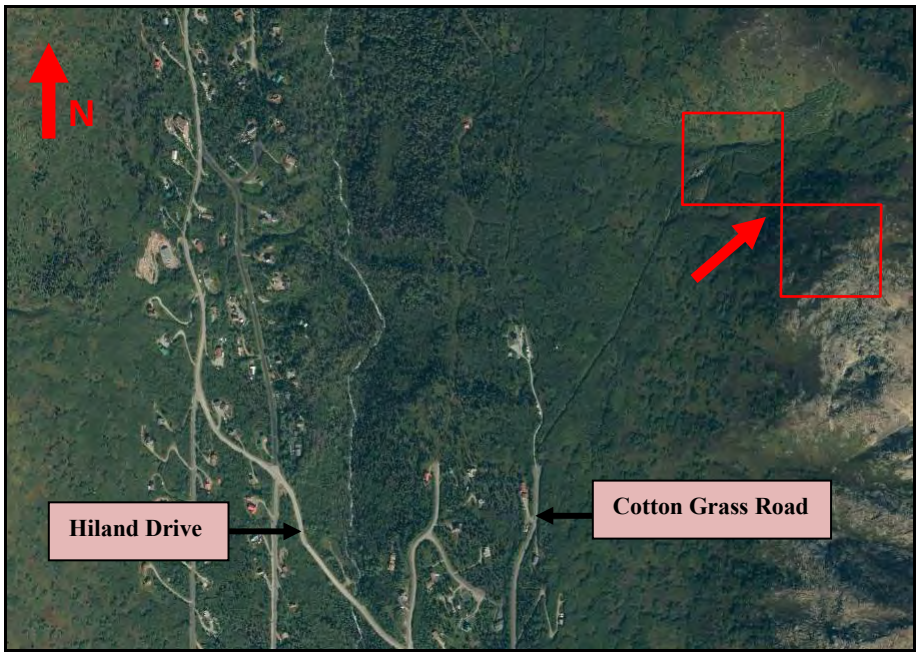
Based on the preceding data, reasoning, and analysis, it is our opinion the market value of the acquisition "Relinquishment Parcel," as of August 8, 2018, is as follows.

Market Value of Acquisition	**$231,300**

Analysis and valuation of the property is subject to the following **hypothetical condition**, which is a condition that is contrary to what exists, but is used for the purpose of analysis: *We assume the appraised property is owned by a single entity, and exclude from valuation all asphalt paving of roads, parking lots or pathways; railroad tracks and equipment; or any other improvements that may exist.* Use of this hypothetical condition might have affected the assignment results.

MacSwain Associates LLC

Comparable Land Sale 1



Location:	East of Cotton Grass Drive off of Hiland Road, 9± miles southeast of Eagle River, Alaska
Assessor Numbers:	050-411-40 & 41
Legal Description:	NE4NE4, Section 33, T14N, R1W SM and SW4NW4, Section 34 T14N, R1W, SM, Anchorage Recording District

Grantor:	Eric Gingrich Personal Representative for Estate of Stephen Gingrich	**Instrument:**	Personal Representative's Deed
Grantee:	Hertha Monroe	**Document No:**	2014-028880-0
Sale Date:	7/14	**Data Source:**	Broker
Sale Price:	$177,200	**Confirmed By:**	Dan Shantz
Cash Equivalent Price:	$177,200	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $88,600 down payment, $88,600 Deed of Trust at undisclosed terms		

Land Area:	80.00± acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential
Access:	Trail	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements	**Inspected By:**	Dan Shantz

Property Description:

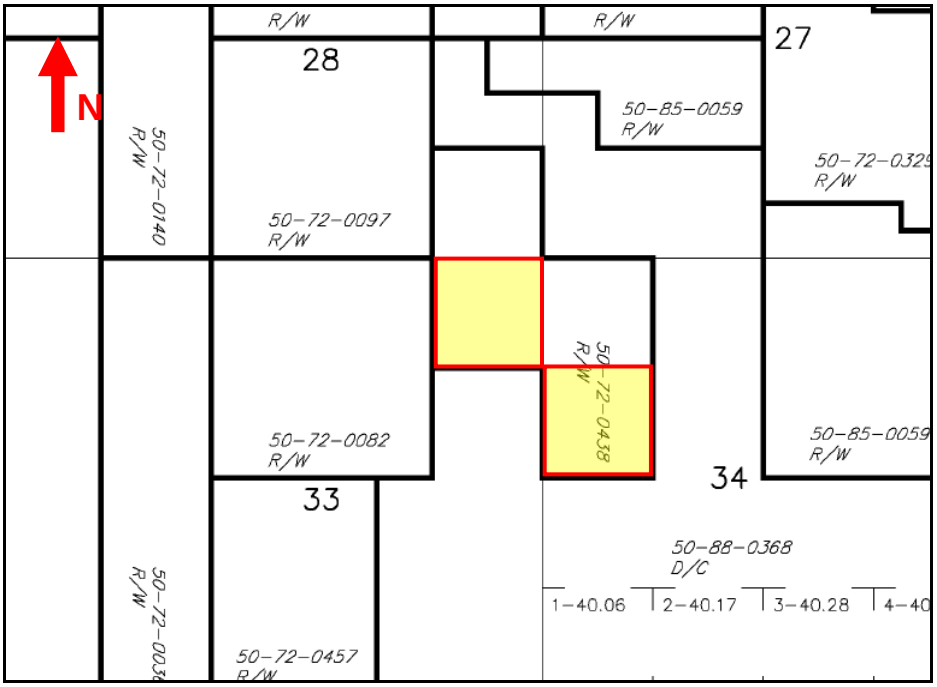
This 80-acre parcel is located on the eastern slope of the South Fork Eagle River valley neighborhood accessible from Hiland Road. Location is 15± miles from Midtown Anchorage. A trail extending nearly one-half mile links the parcel to Cotton Grass Drive. Topography is steep, which diminishes subdivision potential.

Remarks:

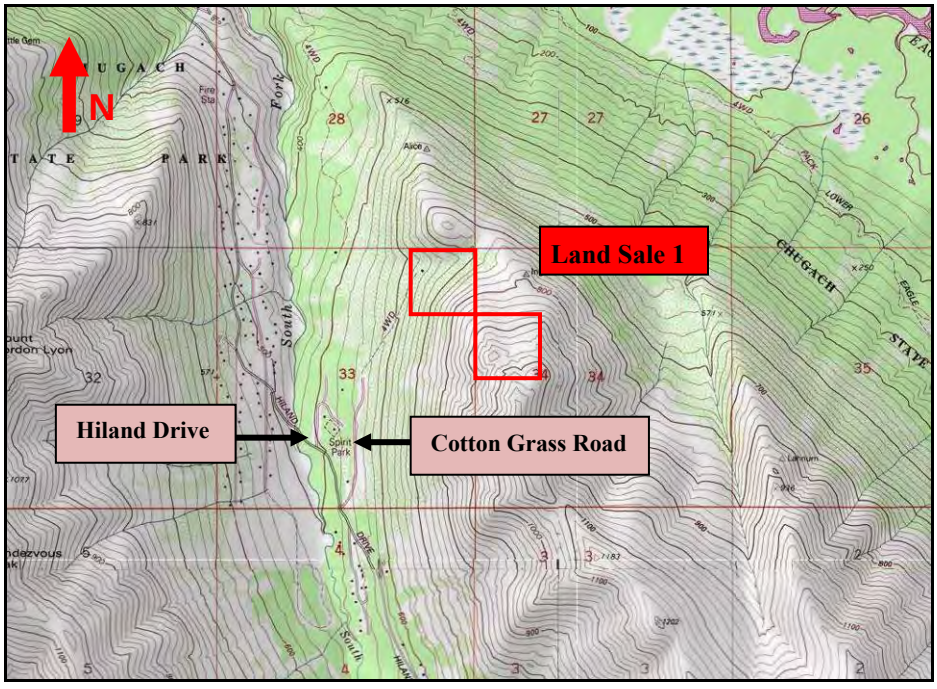
The buyer owned a contiguous property and desired to protect their privacy. The Broker stated the buyer negotiated the purchase prior to the listing reaching the MLS database.

Analysis **$177,200** ÷ **80.00± Acres** = **$2,215/Acre**

Comparable Land Sale 1



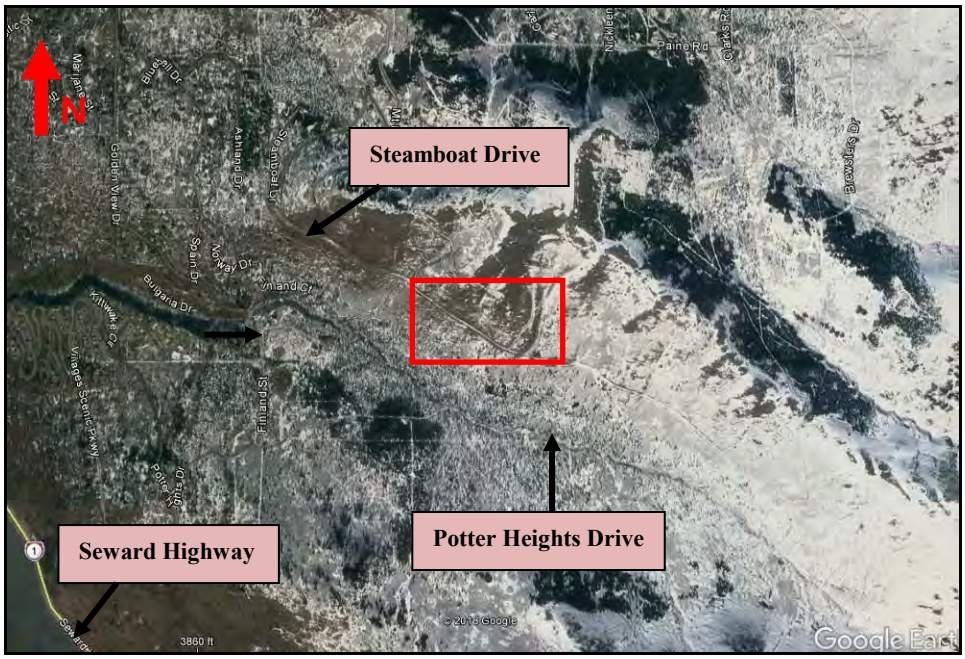
Portion of MTP T 14N, R 1W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 3



Location:	Dirt road extension of Steamboat Drive, north of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-221-02
Legal Description:	Tract 3, Potter Creek Subdivision, Plat No. 71-202

Grantor:	J&L Miller Alaska Community Property	**Instrument:**	Warranty Deed
Grantee:	Christopher Matthew & Kimberly Cavanaugh	**Document No:**	2014-031020
Sale Date:	6/17	**Data Source:**	Broker
Sale Price:	$350,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$350,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	80.00 Acres	**Public Utilities:**	Electricity
Zoning:	R-10	**Intended Use:**	Residential
Access:	Dirt trail extension of Steamboat Drive	**Highest & Best Use:**	Residential
Easements/Restrictions:	Section line easements; 60-foot bisecting road easement	**Inspected By:**	Steve MacSwain, MAI

Property Description:

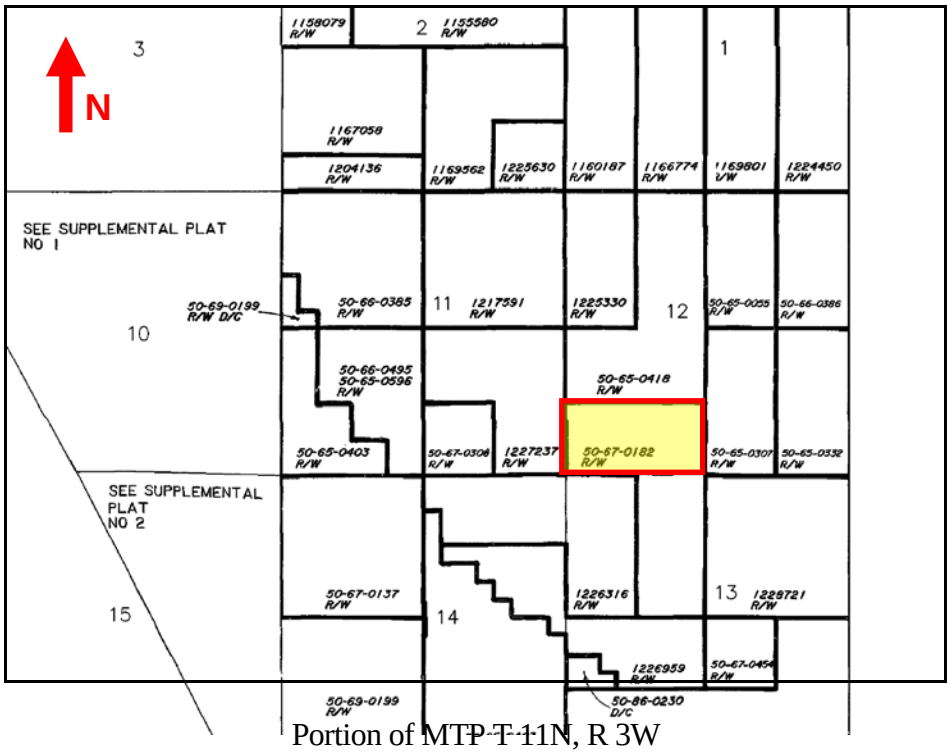
This 80-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on the southwest slope near Nystrom Peak, the parcel has a moderate to steep slope. Access is via a well-travelled, dirt roadway extension of Steamboat Drive that pass through the parcel and continues to several other properties. Electricity is at the site.

Remarks:

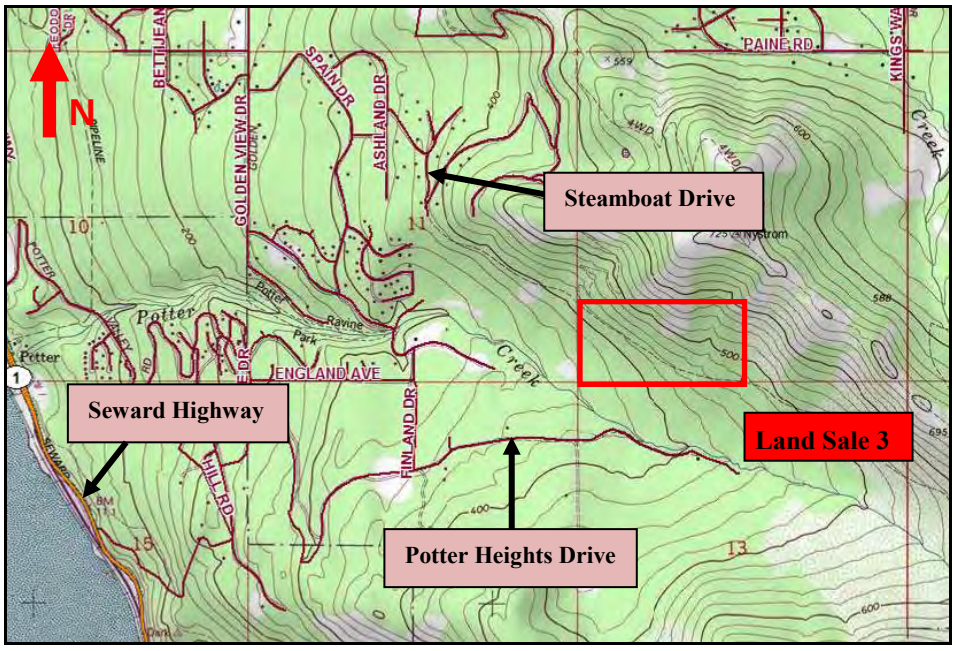
The parcel was originally listed at $400,000, before lowering to $370,000 and securing an offer after 16.5 months of exposure.

Analysis **$350,000** ÷ **80.00 Acres** = **$4,375/Acre**

Comparable Land Sale 3



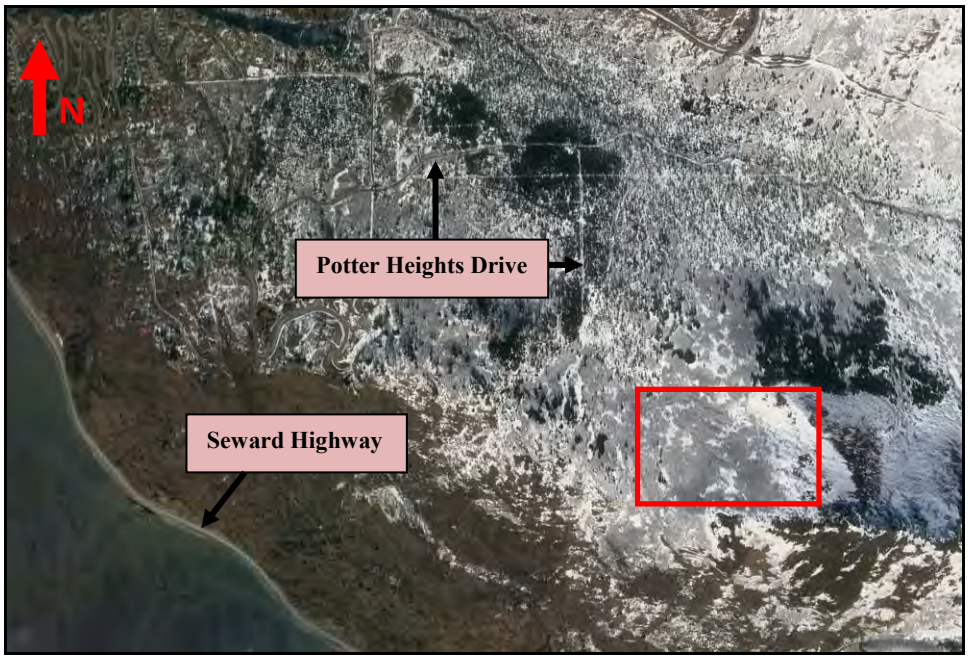
Portion of MTP T 11N, R 3W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 7



Location:	End of dirt road from Miller Drive, South of Potter Heights Drive, Potter Valley neighborhood, Anchorage, Alaska
Assessor Number:	020-321-25
Legal Description:	Tract 2, McHugh Subdivision, Plat 88-10, Anchorage Recording District

Grantor:	Chrisopher R. Miller (Trustee for Estate of Helena Marie Miller)	**Instrument:**	Warranty Deed
Grantee:	Eric and Christy Gieser	**Document No:**	2015-053500-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$130,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$130,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	62.50 Acres	**Public Utilities:**	None
Zoning:	R-10	**Intended Use:**	Residential/access
Access:	Dirt road though access easement and section line easement	**Highest & Best Use:**	Residential
Easements/Restrictions:	50-foot section line easement along south boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

This 62.50-acre parcel is located in the Potter Valley neighborhood about 10± miles from Midtown Anchorage. Setting on slope near Hugh Peak, the parcel has a moderate to steep slope with northwesterly view of Anchorage and Turnagain Arm. Access is via a dirt road, and an undeveloped section line easement. Public electricity is are about 1,500 feet to the northwest.

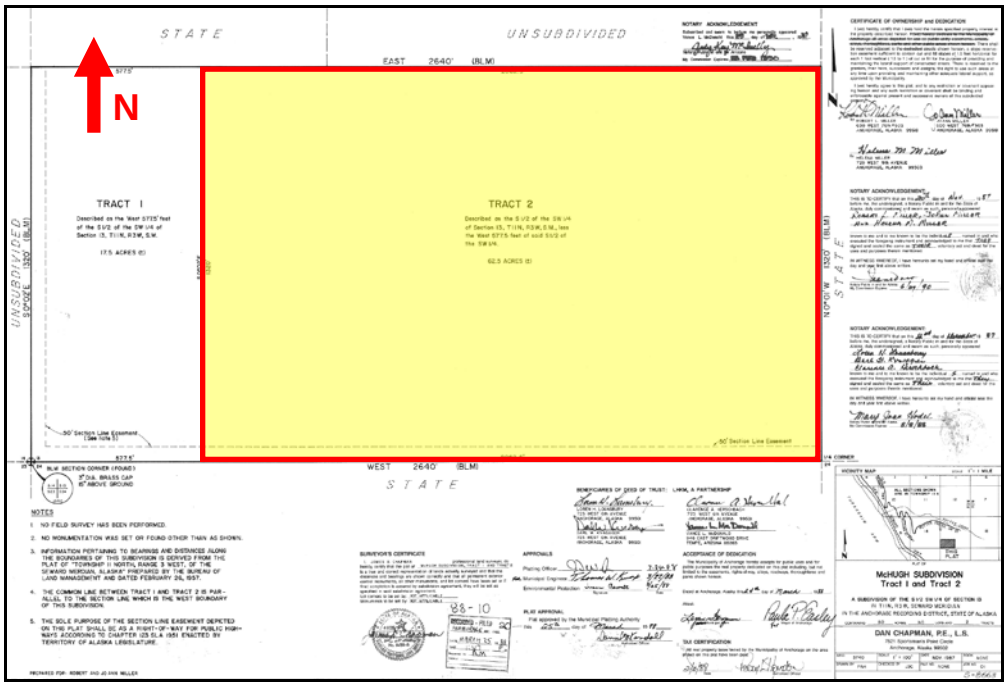
Remarks:

The Broker stated the parcel pended after a marketing time of 4 days with a full price offer from an adjacent property owner. The buyer purchased the parcel for access to their existing property.

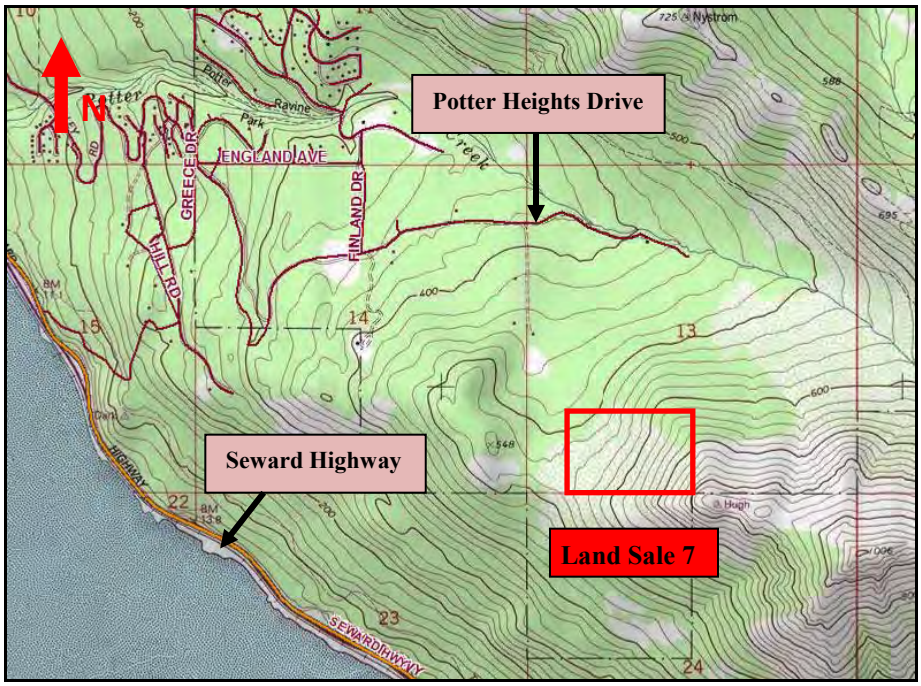
MacSwain Associates LLC

Analysis	$130,000	÷	62.50 Acres	= $2,080/Acre

Comparable Land Sale 7



Plat No. 82-59



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 8



Location:	Bisected by Brewsters Drive, off Kings Way, Bear Valley neighborhood, Anchorage, Alaska		
Assessor Number:	020-151-03		
Legal Description:	N1/2NE1/4NW1/4, Section 7, T 11N, R 2W, SM, Anchorage Recording District		
Grantor:	James Rowe	**Instrument:**	Warranty Deed
Grantee:	Shawn P. and Joell F. McAlpin	**Document No:**	2015-046895-0
Sale Date:	9/15	**Data Source:**	Broker
Sale Price:	$149,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$149,000	**Property Rights:**	Fee simple interest
Terms:	Owner financed, $25,000 down payment, $124,000 Deed of Trust at undisclosed terms		
Land Area:	20.00 Acres	**Public Utilities:**	Electricity at northern boundary
Zoning:	R-10	**Intended Use:**	Residential
Access:	Gravel roadbed	**Highest & Best Use:**	Residential
Easements/Restrictions:	Bisecting roadway; 50-foot section line easement along southern boundary	**Inspected By:**	Steve MacSwain, MAI

Property Description:

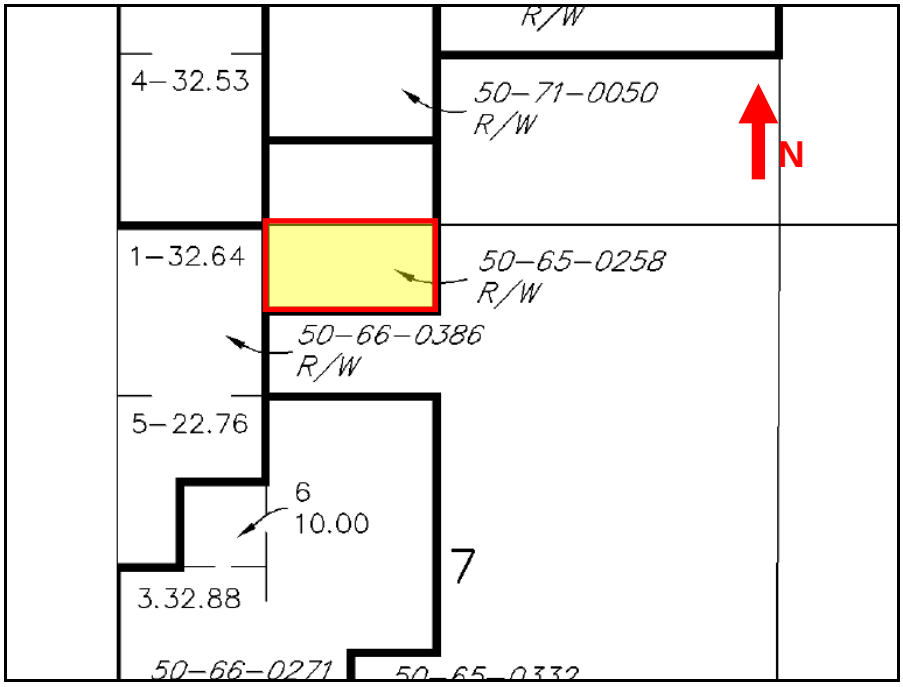
This 20.00-acre parcel is located in on either side of Brewsters Drive, in the Bear Valley neighborhood, about 9.5± miles from Midtown Anchorage. The parcel is bisected by Brewsters Drive, a gravel road that extends southerly from Kings Way. Located on the west side of a mountain base, the parcel has a moderate to steep downward slope from east to west. However, there are several areas suitable for development along the east side of the roadway. Though unmaintained, the gravel roadbed is sufficient for vehicle passage.

Remarks:

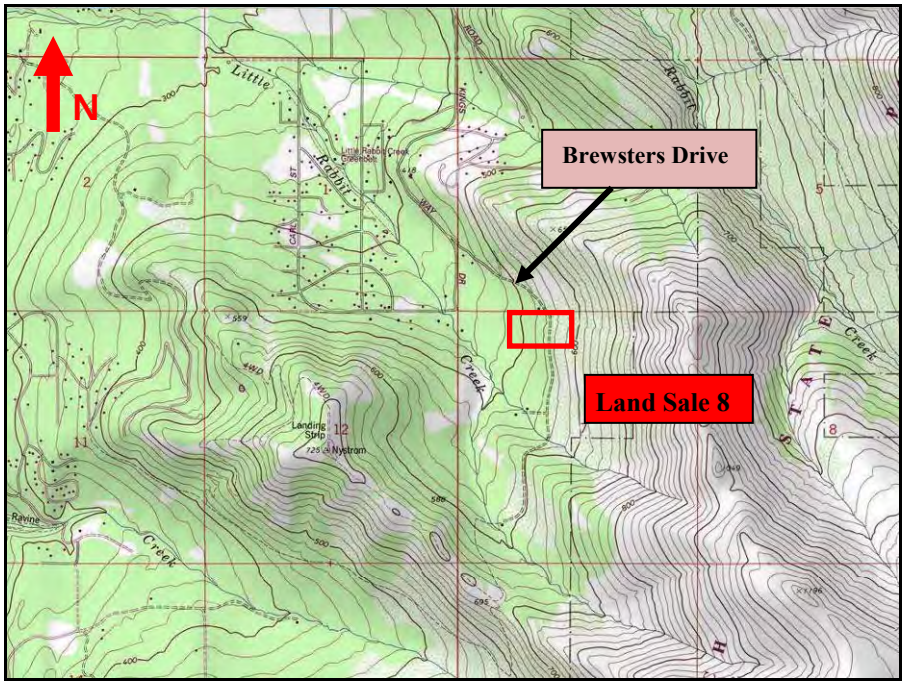
The parcel was listed off and on for several years, lastly listed in February 2014 for $169,900, before lowering to $149,000 securing an offer a few months later. The Broker stated that owner financing with $25,000 down did not affect the sale price.

Analysis **$149,000** ÷ **20.00 Acres** = **$7,450/Acre**

Comparable Land Sale 8



Portion of MTP T 11N, R 2W



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 10



Location:	North side of Seward Highway near Milepost 100.4, Bird Creek, Alaska
Assessor Number:	090-022-06
Legal Description:	Parcel 1: Lot 22, US Survey No. 3202, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska. Parcel 2: Lot 14, US Survey No. 3680, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Elizabeth A. Davidson	**Instrument:**	Statutory Warranty Deed
Grantee:	Terra B. Nelson	**Document No:**	2013-067978-0
Sale Date:	12/13	**Data Source:**	Broker
Sale Price:	$105,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$105,000	**Property Rights:**	Fee simple interest
Terms:	Conventional financing		

Land Area:	2.50± acres	**Public Utilities:**	E & T; NG in proximity
Zoning:	R-11 (now TA)	**Intended Use:**	Residential
Access:	Seward Highway	**Highest & Best Use:**	Residential
Easements/Restrictions:	None noted	**Inspected By:**	Steve MacSwain, MAI

Property Description:

This 2.50-acre lot is located on the north side of Seward Highway, at the east end of Bird Creek. Location is 20.5± miles from Midtown Anchorage. A driveway leads to a clearing where a restaurant was once located, but burned down over 30 years ago. Topography is relatively steep at the south boundary, but levels our near the eastern portion. Despite the conveyance of a second lot containing 1.22 acres, it lies within a PLO and the State of Alaska has claimed jurisdiction.

Remarks:

The property was listed off and on for over five years originally for $135,000, before accepting an offer at $105,000. The seller bought the property in 2008 for $120,000, but based the purchase on potential entitlement to the 1.22 acres within the PLO.

Analysis **$105,000** ÷ **2.50± Acres** = **$42,000/Acre**

MacSwain Associates LLC

Comparable Land Sale 11



Location:	North side of Seward Highway near Milepost 100.4, Bird Creek, Alaska
Assessor Number:	090-022-06
Legal Description:	Parcel 1: Lot 22, US Survey No. 3202, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska. Parcel 2: Lot 14, US Survey No. 3680, according to the official survey thereof, in the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Jason E. Skala and Holly Skala-Lawson	**Instrument:**	Warranty Deed
Grantee:	Elizabeth A. Davidson	**Document No:**	2008-050298-0
Sale Date:	9/08	**Data Source:**	Broker
Sale Price:	$120,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$120,000	**Property Rights:**	Fee simple interest
Terms:	Conventional financing		

Land Area:	2.50± acres	**Public Utilities:**	E & T; NG in proximity
Zoning:	R-11 (now TA)	**Intended Use:**	Residential
Access:	Seward Highway	**Highest & Best Use:**	Residential
Easements/Restrictions:	None noted	**Inspected By:**	Steve MacSwain, MAI

Property Description:

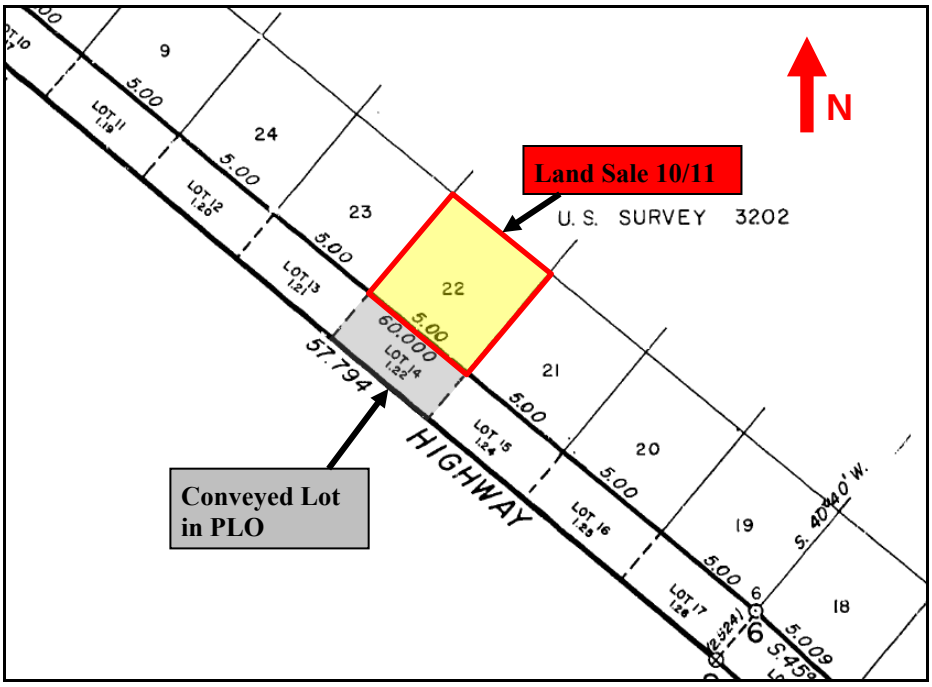
This 2.50-acre lot is located on the north side of Seward Highway, at the east end of Bird Creek. Location is 20.5± miles from Midtown Anchorage. A driveway leads to a clearing where a restaurant was once located, but burned down over 30 years ago. Topography is relatively steep at the south boundary, but levels our near the eastern portion. Despite the conveyance of a second lot containing 1.22 acres, it lies within a PLO and the State of Alaska has claimed jurisdiction.

Remarks:

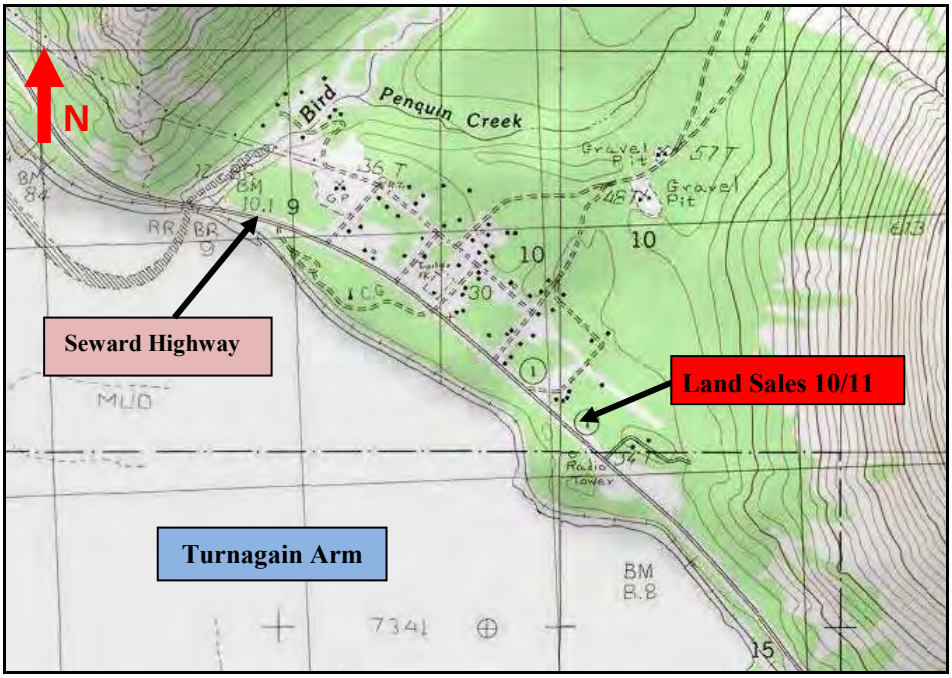
The property was listed for just over four months at a price of $129,000, before accepting an offer at $120,000. The buyer based the purchase on potential entitlement to the 1.22 acres within the PLO, but State of Alaska claimed jurisdiction. The buyer listed the property in April 2009 for $129,900, and sold it in December 2013 for $105,000.

Analysis	**$120,000**	**÷**	**2.50± Acres**	**= $48,000/Acre**

Comparable Land Sale 10 & 11



Portion of US Survey 3680



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 14



Location:	West side of Ledyard Circle, north of Seward Highway near Milepost 103, Indian, Alaska
Assessor Number:	090-042-34
Legal Description:	Lot 34, Chugach Park View Subdivision, according to the official plat thereof, filed under Plat Number 2005-202, in the records of the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Drum-Wuitshik, LLC	**Instrument:**	Warranty Deed
Grantee:	Daniel and Meredith Gutierrez	**Document No:**	2017-022189-0
Sale Date:	3/17	**Data Source:**	Broker
Sale Price:	$115,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$115,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	3.28± acres	**Public Utilities:**	E, T, NG
Zoning:	TA	**Intended Use:**	Residential
Access:	Ledyard Circle	**Highest & Best Use:**	Residential
Easements/Restrictions:	Bisecting creek with setbacks; wetlands; CCRs; perimeter utility easements	**Inspected By:**	Steve MacSwain, MAI

Property Description:

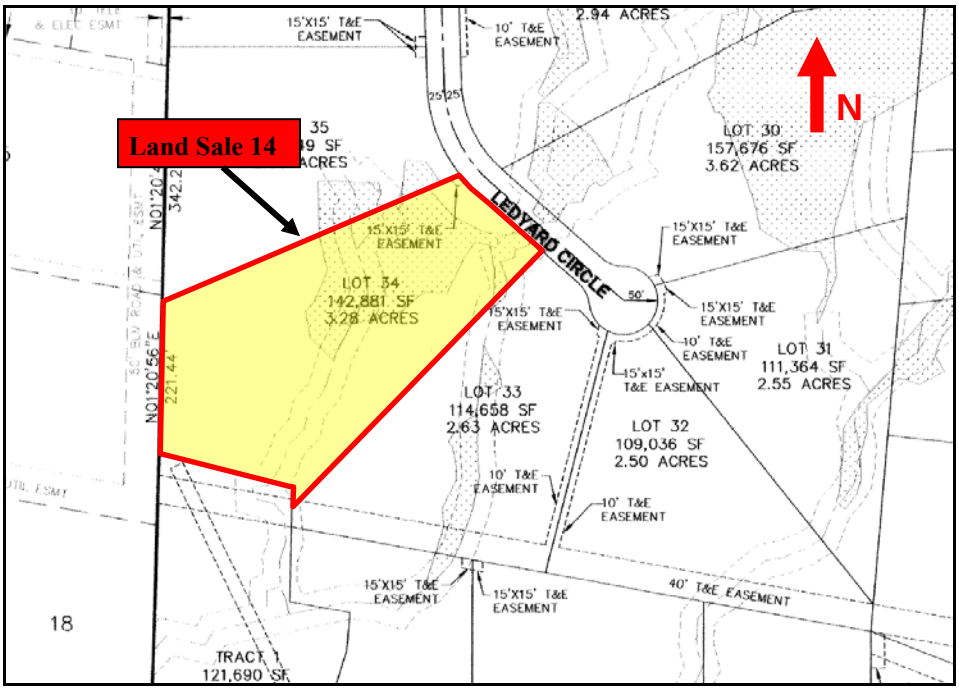
This 3.28-acre lot is located in a relatively new subdivision in Indian. Location is 17.5± miles from Midtown Anchorage. Ledyard Circle provides access, and there is electricity, telephone, and natural gas at the site. Topography is moderately sloping and provides some mountain views. A small creek bisects the parcel, and creates a designated wetlands area restricting development potential and increasing development costs. Subdivision CCRs restrict use to single-family residential.

Remarks:

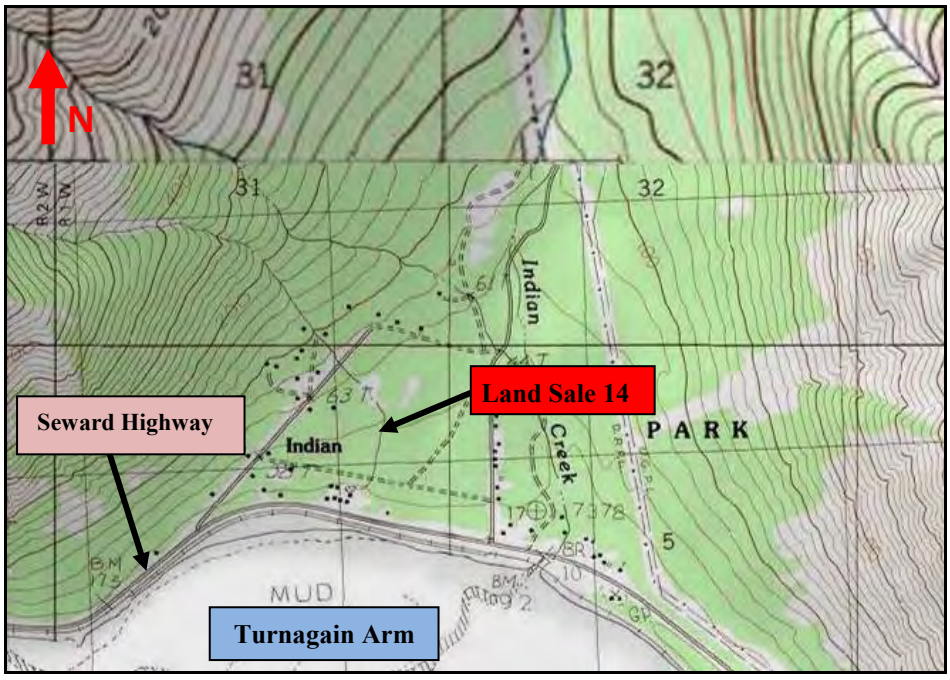
The property was listed for about two years at a price of $130,000, before accepting an offer of $115,000.

Analysis **$115,000** ÷ **3.28± Acres** = **$35,061/Acre**

Comparable Land Sale 14



Portion of Plat No. 2005-202



National Geographic TOPO Map

MacSwain Associates LLC

Comparable Land Sale 15



Location:	End of Reindeer Circle, and north side of Seward Highway near Milepost 103, Indian, Alaska
Assessor Number:	090-042-17
Legal Description:	Lot 17, Chugach Park View Subdivision, according to the official plat thereof, filed under Plat Number 2005-202, in the records of the Anchorage Recording District, Third Judicial District, State of Alaska.

Grantor:	Ledyard Group, LLC	**Instrument:**	Warranty Deed
Grantee:	Mak Enterprises, LLC	**Document No:**	2015-036002-0
Sale Date:	7/15	**Data Source:**	Broker
Sale Price:	$215,000	**Confirmed By:**	Steve MacSwain, MAI
Cash Equivalent Price:	$215,000	**Property Rights:**	Fee simple interest
Terms:	Cash		

Land Area:	3.23± acres	**Public Utilities:**	E, T, NG
Zoning:	TA	**Intended Use:**	Residential
Access:	Reindeer Circle	**Highest & Best Use:**	Residential
Easements/Restrictions:	Driveway easement; perimeter utility easements	**Inspected By:**	Steve MacSwain, MAI

Property Description:

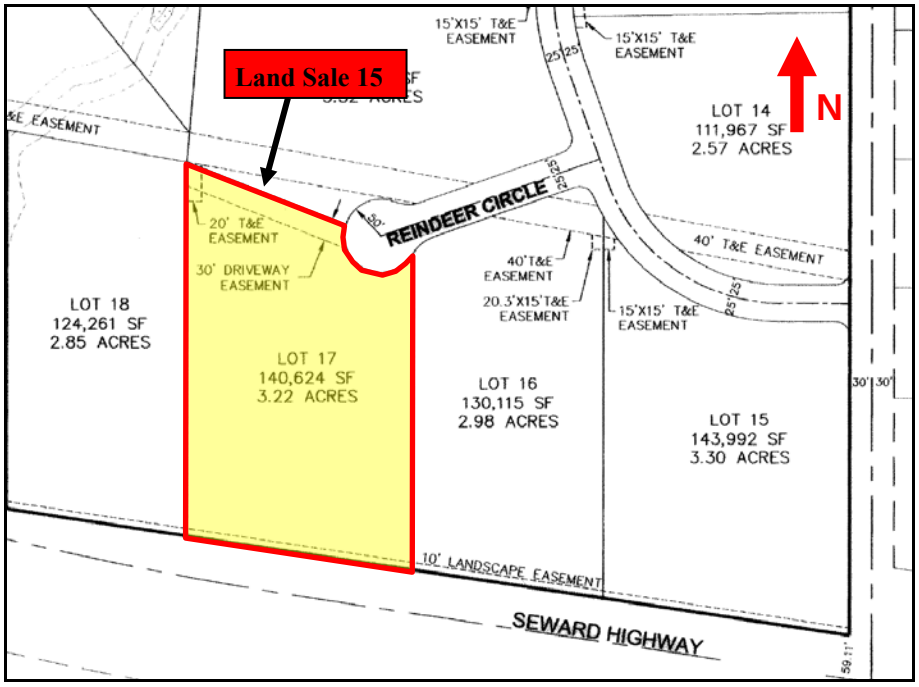
This 3.23-acre lot is located in a relatively new subdivision in Indian. Location is 17.5± miles from Midtown Anchorage. Access is via paved Reindeer Circle; the plat prohibits direct access to/from Seward Highway. There is electricity, telephone, and natural gas at the site. Topography is moderately sloping and provides some mountain views. This lot is not restricted by subdivision CCRs.

Remarks:

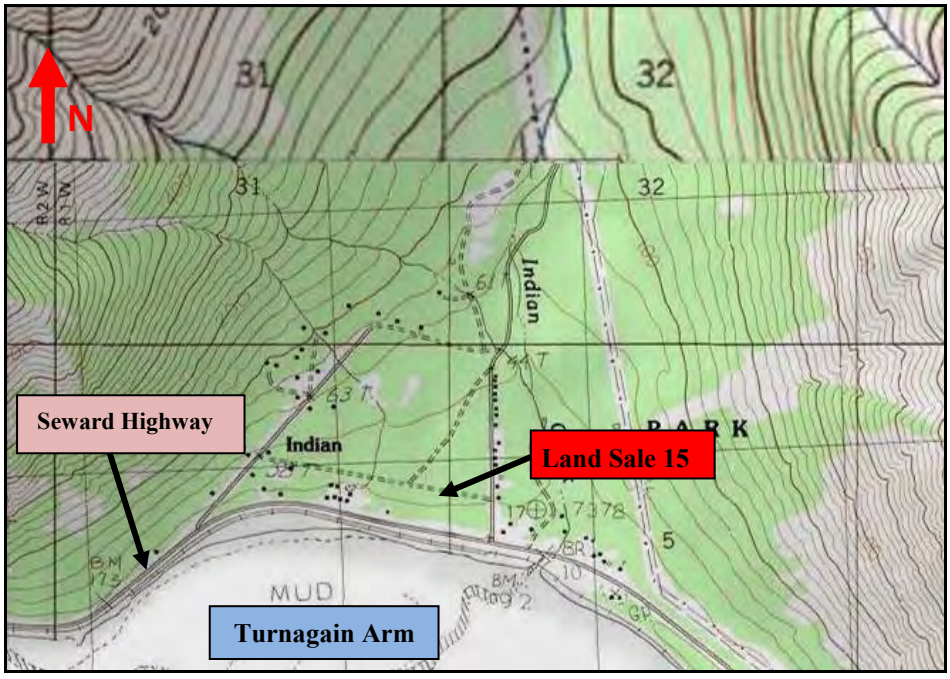
The property was listed for about five months at a price of $225,000, before accepting an offer at $215,000. Although commercial use is allowable, lack of highway access diminishes commercial appeal.

Analysis **$215,000** ÷ **3.23± Acres** = **$66,563/Acre**

Comparable Land Sale 15



Portion of Plat No. 2005-202



National Geographic TOPO Map

MacSwain Associates LLC

4401 Business Park Boulevard, Suite 22, Anchorage, Alaska 99503

Appraiser: Steve MacSwain, MAI

Member of Appraisal Institute - No. 5700

State of Alaska, Certified General Real Estate Appraiser - No. 42

Professional Experience: 1986 to Present - MacSwain Associates LLC

1976 to 1986 - Appraisal Company of Alaska - President

1970 to 1975 - Real Estate Services Corporation – Appraiser

1969 to 1970 - State of Alaska Department of Highways - Right of Way Agent

Real estate appraiser and consultant of all property types throughout Alaska including commercial, industrial, subdivisions and special-purpose properties. Appraisals have been performed for financing, leasing, insurance, condemnation, taxation, property damages, investment analysis, and buy-sell decisions. Appraisals include valuation of both real property and business enterprises. Professional experience totals 49 years. Life-long Alaskan resident of Alaskan Native descent.

Education: Bachelor of Business Administration, Finance (1969), University of Alaska Fairbanks

Appraisal Education: The following is a list of completed appraisal courses and seminars.

2018 – Uniform Standards of Professional Appraisal Practice – Update by the Appraisal Institute

2017 – Appraising Environmentally Contaminated Properties by the Appraisal Institute

2017 – Residential & Commercial Valuation of Solar by the Appraisal Institute

2017 – Right of Way Acquisition for Pipeline Projects by the International Right of Way Association

2015 – Litigation Appraising: Specialized Topics and Applications by the Appraisal Institute

2015 – Business Practices and Ethics by the Appraisal Institute

2013 – Complex Litigation Appraisal Case Studies by the Appraisal Institute

2013 – Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book) by the Appraisal Institute

2012 – Appraisal Curriculum Overview by the Appraisal Institute

2010 – Reviewing Appraisals in Eminent Domain by the International Right of Way Association

2010 – Commercial Appraisal Engagement and Review Seminar for Bankers and Appraisers by the Appraisal Institute

2009 – The Appraiser as an Expert Witness: Preparation and Testimony by the Appraisal Institute

2009 – Attacking and Defending an Appraisal in Litigation by Whitmer Education

2008 – Uniform Standards of Professional Appraisal Practice by the Appraisal Institute

2007 – Business Practices and Ethics by the Appraisal Institute

2007 – Eminent Domain Law for Right of Way Professionals by the International Right of Way Association

2007 – Appraisal Review for Federal Aid Programs by the International Right of Way Association

2007 – Analyzing Operating Expenses by the Appraisal Institute

2007 – Forecasting Revenue by the Appraisal Institute

2007 – Case Studies in Highest and Best Use by the Appraisal Institute

1969-2006: Numerous appraisal classes pertaining to principles, income capitalization, cost analysis, sale comparison approach, and highest and best use analysis by the Appraisal Institute, Society of Real Estate Appraisers, International Right-of-Way Association, International Association of Assessing Officers, and Marshall Valuation Service

Membership and Organizations: Member of Appraisal Institute – No. 5700, International Right of Way Association (IRWA), and Building Owners and Managers Association (BOMA)

Public Service: Past Chairman of the State Board of Certified Appraisers

Past Member of Board of Equalization, Municipality of Anchorage, National Experience Review Committee of the Appraisal Institute, and Regional Ethics and Counseling Panel of the Appraisal Institute

Past President of Alaska Chapter 57 of the Appraisal Institute

Significant Assignments:

- Appraised Pacific Spaceport Complex-Alaska (PSCA) land and facilities for Alaska Aerospace Corporation on Kodiak Island..
- Appraised proposed LNG Pipeline, a FERC-regulated 860-mile pipeline transporting liquefied natural gas.
- Appraised the Trans-Alaska Pipeline System, a FERC-regulated 800- pipeline that transports crude oil from Prudhoe Bay to Valdez, for TAPS ownership.
- Appraised remote lands (65,000± acres) owned by three Native corporations damaged by the *Selendang Ayu* grounding and subsequent oil spill.
- Appraised Calais Company, Inc., a real estate holding company consisting of 39 commercial parcels in Anchorage.
- Principal real estate consultant and expert witness for all lands affected by the *Exxon Valdez* oil spill. Project involved over 2,000,000 acres of remote land and nearly 2,000 private property owners.
- Appointed as a representative of a three-member panel that analyzed and valued over 1,000,000 acres and 8,000 parcels for the Mental Health Lands Settlement.
- Contract assessor for the North Slope Borough, Kodiak Island Borough, City of Nome, and the City of Valdez.
- Represented Seibu Alaska, Inc. (Alyeska Resort and Alyeska Prince Hotel) in preparing of their property tax appeal with the Municipality of Anchorage that resulted in a $65 million reduction in assessed value.
- Appraised submerged tideland parcels and wetlands parcels located in Womens Bay on Kodiak Island for the purpose of an exchange between Koniag, Inc. and U.S. Fish and Wildlife Service.
- Appraised Common Carrier Pipeline right-of-ways leased and operated by BP Transportation Alaska and ConocoPhillips Alaska.
- Appraised 3,600 acres consisting of the former Adak Naval Air Station and Submarine Base conveyed to the City of Adak and the State of Alaska.

Expert Witness Experience: Steve MacSwain, MAI is qualified as an expert witness in both the United States Federal Court and the State of Alaska Superior Court. Steve has testified as an expert witness in State and Federal courts. In addition, Steve has testified as expert witness in numerous Alaskan municipal tax courts, public hearings, and depositions on matters related to real property.

Arbitrator Experience: Appointed a Master by the Superior Court of Alaska and Municipality of Anchorage to serve as an arbitrator in determining just compensation.



License #: APRG42
Effective: 05/16/2017
Expires: 06/30/2019

STATE OF ALASKA
Department of Commerce, Community, and Economic Development
Division of Corporations, Business, and Professional Licensing
Real Estate Appraisers

Licensee: **STEVEN JAMES MACSWAIN**
License Type: **Certified General Real Estate Appraiser**
Status: **Active**

Commissioner: Chris Hladick

REVIEW APPRAISER'S DETERMINATION OF APPRAISAL COMPLIANCE WITH UASFLA & USPAP	PROJECT NAME: WINDY CORNER SEWARD HWY. MILEPOST 105-107
By	DOT & PF PROJECT NO. 0A3-1(34)/56631
Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	PARCEL NO. "RELINQUISHMENT PARCEL" (STATE OF ALASKA) KVC FILE NO. 18-101B

Property Owner: State of Alaska (Note: Although portions of the appraised property are under the ownership of various agencies of the State of Alaska, the appraiser was instructed by his client, DOWL, Inc., to appraise the property as if it were owned in its entirety by a single entity, *i.e*., the State of Alaska).

Appraised Property: The fee-simple interest in 87.63 acres of ***hypothetically*** vacant land located along the Seward Highway/Alaska Railroad corridor between the communities of Rainbow and Indian, Alaska. The real estate is roughly, legally described as being situated in Sections 2 and 3, Township 10 North, Range 2 West, Seward Meridian, Alaska. (**Note: The appraiser was instructed to exclude from valuation all roadway, roadside and railroad improvements, *i.e.*, the land was to be appraised as if it were vacant and unimproved**).

I, Franklin M. King, MAI, have completed a technical review of the August 10, 2018, appraisal report on the above-referenced property which was prepared, signed and certified by Steve MacSwain, MAI. My review was completed without a field inspection of the subject property or the comparable sale properties, *i.e*., a "desk" review was performed. The scope of my review included: 1) a check for proper appraisal methodology, analytical consistency, internal logic, and accuracy of mathematical calculations; 2) a check for compliance with the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) and the *Uniform Standards of Professional Appraisal Practice* (USPAP); and 3) a determination as to whether the appraisal constitutes an adequate basis for an offer of just compensation. I did not independently confirm the market data or subject property data presented in the appraisal report.

My five-page appraisal review report herein is intended for use only by my client, DOWL, Inc., as well as the State of Alaska and the National Park Service.

Mr. MacSwain determined that the highest and best use of the appraised property (the "larger parcel") was for continued use as a portion of a transportation/distribution corridor connecting Anchorage and the Kenai Peninsula and serving intermediate points along the way. Accordingly, he utilized the across-the-fence (ATF) method to value three distinctly different types of land within the corridor segment by analyzing and adjusting comparable land sales. By applying a market-derived corridor factor to the ATF value, the appraiser finalized his opinion of market value for the larger parcel, the remainder property and the acquisition area. The results of his appraisal were communicated in an "Appraisal Report" as defined in the 2018-2019 edition of USPAP.

The fee simple interest in a 14.70-acre portion of the larger parcel is hypothetically to be acquired as part of the above-captioned road project.[1] The appraiser's opinion of the **market value** of the **acquisition,** as of **August 8, 2018** was **$231,300.00 (Two Hundred Thirty One Thousand Three Hundred Dollars)**.

[1] Mr. Robert Wright of DOWL informed me that, although the 14.70 acres are actually proposed to be relinquished by the current ownership as part of a complex interagency, multi-parcel transaction, the appraiser was instructed to conduct the appraisal as if the acreage was actually to be acquired from the 87.63-acre larger parcel. This instruction was given to ensure that, for equitable purposes, the "before-and-after" valuation methodology utilized in a separate appraisal of a 26.30-acre portion of the larger parcel (the "Acquisition Parcel") was also utilized for the 14.70-acre "Relinquishment Parcel."

The appraisal report contained a few minor errors and inconsistencies—none of which had any impact on the value conclusions. Mr. MacSwain made corrections and submitted a final draft of the report to me for review. He assured me that he will also promptly submit same to DOWL, Inc.

Review Appraiser's Determination:

- ***In my opinion, the content, analyses, and conclusions in the appraisal report are in compliance with the current editions of* UASFLA *and* USPAP.**
- ***The market value opinions were based on an adequate quantity of relevant data and proper adjustments to the data were made where appropriate.***
- ***The appraisal methods and techniques used were appropriate for the valuation problem.***
- ***The $231,300 market value opinion for the property rights that are hypothetically to be acquired is appropriate and reasonable, given the data and analyses presented, and I recommend approval of the appraisal as an adequate basis for an offer of just compensation.***

JUST COMPENSATION ALLOCATION:

Land:	$231,300
Section Line/PLO Interests:	$ N/A
Improvements	$ N/A
Cost-to-Cure:	$ N/A
Damages:	$ N/A
Special Benefits:	$ N/A
TOTAL:	**$231,300**

Uneconomic Remnant? ☐ Yes ☑ No If yes, enter value: $ N/A and describe:

Reviewer Assumptions & Limiting Conditions:

- This appraisal review is based solely on data and information contained in the appraisal report that is the subject of this review.
- It is assumed that the data and information are factual and accurate,
- I reserve the right to consider any additional data or information that may subsequently become available and to revise the opinions and conclusions in this report if such data and information indicate the need for such a change.
- All of the assumptions and limiting conditions contained in the appraisal report that is the subject of this review are also conditions of this review unless otherwise stated.

Review Appraiser Certification:

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this appraisal review report are true and correct.

- The reported analyses, opinions, and conclusions in this review report are limited only by the assumptions and limiting conditions stated in this review report, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

- I have no present or prospective interest in the property that is the subject of the work under review and no personal interest with respect to the parties involved.

- In May of 2017, I reviewed an appraisal report on this same property, which was also prepared by Steve MacSwain, MAI, and dated April 26, 2017. I have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of the work under review within the three-year period immediately preceding acceptance of this current assignment.

- I have no bias with respect to the property that is the subject of the work under review or to the parties involved with this assignment.

- My engagement in this assignment was not contingent upon developing or reporting predetermined results.

- My compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in this review or from its use.

- My compensation for completing this assignment is not contingent upon the development or reporting of predetermined assignment results or assignment results that favor the cause of the client, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal review.

- My analyses, opinions, and conclusions were developed and this review report was prepared in conformity with the requirements of the *Uniform Appraisal Standards for Federal Land Acquisitions* as well as the Appraisal Institute's Code of Professional Ethics & Standards of Professional Appraisal Practice, which include the *Uniform Standards of Professional Appraisal Practice*.

- The use of this review report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

- I have not made a personal inspection of the subject of the work under review.

- No one provided significant appraisal, appraisal review, or appraisal consulting assistance to me during the review process.

- As of the date of this report, I have not completed the continuing education program of the Appraisal Institute. I have, however, completed the State of Alaska's continuing education requirements for real estate appraisers.



_____

Franklin M. King, MAI
Review Appraiser

Alaska General Real Estate Appraiser
Certificate #APRG 18 — Expires 6/30/19

Date of Appraisal Review: August 21, 2018

APPRAISAL REPORT CHECKLIST By Franklin M. King, MAI 1221 Branch Creek Way Greensboro, GA 30642 Phone: 478-538-5661 — E-Mail: franklinkingjr@hotmail.com	**PROJECT NAME**: WINDY CORNER, SEWARD HIGHWAY MILEPOST 105-107 **DOT & PF PROJECT NO. 0A3-1(34)/56631** **PARCEL NO. "RELINQUISHMENT PARCEL" (STATE OF ALASKA)** KVC FILE NO. 18-101B

Appraiser: Steve MacSwain, MAI **Review Appraiser:** Franklin M. King, MAI

☑ Special Instructions: The appraiser was instructed by his client, DOWL, Inc., to base his value opinion on the hypothetical condition that the larger parcel was under the ownership of a single entity and that it consisted solely of vacant land. Mr. Bob Wright of DOWL informed the review appraiser that, although the 14.70-acre portion is actually proposed to be relinquished by the current ownership as part of a complex interagency multi-parcel transaction, the appraiser was instructed to conduct the appraisal as if the acreage was actually going to be acquired from the 87.63-acre larger parcel. This instruction was given to ensure that the "before-and-after" valuation methodology utilized in a separate appraisal of a 26.30-acre portion of the larger parcel (the "Acquisition Parcel") was also utilized for the 14.70-acre "Relinquishment Parcel."

Note: If item is not applicable, write "N/A" by the box for that item

☑ Current ROW Plans
☑ Appraisal matches plans
☑ Narrative Appraisal Summary Completed
☑ Certificate of Appraisal signed
☑ Scope of appraisal, Purpose and function
☑ Assumptions & Limiting Conditions
☑ Area & Neighborhood Analysis
☑ Land area and shape
☑ Access/Frontage
☑ Topography
☑ Soils
☑ Utilities
☑ Rights to be acquired
☐ Easements and encroachments shown
☑ Present use
☑ Zoning / Restrictions (Before & After)
☑ Known Hazards: Environmental, Flood
N/A Improvements described + sketch + shown on plat
N/A Specialty items or Tenant owned improvements
☑ Assessed Value/tax trends
☑ Plat/Plot Plan/Parcel Map
☑ Photos: land & improvements
☑ Ten-Year Sales History
☑ Highest and best use
☑ Approaches: Sales Comparison
☑ Support for Adjustments or Assumptions
☑ Value of the whole
☑ Conclusion and, if applicable, reconciliation
☑ Value of acquisition & allocation
☑ Remainder as a part of the whole
☑ Value reasonable and consistent
☐ Owner contact verification
N/A Title Report and Legal Description

Comparable Sales data should include:
☑ Comparable Sales map
☑ Size
☑ Shape
☑ Topography
☑ Utilities
☑ Soils
☑ Use / Zoning
☑ Access and Grade relationship
N/A Improvement allocation
☑ Photographs
☑ Verification by the appraiser

After Value: Has the appraiser considered
☑ Highest & Best Use change
☑ Access/Frontage issues
☑ Area/Shape
☑ Elevation or Drainage change
N/A Improvements
☑ Approaches: Sales Comparison
☑ Support for Adjustments
N/A Support for Damages/Special Benefits/Cost-to-cure

Issues: N/A

License #: APRG18
Effective: 06/06/2017
Expires: 06/30/2019

STATE OF ALASKA

Department of Commerce, Community, and Economic Development

Division of Corporations, Business, and Professional Licensing

Real Estate Appraisers

Licensee: **FRANKLIN M. KING**

License Type: **Certified General Real Estate Appraiser**

Status: **Active**

Commissioner: Chris Hladick

APPENDIX D

Environmental Screening Forms

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For conversions, complete one ESF for each of the converted and replacement sites.

Conversion Parcel - Turnagain Arm

A. ENVIRONMENTAL RESOURCES Indicate potential for adverse impacts. Use a separate sheet to clarify responses per instructions for Part A on page 9.	**Not Applicable-** Resource does not exist	**No/Negligible Impacts-** Exists but no or negligible impacts	**Minor Impacts**	**Impacts Exceed Minor** EA/EIS required	**More Data Needed to Determine Degree of Impact** EA/EIS required
1. Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.	☐	☐	☑	☐	☐
2. Air quality	☐	☐	☑	☐	☐
3. Sound (noise impacts)	☐	☐	☑	☐	☐
4. Water quality/quantity	☐	☑	☐	☐	☐
5. Stream flow characteristics	☑	☐	☐	☐	☐
6. Marine/estuarine	☐	☐	☑	☐	☐
7. Floodplains/wetlands	☐	☐	☑	☐	☐
8. Land use/ownership patterns; property values; community livability	☐	☑	☐	☐	☐
9. Circulation, transportation	☐	☐	☑	☐	☐
10. Plant/animal/fish species of special concern and habitat; state/ federal listed or proposed for listing	☐	☐	☑	☐	☐
11. Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.	☑	☐	☐	☐	☐
12. Unique or important wildlife/ wildlife habitat	☑	☐	☐	☐	☐
13. Unique or important fish/habitat	☑	☐	☐	☐	☐
14. Introduce or promote invasive species (plant or animal)	☐	☑	☐	☐	☐
15. Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc. *Most conversions exceed minor impacts. See Step 3.B*	☐	☐	☐	☑	☐
16. Accessibility for populations with disabilities	☑	☐	☐	☐	☐
17. Overall aesthetics, special characteristics/features	☐	☐	☑	☐	☐
18. Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. Attach SHPO/THPO determination.	☐	☐	☑	☐	☐
19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	☐	☑	☐	☐	☐
20. Minority and low-income populations	☑	☐	☐	☐	☐
21. Energy resources (geothermal, fossil fuels, etc.)	☑	☐	☐	☐	☐
22. Other agency or tribal land use plans or policies	☐	☑	☐	☐	☐
23. Land/structures with history of contamination/hazardous materials even if remediated	☑	☐	☐	☐	☐
24. Other important environmental resources to address.	☑	☐	☐	☐	☐

B. MANDATORY CRITERIA If your LWCF proposal is approved, would it…	Yes	No	To be determined
1. Have significant impacts on public health or safety?	☐	☑	☐
2. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands, wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (E.O. 11990); floodplains (E.O 11988); and other ecologically significant or critical areas.	☐	☑	☐
3. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?	☐	☑	☐
4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?	☐	☑	☐
5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	☐	☑	☐
6. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?	☐	☑	☐
7. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office.(Attach SHPO/THPO Comments)	☐	☑	☐
8. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.	☐	☑	☐
9. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?	☐	☑	☐
10. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?	☐	☑	☐
11. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?	☐	☑	☐
12. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?	☐	☑	☐

Environmental Reviewers

The following individual(s) provided input in the completion of the environmental screening form. *List all reviewers including name, title, agency, field of expertise. Keep all environmental review records and data on this proposal in state compliance file for any future program review and/or audit. The ESF may be completed as part of a LWCF pre-award site inspection if conducted in time to contribute to the environmental review process for the proposal.*

1. Patrick Whitesell, Env. Specialist - DOWL;

2.

3.

The following individuals conducted a site inspection to verify field conditions.
List name of inspector(s), title, agency, and date(s) of inspection.

1.

2.

3.

State may require signature of
LWCF sub-recipient applicant here: _____Date_____

For conversions, complete one ESF for each of the converted and replacement sites.

Conversion Parcel - Uplands (Material Sites 1 & 6)

A. ENVIRONMENTAL RESOURCES Indicate potential for adverse impacts. Use a separate sheet to clarify responses per instructions for Part A on page 9.	**Not Applicable-** Resource does not exist	**No/Negligible Impacts-** Exists but no or negligible impacts	**Minor Impacts**	**Impacts Exceed Minor** EA/EIS required	**More Data Needed to Determine Degree of Impact** EA/EIS required
1. Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.	☐	☐	☑	☐	☐
2. Air quality	☐	☐	☑	☐	☐
3. Sound (noise impacts)	☐	☐	☑	☐	☐
4. Water quality/quantity	☐	☐	☐	☐	☐
5. Stream flow characteristics	☑	☐	☐	☐	☐
6. Marine/estuarine	☑	☐	☐	☐	☐
7. Floodplains/wetlands	☑	☐	☐	☐	☐
8. Land use/ownership patterns; property values; community livability	☐	☐	☑	☐	☐
9. Circulation, transportation	☑	☐	☐	☐	☐
10. Plant/animal/fish species of special concern and habitat; state/ federal listed or proposed for listing	☑	☐	☐	☐	☐
11. Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.	☑	☐	☐	☐	☐
12. Unique or important wildlife/ wildlife habitat	☑	☐	☐	☐	☐
13. Unique or important fish/habitat	☑	☐	☐	☐	☐
14. Introduce or promote invasive species (plant or animal)	☐	☑	☐	☐	☐
15. Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc. *Most conversions exceed minor impacts. See Step 3.B*	☐	☐	☐	☑	☐
16. Accessibility for populations with disabilities	☑	☐	☐	☐	☐
17. Overall aesthetics, special characteristics/features	☐	☐	☑	☐	☐
18. Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. Attach SHPO/THPO determination.	☑	☐	☐	☐	☐
19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	☐	☑	☐	☐	☐
20. Minority and low-income populations	☑	☐	☐	☐	☐
21. Energy resources (geothermal, fossil fuels, etc.)	☑	☐	☐	☐	☐
22. Other agency or tribal land use plans or policies	☐	☑	☐	☐	☐
23. Land/structures with history of contamination/hazardous materials even if remediated	☑	☐	☐	☐	☐
24. Other important environmental resources to address.	☑	☐	☐	☐	☐

B. MANDATORY CRITERIA If your LWCF proposal is approved, would it…	Yes	No	To be determined
1. Have significant impacts on public health or safety?	☐	✓	☐
2. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands, wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (E.O. 11990); floodplains (E.O 11988); and other ecologically significant or critical areas.	☐	✓	☐
3. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?	☐	✓	☐
4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?	☐	✓	☐
5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	☐	✓	☐
6. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?	☐	✓	☐
7. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office.(Attach SHPO/THPO Comments)	☐	✓	☐
8. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.	☐	✓	☐
9. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?	☐	✓	☐
10. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?	☐	✓	☐
11. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?	☐	✓	☐
12. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?	☐	✓	☐

Environmental Reviewers

The following individual(s) provided input in the completion of the environmental screening form. *List all reviewers including name, title, agency, field of expertise. Keep all environmental review records and data on this proposal in state compliance file for any future program review and/or audit. The ESF may be completed as part of a LWCF pre-award site inspection if conducted in time to contribute to the environmental review process for the proposal.*

1. Patrick Whitesell, Env. Specialist - DOWL;

2.

3.

The following individuals conducted a site inspection to verify field conditions.
List name of inspector(s), title, agency, and date(s) of inspection.

1.

2.

3.

State may require signature of
LWCF sub-recipient applicant here: _____Date_____

For conversions, complete one ESF for each of the converted and replacement sites.

Relinquishment Parcel

A. ENVIRONMENTAL RESOURCES Indicate potential for adverse impacts. Use a separate sheet to clarify responses per instructions for Part A on page 9.	**Not Applicable-** Resource does not exist	**No/Negligible Impacts-** Exists but no or negligible impacts	**Minor Impacts**	**Impacts Exceed Minor** EA/EIS required	**More Data Needed to Determine Degree of Impact** EA/EIS required
1. Geological resources: soils, bedrock, slopes, streambeds, landforms, etc.	☐	☑	☐	☐	☐
2. Air quality	☐	☐	☑	☐	☐
3. Sound (noise impacts)	☐	☐	☑	☐	☐
4. Water quality/quantity	☐	☐	☑	☐	☐
5. Stream flow characteristics	☐	☑	☐	☐	☐
6. Marine/estuarine	☐	☑	☐	☐	☐
7. Floodplains/wetlands	☐	☑	☐	☐	☐
8. Land use/ownership patterns; property values; community livability	☐	☑	☐	☐	☐
9. Circulation, transportation	☐	☐	☑	☐	☐
10. Plant/animal/fish species of special concern and habitat; state/ federal listed or proposed for listing	☐	☑	☐	☐	☐
11. Unique ecosystems, such as biosphere reserves, World Heritage sites, old growth forests, etc.	☑	☐	☐	☐	☐
12. Unique or important wildlife/ wildlife habitat	☑	☐	☐	☐	☐
13. Unique or important fish/habitat	☑	☐	☐	☐	☐
14. Introduce or promote invasive species (plant or animal)	☐	☑	☐	☐	☐
15. Recreation resources, land, parks, open space, conservation areas, rec. trails, facilities, services, opportunities, public access, etc. *Most conversions exceed minor impacts. See Step 3.B*	☐	☑	☐	☐	☐
16. Accessibility for populations with disabilities	☐	☑	☐	☐	☐
17. Overall aesthetics, special characteristics/features	☐	☐	☑	☐	☐
18. Historical/cultural resources, including landscapes, ethnographic, archeological, structures, etc. Attach SHPO/THPO determination.	☑	☐	☐	☐	☐
19. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure	☐	☑	☐	☐	☐
20. Minority and low-income populations	☑	☐	☐	☐	☐
21. Energy resources (geothermal, fossil fuels, etc.)	☑	☐	☐	☐	☐
22. Other agency or tribal land use plans or policies	☐	☑	☐	☐	☐
23. Land/structures with history of contamination/hazardous materials even if remediated	☑	☐	☐	☐	☐
24. Other important environmental resources to address.	☑	☐	☐	☐	☐

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2. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands, wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (E.O. 11990); floodplains (E.O 11988); and other ecologically significant or critical areas.	☐	✓	☐
3. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]?	☐	✓	☐
4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?	☐	✓	☐
5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	☐	✓	☐
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9. Violate a federal law, or a state, local, or tribal law or requirement imposed for the protection of the environment?	☐	✓	☐
10. Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898)?	☐	✓	☐
11. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007)?	☐	✓	☐
12. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area, or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?	☐	✓	☐

Environmental Reviewers

The following individual(s) provided input in the completion of the environmental screening form. *List all reviewers including name, title, agency, field of expertise. Keep all environmental review records and data on this proposal in state compliance file for any future program review and/or audit. The ESF may be completed as part of a LWCF pre-award site inspection if conducted in time to contribute to the environmental review process for the proposal.*

1. Patrick Whitesell, Env. Specialist - DOWL;

2.

3.

The following individuals conducted a site inspection to verify field conditions.
List name of inspector(s), title, agency, and date(s) of inspection.

1.

2.

3.

State may require signature of
LWCF sub-recipient applicant here: _____Date_____

APPENDIX E

Section 106 Consultation

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THE STATE
of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
DIVISION OF PARKS AND OUTDOOR RECREATION
OFFICE OF HISTORY AND ARCHAEOLOGY
550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3565
Main: 907.269.8721
Fax: 907.269.8908

February 6, 2015

File No.: 3130-1R FHWA
3330-6 ANC-04057

RevComp Id: 2015-00092

SUBJECT: Seward Highway MP 105-107, Windy Corner Safety Improvements, Project No. NH-0A3-1(34)/56631

Laurie Mulcahy
Department of Transportation & Public Facilities
PO Box 196900
Anchorage, AK 99519-6900

Dear Ms. Mulcahy,

The Alaska State Historic Preservation Office (AK SHPO) received your letter (dated January 15, 2015) on January 15, 2015 and attached report titled *Determination of Eligibility for the Turnagain Arm District of the Alaska Railroad (ANC-04057).* Following our review of the documentation provided, our office concurs with your finding that the Turnagain Arm District of the Alaska Railroad (ANC-04057) is eligible for the National Register of Historic Places under *Criterion A*. Additionally, we reviewed the subject undertaking pursuant to Section 106 of the National Historic Preservation Act. Following our review, we concur with your finding that the Seward Highway MP 105-107, Windy Corner Safety Improvements project would result in a finding of no historic properties adversely affected; specifically the Turnagain Arm District of the Alaska Railroad (ANC-04057).

Please note that as stipulated in 36 CFR § 800.3, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our comment letter does not end the 30-day review period provided to other consulting parties. Should unidentified cultural resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR § 60.4) in consultation with our office.

Thank you for the opportunity to review and comment on the subject undertaking. Please contact Mark Rollins at 269-8722 or mark.rollins@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

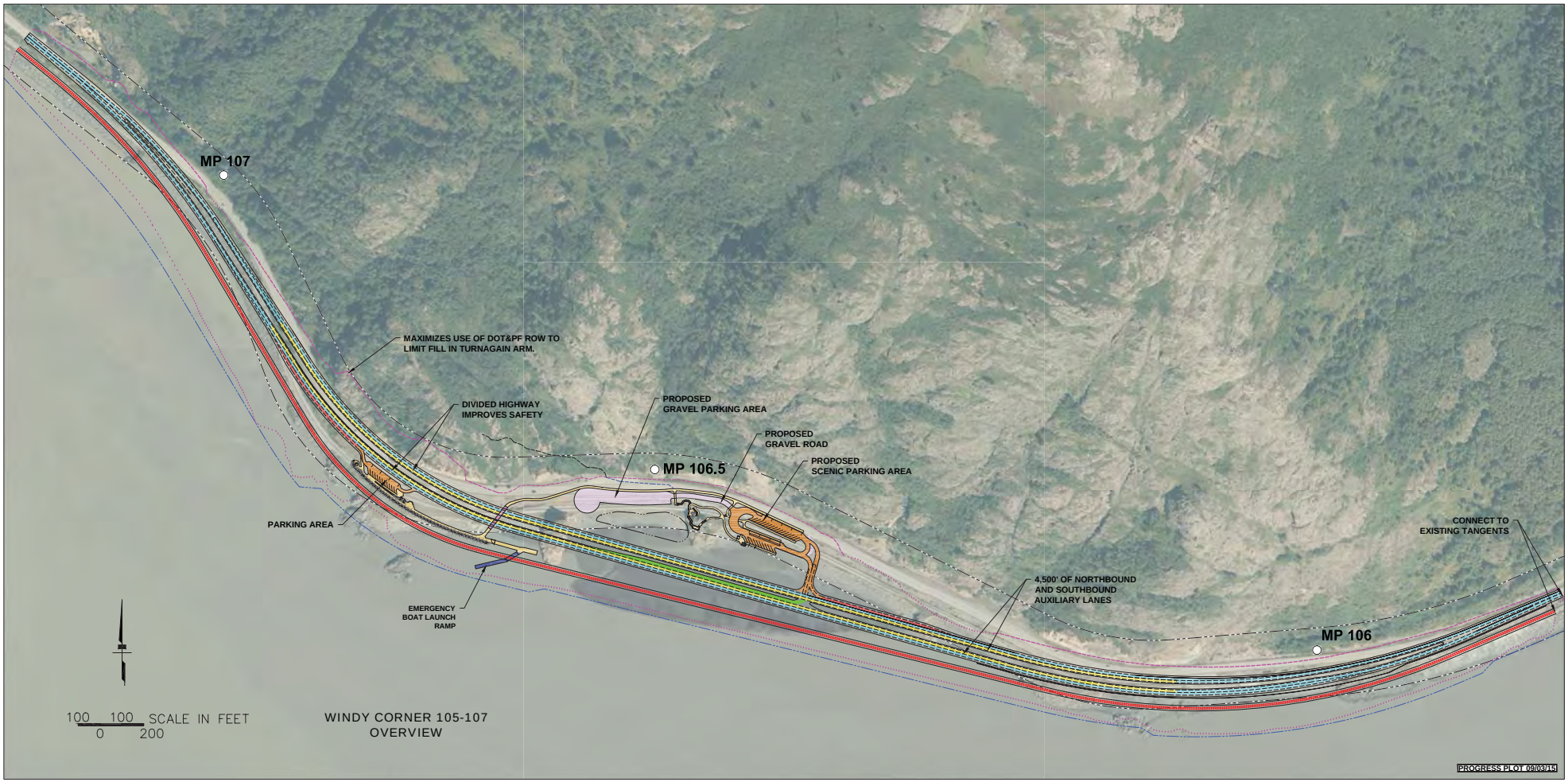
Judith E. Bittner
Deputy State Historic Preservation Officer

JEB:mwr

APPENDIX F

Windy Corner Improvements Overview

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- Proposed Parking Area
- Proposed Pathways (ADA Accessible)
- Proposed Right Turn Pocket
- Proposed Auxiliary Lane
- Proposed Through Lane
- Proposed Pedestrian Tunnel
- Proposed Emergency Access
- Existing Right-of-Way
- Proposed RR Top of Embankments
- Proposed Cut Limits
- Proposed Fill Limits
- Proposed Right-of-Way/Easement

Windy Corner
Highway Safety Improvements Overview

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

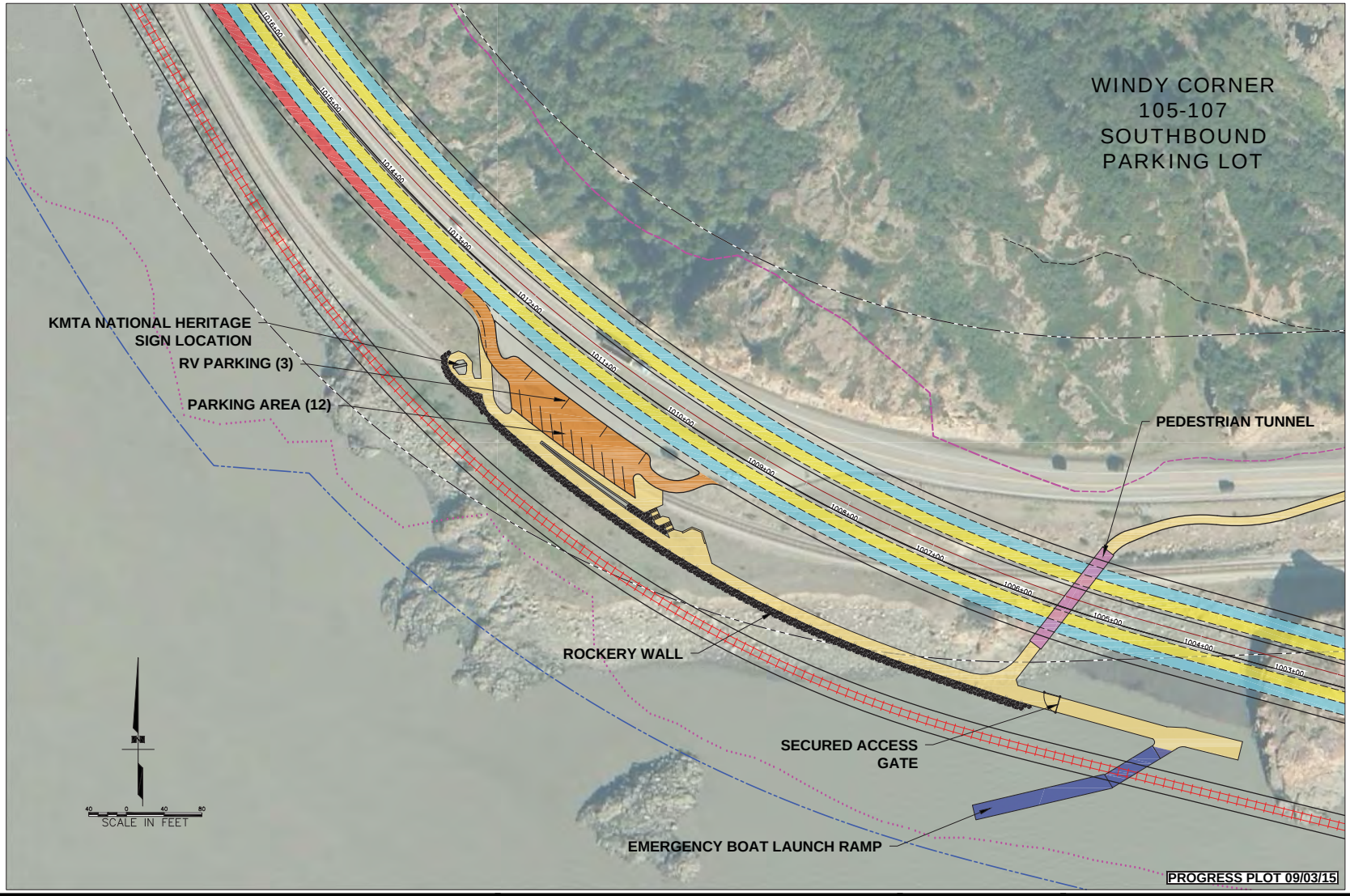
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE F-1

P:\Projects\D61278\GIS\2015 08 WC\F-2.ai



- Proposed Parking Area
- Proposed Pathways (ADA Accessible)
- Proposed Right Turn Pocket
- Proposed Auxiliary Lane
- Proposed Through Lane
- Proposed Pedestrian Tunnel
- Proposed Emergency Access
- Existing Right-of-Way
- Proposed RR Top of Embankments
- Proposed Cut Limits
- Proposed Fill Limits
- Proposed Right-of-Way/Easement

Windy Corner
Highway Safety Improvements
Southbound Scenic Parking Facility

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

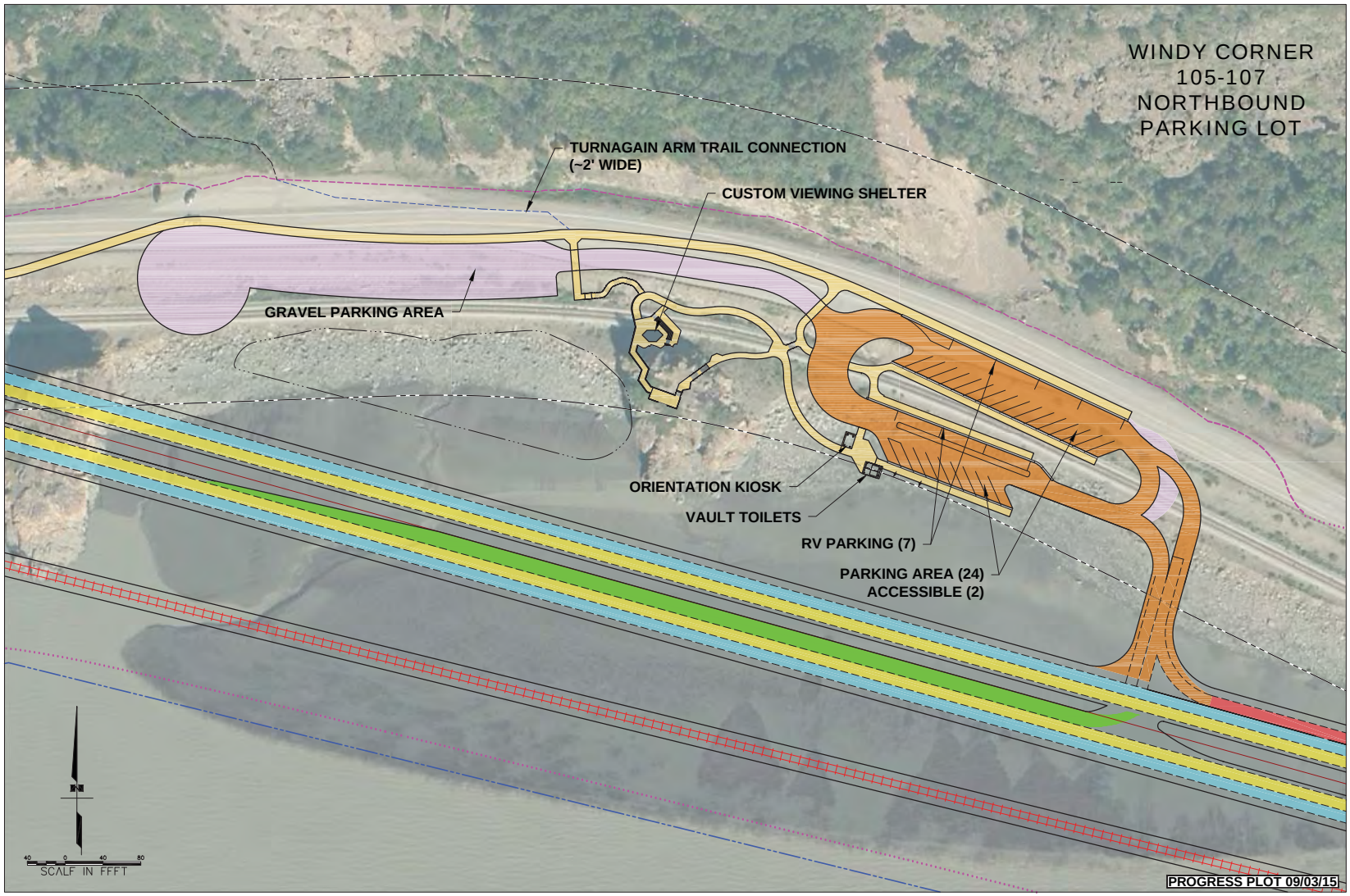
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE F-2

P:\Projects\D61278\GIS\2015 08 WC\F-2.ai



- Proposed Parking Area
- Proposed Pathways (ADA Accessible)
- Proposed Right Turn Pocket
- Proposed Auxiliary Lane
- Proposed Through Lane
- Proposed Pedestrian Tunnel
- Proposed Emergency Access
- Existing Right-of-Way
- Proposed RR Top of Embankments
- Proposed Cut Limits
- Proposed Fill Limits
- Proposed Right-of-Way/Easement

Windy Corner
Highway Safety Improvements
Northbound Scenic Parking Facility

T16N R1W Sec 36 E2NW4 NE4,
NW4SE4, NE4SW4
Seward Meridian, Alaska

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

DOT & PF Project No. 0A3-1(34)/56631
WINDY CORNER SEWARD HIGHWAY
MILEPOST 105-107

Municipality of Anchorage, Alaska

DATE: September 03, 2015 | FIGURE F-3

P:\Projects\D61278\GIS\2015 08 WC\F-2.ai

APPENDIX G

Biological Assessment

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Biological Assessment of the Cook Inlet Beluga Whale (*Delphinapterus leucas*) for the Seward Highway MP 105-107 Windy Corner Project, Municipality of Anchorage, Upper Cook Inlet, Alaska

Designated non-Federal action agency:
State of Alaska Department of Transportation and Public Facilities (DOT&PF)

Section 7 Biological Assessment
Seward Highway, MP105-107, Windy Corner
Project 0A3-1(34)/56631

Prepared for:
State of Alaska Department of
Transportation and Public Facilities,
Central Region

Prepared by:
LGL Alaska Research Associates, Inc.

In association with: DOWL

April 2015

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TABLE OF CONTENTS

I. Executive Summary 1
II. Project Description 2
A. Project Location 2
B. Definition of Action Area 7
C. Proposed Action 8
1. Overview of proposed actions 8
2. Project schedule 10
3. Detailed steps of proposed action 10
4. Best management practices and other conservation measures 21
III. Description of the Species and Their Habitat 22
A. Occurrence of Other Marine Mammals in the Project Action Area 26
B. Occurrence of Other Protected Species in the Waters of the Windy Corner Project Action Area. 27
C. General Description of Cook Inlet Habitat 27
D. General Description of Turnagain Arm Habitat 30
E. Beluga Distribution and Habitat Use in Cook Inlet 30
1. Inter-annual distribution patterns of belugas in Cook Inlet 31
2. Seasonal distribution patterns 35
3. CIBW feeding habitat 37
4. CIBW calving habitat 40
5. Other uses of habitat 40
F. CIBW Critical Habitat 41
G. PCE 2 and Overlap with Essential Fish Habitat (EFH) 45
H. CIBW Use of Turnagain Arm and the Windy Corner Project Action Area: Seasonal Patterns 46
1. Information from aerial surveys 46
2. Information from satellite tags 47
3. Information from land-based surveys for DOT&PF 47
4. Information from land-based surveys for the CIBW Photo-ID Project 50
5. Information from traditional ecological knowledge (TEK) 52
6. Information from LGL incidental observations 52
7. Information from NMML observational sighting database 53

8. Information from Anchorage Coastal Beluga Survey (ACBS) 54
9. CIBW use of Turnagain Arm and Windy Corner Project Action Area: tidal patterns .. 54
10. Information from land-based surveys for DOT&PF 54
11. Information from land-based surveys for the CIBW Photo-id Project 55
12. Information from visual monitoring during Greeneridge /DOT&PF acoustic ambient recording 55
13. Information from LGL incidental observations 56
14. Information from Anchorage Coastal Beluga Survey (ACBS) 57

I. Summary of Seasonal and Tidal Occurrence of CIBW in Turnagain Arm and the Windy Corner Project Action Area 57
1. Seasonal 57
2. Tidal 59
3. Use of habitat 59

IV. Environmental Baseline 60
A. Environmental Baseline of CIBW in the Windy Corner Project Action Area 60
1. CIBW abundance and population trend 60
2. Conservation status of CIBW 61
B. Human-Induced Factors 62
1. Subsistence harvest 62
2. Poaching and illegal harassment 63
3. Fishing 63
C. Pollution 63
1. Air pollution 63
2. Water pollution 64
3. Oil and gas 65
D. Coastal Development 68
E. Vessel Traffic 70
F. Tourism and Whale Watching 70
G. Noise 70
H. Scientific Research on CIBW in Turnagain Arm 71
I. Additional Environmental Baseline Considerations 72
1. Strandings 72
J. Cumulative Effects 73

K. Environmental Baseline of CIBW Critical Habitat in the Windy Corner Project Action Area. 74
V. Effect of the Action 75
A. Overview of Effects Section 75
B. Direct and Indirect Effects of the Windy Corner Project on CIBW 75
1. Direct and indirect effects of Windy Corner Project from habitat alteration 76
2. Direct and indirect effects of Windy Corner Project from pollution 79
3. Direct and indirect effects of Windy Corner Project from reduction in availability or quality of prey species 81
4. Direct and indirect effects of Windy Corner Project from noise 81
5. Noise generated by the Windy Corner Project 88
6. Direct and indirect effects of Windy Corner Project from illegal harassment 97
7. Direct and indirect effects of Windy Corner Project from injury or mortality 98
C. Direct and Indirect Effects of the Windy Corner Project on CIBW Critical Habitat 100
D. Cumulative Effects of the Windy Corner Project on CIBW and Their Critical Habitat .. 101
E. Summary of Effects of the Action 102
VI. Determination of Effect 104
A. Destruction or Adverse Modification Standard for Critical Habitat 105
VII. References and Personal Communications Cited 106

LIST OF TABLES

Table 1. Endangered Species and Critical Habitat, Status, and Effects Determination for the Windy Corner Project. 1
Table 2. Summary of Blasting Activities for the Windy Corner Project 19
Table 3. Marine mammals that could occur in the Windy Corner Project Action Area. 27
Table 4. Approximate timing of the presence (gray shading) and peak availability (black shading) of fish species entering fresh water drainages in Upper Cook Inlet (Moore et al. 2000a). 38
Table 5. List of anadromous rivers or streams in or within 5 mi (8 km) of the Windy Corner Project Action Area. 44
Table 6. Summary of incidental sightings reports to LGL's CIBW Photo-id Project of CIBW in Turnagain Arm, (McGuire et al. 2014, McGuire unpublished data). B and shading indicate CIBW sighting reported. 53
Table 7. Photoid Tidal windy. Seen < 3mi (4.8 km), of Windy Corner (McGuire et al. 2014, McGuire unpublished data) 55
Table 8. LGL incidentals Tidal windy. Seen < 3 mi (4.8 km) of Windy Corner in Windy Corner Project Action Area (McGuire et al. 2014, McGuire unpublished data). 56

Table 9. Summary of seasonal pattern of CIBW occurrence in Turnagain Arm. 58
Table 10. Summary of tidal pattern of CIBW occurrence in the Windy Corner Project Action Area. 59
Table 11. Baseline of primary constituent elements (PCEs) of beluga whale critical habitat in the Windy Corner Project Action Area. 74
Table 12. Mean in-air noise levels for various types of construction equipment (URS 2004). 89
Table 13. Possible effects to Cook Inlet beluga whales and their critical habitat resulting from the Windy Corner Projects, including location, project activity, project phase, and relative duration of effect. 103
Table 14. Windy Corner Project actions, potential effects, and determination of effects on CIBW and critical habitat. 104
Table 15. Determination of the effects of the Windy Corner Project on CIBW and its critical habitat. 105

LIST OF FIGURES

Figure 1: A map of Cook Inlet, Alaska, showing place names referred to in the text. 3
Figure 2: Location of the two material sites (named Material Site 1 and Material Site 6) that will be used for fill material for the Windy Corner Project. MP refers to milepost markers. 4
Figure 3: Location of the area that will be filled during the Windy Corner Project. A total of approximately 38 acres (15.4 hectares) will be filled. 4
Figure 4: Although the project is called *the Seward Highway Windy Corner Safety Improvement Project for Mile 105-107*, the inclusion of material sites extends the construction boundary for this project between milepost 104 and milepost 109 along the Seward Highway, and the inclusion of sound generated by blasting extends the Project Action Area from milepost 103.5 to milepost 109.5 and 4,921 ft (1,500 m) into Turnagain Arm. 5
Figure 5: Anadromous and non-anadromous rivers and streams within and in the vicinity of the Windy Corner Project Action Area. 6
Figure 6: Current and proposed DOT&PF projects along the Seward Highway Corridor. 8
Figure 7: Proposed design for the Windy Corner Project. The term “daylight limits” refers to the outermost edge of cut or fill for a road; it is the extent of excavation or fill. (http://www.dowlhkm.com/projects/windycorner/photos.html) 9
Figure 8: Design detail showing the rescue-craft ramp (lower left corner) for the Windy Corner Project. 10
Figure 9: Location of the four sites where rock blasting will occur during the Windy Corner Project. 11
Figure 10: Gorilla Rock blasing extent. Blasting and subsequent rock ‘ripping’ will remove approximately 33 feet of height from Gorilla Rock. 12
Figure 11: Windy Corner and Gorilla Rock, typical cross-sections indicating excavation extent. 14
Figure 12: Material Site 1 blasting and excavation extent. 16
Figure 13: Material Site 6 blasting and excavation extent. 18
Figure 14: Map of Cook Inlet, Alaska. 29

Figure 15: Areas occupied by beluga whales in Cook Inlet, Alaska, in June/July 1978–1979 (from Rugh et al. 2010). 32
Figure 16: Areas occupied by beluga whales in Cook Inlet, Alaska, in June/July 1993–1997 (from Rugh et al. 2010). 33
Figure 17: Areas occupied by beluga whales in Cook Inlet, Alaska, in June 1998–2008 (from Rugh et al. 2010). 34
Figures 18 (a–h): Monthly kernel density charts based on daily tag locations (a single best location was chosen for each day); the yellow area represents the highest density and 50% of the population, the green is 75% and the red is 95% of the population (Hobbs et al. 2005) 36
Figure 19: Map of Cook Inlet Beluga Critical Habitat (NMFS 2011). 43
Figure 20: Anadromous streams and rivers within 5 mi (8km) of the Windy Corner Project Action Area. 45
Figure 21: Sighting rates of beluga whale groups in Upper Turnagain Arm along the Seward Highway are compared (a) by month (mean values with standard errors) and (b) by day (from Markowitz et al. 2007). 48
Figure 22: The number of beluga whales observed in Upper Turnagain Arm are compared (a) by month (mean values with standard errors) and (b) by day (from Markowitz et al. 2007). 49
Figure 23: Route and beluga whale group(s) encountered and general survey route of all 2011 land-based surveys along Turnagain Arm, Upper Cook Inlet, Alaska (McGuire et al. 2014). 50
Figure 24: Route and beluga whale group(s) encountered and general survey route of all 2012 land-based surveys along Turnagain Arm, Upper Cook Inlet, Alaska (McGuire et al. 2014). 51
Figure 25: Route and beluga whale group(s) encountered and general survey route of all 2013 land-based surveys along Turnagain Arm, Upper Cook Inlet, Alaska (from McGuire et al. 2014). 52
Figure 26: Mother and calf CIBW seen at Windy Corner on September 21, 2014 during the falling tide. (Photo credit: Amber Stephens, LGL Alaska Research Associates, Inc.) 57
Figure 27: Abundance estimates for CIBW 1994-2012. The vertical bars represent 95% confidence intervals for each estimate. The red line is the trend for the years 1999–2012 (Hobbs et al. 2012). 61
Figure 28: Map of Cook Inlet oil and gas activities in 2014. 67
Figure 29: General geographic distribution of current or proposed human activities in Cook Inlet. The map was created in 2011 but the information still generally applies, although proposed Seward Highway projects run the length of Turnagain Arm. 69
Figure 30: Location of the area that will be filled during the Windy Corner Project. A total of 38 acres (15.4 hectares) will be filled. 76
Figure 31: Gorilla Rock (center) and associated mudflats during low tide. Note waterline from a previous high tide (image 2014 Google earth). 77
Figure 32: Gorilla Rock and adjacent deep-water cove, southeast-facing views. 78
Figure 33: Explosion at Eagle Bay, Knik Arm during military exercises on August 2010. (photo T.McGuire, NMFS MMPA/ESA permit #14210) 84
Figure 34: Summary of maximum harassment zones per 10 kg blast of ANFO. Note there is no 180-dB contour on the farthest east site (near milepost 104; HLS 2014). 91

Figure 35: The inclusion of sound generated by blasting extends the Windy Corner Project Action Area from milepost 103.5 to milepost 109.5 and 4921 ft (1,500 m) into Turnagain Arm. 92
Figure 36: Beluga whales around earth-moving activity at the Port of Anchorage (photo: T.McGuire, NMFS MMPA/ESA permit #18016). 99
Figure 37: Current and proposed DOT&PF projects along the Seward Highway Corridor..... 102

APPENDICES

Appendix 1. AMBIENT UNDERWATER SOUND LEVELS MEASURED AT WINDY CORNER, TURNAGAIN ARM, ALASKA (Greeneridge Sciences, Inc.)..... 123
Appendix 2. ACOUSTIC MODELING SEWARD HIGHWAY, MP105-107, WINDY CORNER (Heat, Light, and Sound Research)..... 124
Appendix 3. MONITORING AND MITIGATION PLAN..... 125

ACRONYMS AND ABBREVIATIONS

<	less than
>	greater than
≤	less than or equal to
≥	greater than or equal to
±	plus or minus
~	approximately
°	degree(s)
°C	degrees Celsius
°F	degrees Fahrenheit
µP	micropascals
AAC	Alaska Administrative Code
ACBS	Anchorage Coastal Beluga Survey
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ANFO	ammonia nitrate and fuel oil
APDES	Alaska Pollutant Discharge Elimination System
ARRC	Alaska Railroad Corporation
BA	Biological Assessment
BMPs	Best Management Practice(s)
CIBW	Cook Inlet beluga whales
cm	centimeter(s)
CO	carbon monoxide
cu m	cubic meter(s)
c.y	cubic yard(s)
dB	decibel(s)
dB re 1 µPa	decibel referenced to one micropascal
DEC	Department of Environmental Conservation
DOT&PF	Alaska Department of Transportation and Public Facilities
DPS	distinct population segment
EFH	essential fish habitat
EPA	Environmental Protection Agency

ACRONYMS AND ABBREVIATIONS (CONTINUED)

EPOC	emerging pollutants of concern
ESA	Endangered Species Act
ESU	evolutionary significant units
FAR	Friends of the Anchorage Coastal Wildlife Refuge
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FHWG	Fisheries Hydroacoustic Working Group
ft	foot/feet
ft/sec	feet per second
GIS	Geographic Information Systems
HLS	Heat, Light, and Sound Research
Hz	Hertz
in	inch(es)
kg	kilogram(s)
kHz	kilohertz
km	kilometer(s)
km^2	square kilometer(s)
km/hr	kilometer(s) per hour
KPB	Kenai Peninsula Borough
lb	pound(s)
LNG	liquid natural gas
m	meter(s)
m/sec	meters per second
mi	mile(s)
mi^2	square mile(s)
mi/hr	mile(s) per hour
MHW	mean high water
MHHW	mean higher high water
MLLW	mean lower low water
MMPA	Marine Mammal Protection Act
MOA	Municipality of Anchorage

ACRONYMS AND ABBREVIATIONS (CONTINUED)

MP	milepost
MS	materials site(s)
MSL	mean sea level
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NMML	National Marine Mammal Laboratory
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCE	primary constituent element
POA	Port of Anchorage
PSOs	Protected Species Observers
PTS	permanent threshold shift
rms	root mean squared
SD	Standard deviation
SEL	sound energy level
SLE	St. Lawrence Estuary
SPL	sound pressure level
SWPPP	Storm Water Pollution and Prevention Program
TAG	Technical Advisory Group
TEK	Tradition Ecological Knowledge
TS	threshold shift
TTS	temporary threshold shift
USCG	United States Coast Guard
USFWS	U.S. Fish and Wildlife Service

SPECIES NAMES

Common Name	Scientific Name
Arctic grayling	*Thymallus arcticus*
Beluga whale	*Delphinapterus leucas*
Bottlenose dolphin	*Tursiops truncatus*
Brown trout	*Salmo trutta*
Burbot	*Lota lota*
Chinook salmon	*Oncorhynchus tshawytscha*
Chum salmon	*Oncorhynchus keta*
Coho salmon	*Oncorhynchus kisutch*
Dolly Varden	*Salvelinus malma*
Gray whale	*Eschrichtius robustus*
Harbor porpoise	*Phocoena phocoena*
Harbor seal	*Phoca vitulina*
Humpback whale	*Megaptera novaeangliae*
Killer whale	*Orcinus orca*
Lake chub	*Couesius plumbeus*
Longnose sucker	*Catostomus catostomus*
North Atlantic right whale	*Eubalaena glacialis*
Northern pike	*Esox lucius*
Pacific cod	*Gadus macrocephalus*
Pacific eulachon	*Thaleichthys pacificus*
Pacific tomcod	*Microgadus proximus*
Pink salmon	*Oncorhynchus gorbuscha*
Pink snapper	*Pagrus auratus*
Polar bear	*Ursus maritimus*
Saffron cod	*Eleginus gracilis*
Sockeye salmon	*Oncorhynchus nerka*
Starry flounder	*Platichthys stellatus*
Steelhead (Rainbow) trout	*Oncorhynchus mykiss*
Stejners beaked whale	*Mesoplodon stejnegeri*
Steller sea lion	*Eumetopias jubatus*

SPECIES NAMES (CONTINUED)

Common Name	Scientific Name
Tanner crab	*Chionoecetes bairdi*
Walleye pollock	*Theragra chalcogramma*
Whitefish	*Coregoninae spp.*
Yellowfin sole	*Limanda aspera*

I. EXECUTIVE SUMMARY

The Seward Highway Windy Corner Safety Improvement Project for Milepost 105-107 (hereafter referred to as the Windy Corner Project) is part of the Alaska Department of Transportation and Public Facilities' (DOT&PF) efforts to address traffic safety concerns on the Seward Highway Corridor. The Windy Corner Project will realign the highway and the railroad along a two-mile segment of the Seward Highway in the vicinity of Windy Corner, along Cook Inlet's Turnagain Arm. This segment is proposed to be designed as a two-lane divided highway to meet current design standards.

As the lead agency for the project, DOT&PF has conducted design development with input from the public as well as from local, state, and federal agencies, including the Alaska Railroad Corporation (ARRC), the Alaska Departments of Natural Resources and Fish and Game (ADF&G), Chugach State Park, National Marine Fisheries Service (NMFS), the U.S. Army Corps of Engineers, the Anchorage Fire Department, and others. The proposed Windy Corner Project is being completed using a combination of state and federal funds and is being developed in accordance with Federal Highway Administration (FHWA) guidelines.

For projects involving a federal nexus, the Endangered Species Act (ESA) requires a consultation between the federal agency charged with protecting the species and the federal agency involved in the project to ensure that any federally authorized action is not likely to jeopardize the continued existence of any ESA-listed species or result in the destruction or adverse modification of its critical habitat. DOT&PF has been designated by FHWA to serve as the non-federal representative for the Windy Corner Project. After DOT&PF consulted with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service on threatened or endangered species that potentially could be affected by the proposed project, it was determined that the only federally listed species that is documented to occur in the proposed Windy Corner Project area is the Cook Inlet distinct population segment (DPS) of beluga whales (*Delphinapterus leucas*). Federally designated critical habitat for Cook Inlet beluga whales (CIBW) is also present in the project area. Because beluga whales fall under the jurisdiction of NMFS, the ESA consultation for Windy Corner is between NMFS and DOT&PF.

As part of the consultation, a Biological Assessment (BA) is required. This BA summarizes DOT&PF's proposed actions for the Windy Corner Project, examines the potential effects on CIBW and their critical habitat, and proposes monitoring and mitigation measures to reduce potential impacts from the project. DOT&PF has determined that the proposed project ***may affect, but is not likely to adversely affect*** CIBW or their critical habitat (Table 1).

Table 1. Endangered Species and Critical Habitat, Status, and Effects Determination for the Windy Corner Project.

SPECIES/DISTINCT POPULATION SEGMENT (DPS)/CRITICAL HABITAT	LISTING STATUS	EFFECTS DETERMINATION
Cook Inlet beluga whale (*Delphinapterus leucas*)	Endangered	May affect, not likely to adversely affect
Cook Inlet beluga whale critical habitat	Designated	May affect, not likely to adversely affect

II. PROJECT DESCRIPTION

A. Project Location

The Seward Highway Windy Corner Safety Improvement Project for Mile 105-107 (hereafter referred to as the Windy Corner Project) is located along the Seward Highway, adjacent to the north shore of Turnagain Arm in Upper Cook Inlet, Alaska (Figure 1). Windy Corner Project activities (i.e., highway realignment and railroad relocation) will occur at and adjacent to Windy Corner, located between Anchorage to the northwest and Girdwood to the southeast. Windy Corner itself is located at 60.984227 N, -149.608410 W. Although the project is called the Seward Highway Windy Corner Safety Improvement Project for Mile 105-107[1], the inclusion of material sites for the project extends the construction area boundaries for this project between milepost 104 and milepost 109 along the Seward Highway (Figure 2), and fill activities will extend it 450 feet (ft) (137 meters (m)) into Turnagain Arm (Figure 3). When the effects of sound generated by this project are considered (see section below), the Windy Corner Project Action Area extends between milepost 103.5 and milepost 109.5 along the Seward Highway and 4,921 ft (1,500 m) into Turnagain Arm (Figure 4).

[1] Milepost markers refer to miles along the Seward Highway, with the zero milepost marker located in Seward Alaska.

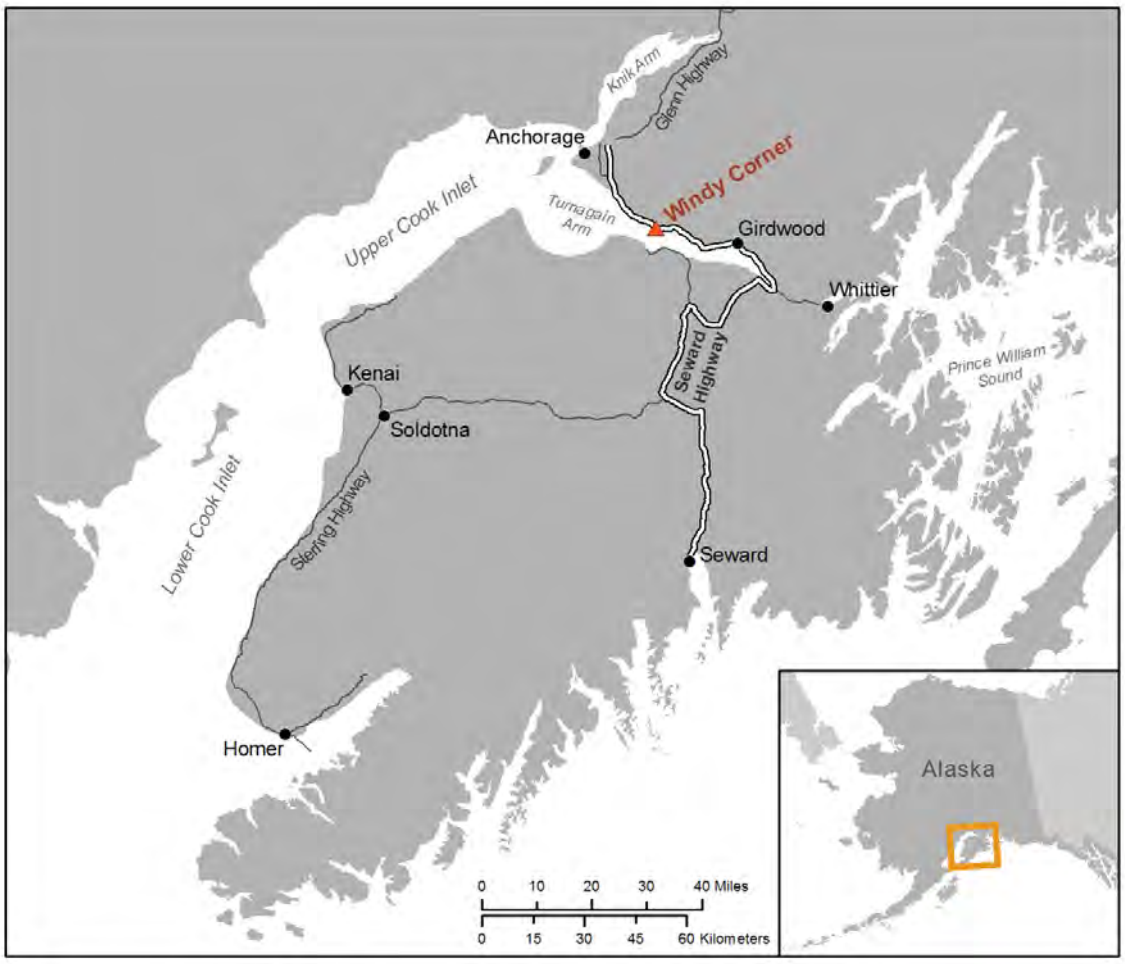


Figure 1: A map of Cook Inlet, Alaska, showing place names referred to in the text.



Figure 2: Location of the two material sites (named Material Site 1 and Material Site 6) that will be used for fill material for the Windy Corner Project. MP refers to milepost markers.

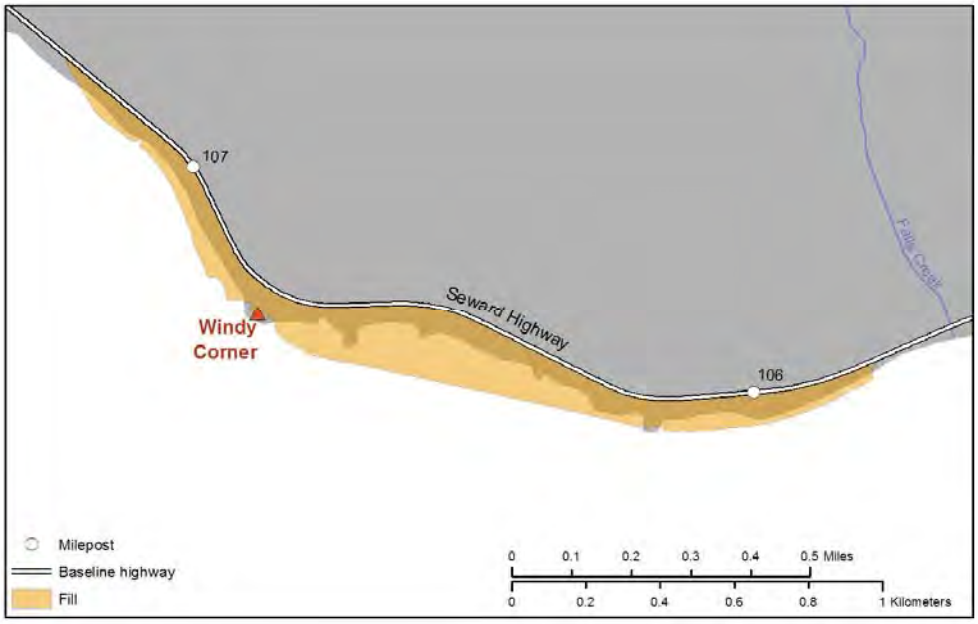


Figure 3: Location of the area that will be filled during the Windy Corner Project. A total of approximately 38 acres (15.4 hectares) will be filled.

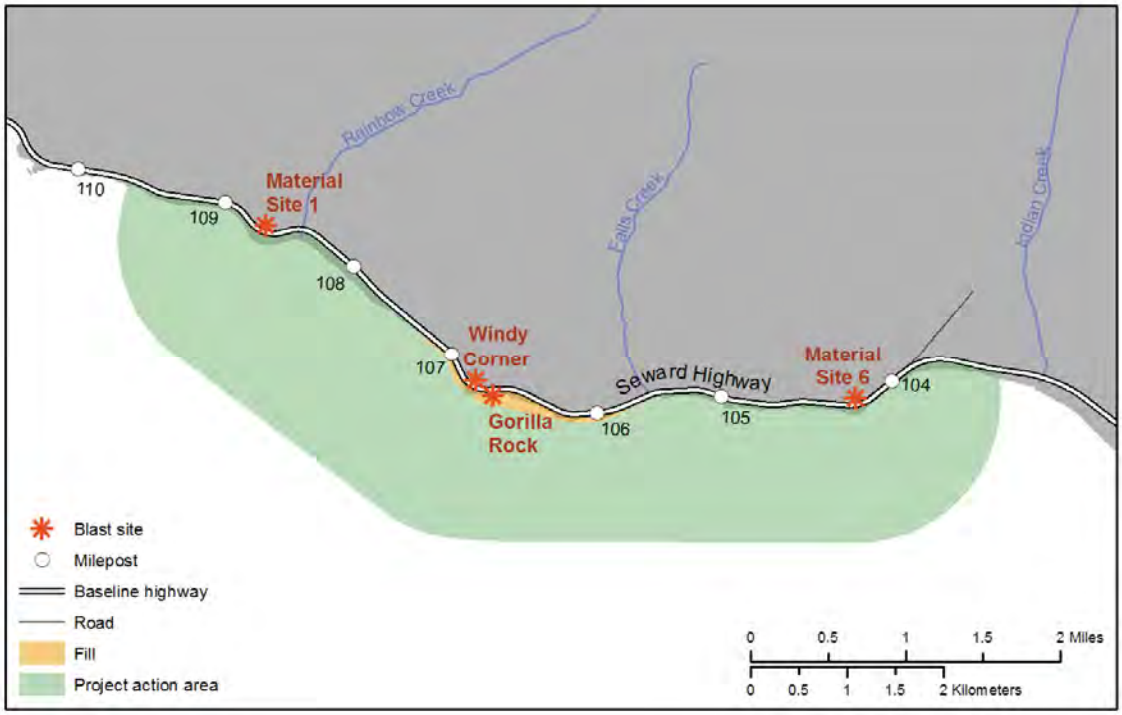


Figure 4: Although the project is called *the Seward Highway Windy Corner Safety Improvement Project for Mile 105-107,* the inclusion of material sites extends the construction boundary for this project between milepost 104 and milepost 109 along the Seward Highway, and the inclusion of sound generated by blasting extends the Project Action Area from milepost 103.5 to milepost 109.5 and 4,921 ft (1,500 m) into Turnagain Arm.

The Windy Corner Project is located within the borough of the Municipality of Anchorage[2] and adjacent to Chugach State Park, along Cook Inlet's Turnagain Arm. Cook Inlet is a tidal estuary approximately 220 mi (350 km) in length located in south central Alaska. Turnagain Arm is about 30 mi (48 km) long and approximately 4 mi (6 km) in width. It is quite shallow (max depth of 66 ft [20 m], 7 ft [2 m] in some areas; NOAA bathymetric database), and parts of it become exposed during low tide. The aquatic habitat of Turnagain Arm is described in more detail in Section III of this document. The USFWS National Wetlands Inventory website classifies Turnagain Arm marine waters as estuarine (http://www.fws.gov/wetlands/).

There are no major rivers or river mouths in the Windy Corner Project Action Area (milepost 103.5 to 109.5; Figure 5), nor are there any anadromous or resident fish streams (ADFG 2013). Only two streams, Falls Creek (milepost 105.6) and Rainbow Creek (milepost 108.5), are located within the Windy Corner Project Action Area and both are non-fish bearing streams with steep gradients. The nearest anadromous fish streams to the south/east are located at Bird Creek (milepost 102) and Indian Creek (milepost 103), both outside of the Windy Corner Project Action Area. The nearest anadromous fish stream to the north/west is at Rabbit Creek (milepost 117).

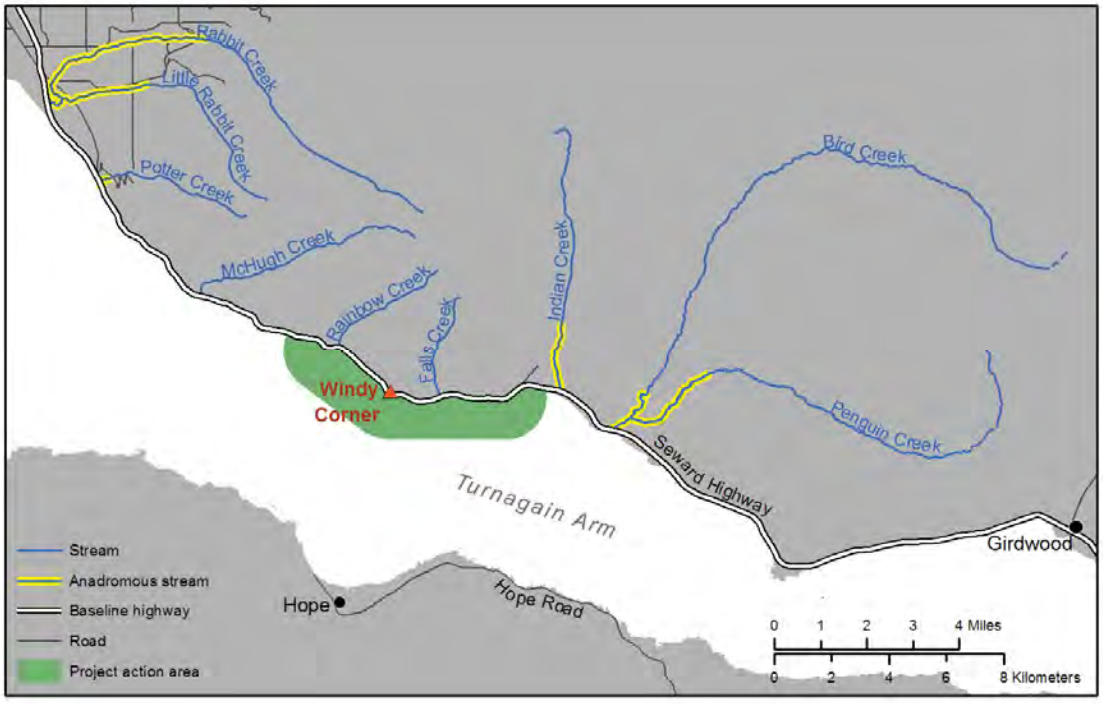


Figure 5: Anadromous and non-anadromous rivers and streams within and in the vicinity of the Windy Corner Project Action Area.

[2] Alaska has boroughs instead of counties.

The waters off Windy Corner are classified as both "waters of the U.S." and "Alaska state waters". With respect to Federal jurisdiction, Cook Inlet, including Turnagain Arm, contains "waters of the United States" under the Clean Water Act because these waters are "subject to the ebb and flow of the tide" (40 CFR 230.3(s)). In addition, the U.S. Army Corps of Engineers has federal authority over these waters via their wetland/waters permitting authority. All of Cook Inlet is classified by NMFS as essential fish habitat (EFH) and is a migratory corridor for all five Pacific salmon species: pink, chum, sockeye, coho, and Chinook.

With respect to state jurisdiction, the State of Alaska is also responsible for fisheries management within and near the project area. Within ADF&G, commercial fisheries, personal use, subsistence, and sport fisheries are managed by separate divisions, and, as a result, have different management districts and regulatory requirements. Turnagain Arm's commercial and subsistence fisheries fall under ADF&G's Turnagain Arm subdistrict in the Northern Management District for Cook Inlet, while sports fisheries and personal-use fisheries in Turnagain Arm fall under the Anchorage Management Area.

B. Definition of Action Area

The inclusion of material sites (Figure 2) and the fill area (Figure 3) for the project extends the construction boundary for this project between milepost 104 and milepost 109 along the Seward Highway. Fill activities extend the construction boundary out to 450 ft (137 m) into Turnagain Arm.

The action area for the Windy Corner Project includes the construction boundary (defined above) plus the in-water area that will become ensonified at the 160 dB referenced to one micropascal (re 1 μPa) root mean square (RMS) SPL and 180 dB re 1 μPa RMS SPL levels by noise generated by blasting activities. More information on the estimated sound level thresholds for the Windy Corner Project is found in section V and Appendix 2. Inclusion of this ensonified area enlarges the Windy Corner Project Action Area to include the area between milepost 103.5 and milepost109.5 along the Seward Highway and 4,921 ft (1500 m) into Turnagain Arm (Figure 4).

CIBW and their critical habitat occur within the proposed Windy Corner Project Action Area (the species and habitat are discussed in more detail in Section III of this document). Potential impacts occurring in the action area during the Windy Corner Project and relevant for this Biological Assessment (BA) include:

- Habitat alteration
- Pollution
- Reduction in availability or quality of prey species
- Noise
- Illegal harassment
- Injury or mortality

Section V of this document discusses these potential impacts in detail.

C. Proposed Action

1. Overview of proposed actions

The primary objective of the Windy Corner Project is to continue the Alaska Department of Transportation and Public Facilities (DOT&PF) efforts to address traffic safety concerns on the Seward Highway Corridor. DOT&PF has proposed multiple projects along the Seward Highway that are being designed and permitted as separate projects (Figure 6). The Windy Corner Project will realign the highway and the railroad along a two-mile segment of the Seward Highway in the vicinity of Windy Corner. The segment is proposed to be designed as a two-lane divided highway to meet current design standards. The railroad tracks at Windy Corner will also be realigned and extended into filled areas of Turnagain Arm in order to provide space for the proposed highway realignment.

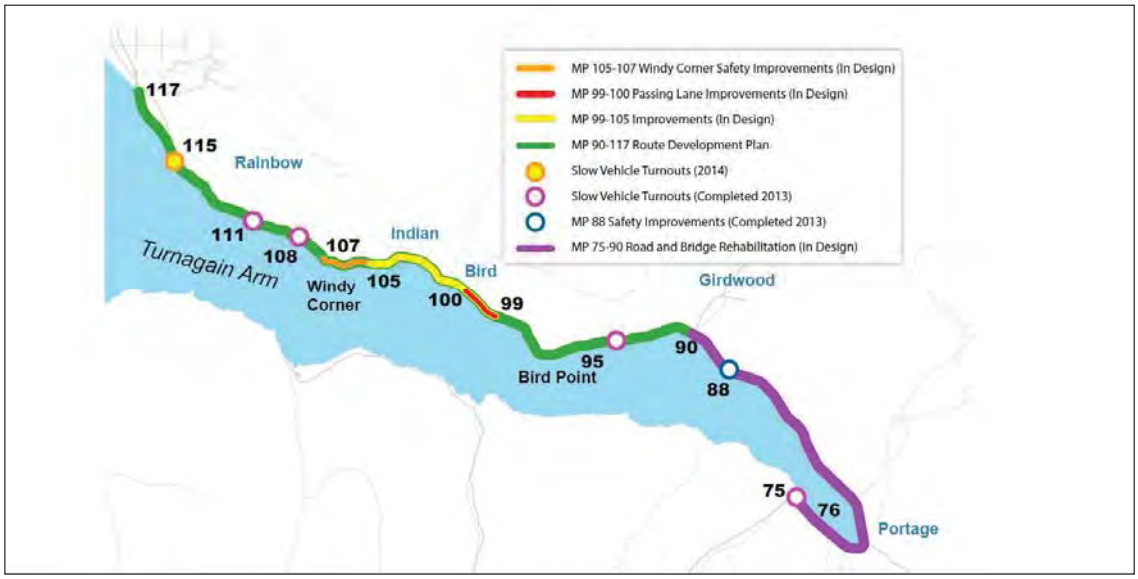


Figure 6: Current and proposed DOT&PF projects along the Seward Highway Corridor.

As a secondary objective, the new alignment at Windy Corner creates space for new and expanded roadside recreational facilities and wildlife viewing areas (including parking and walkways) with acceleration and deceleration lanes for turning traffic (Figure 7). The realignment and relocation of the highway and railroad corridors will involve the relocation and reconstructions of adjacent utilities. Water access for emergency responders and search-and-rescue teams will also be created as a result of project activities (Figure 8).

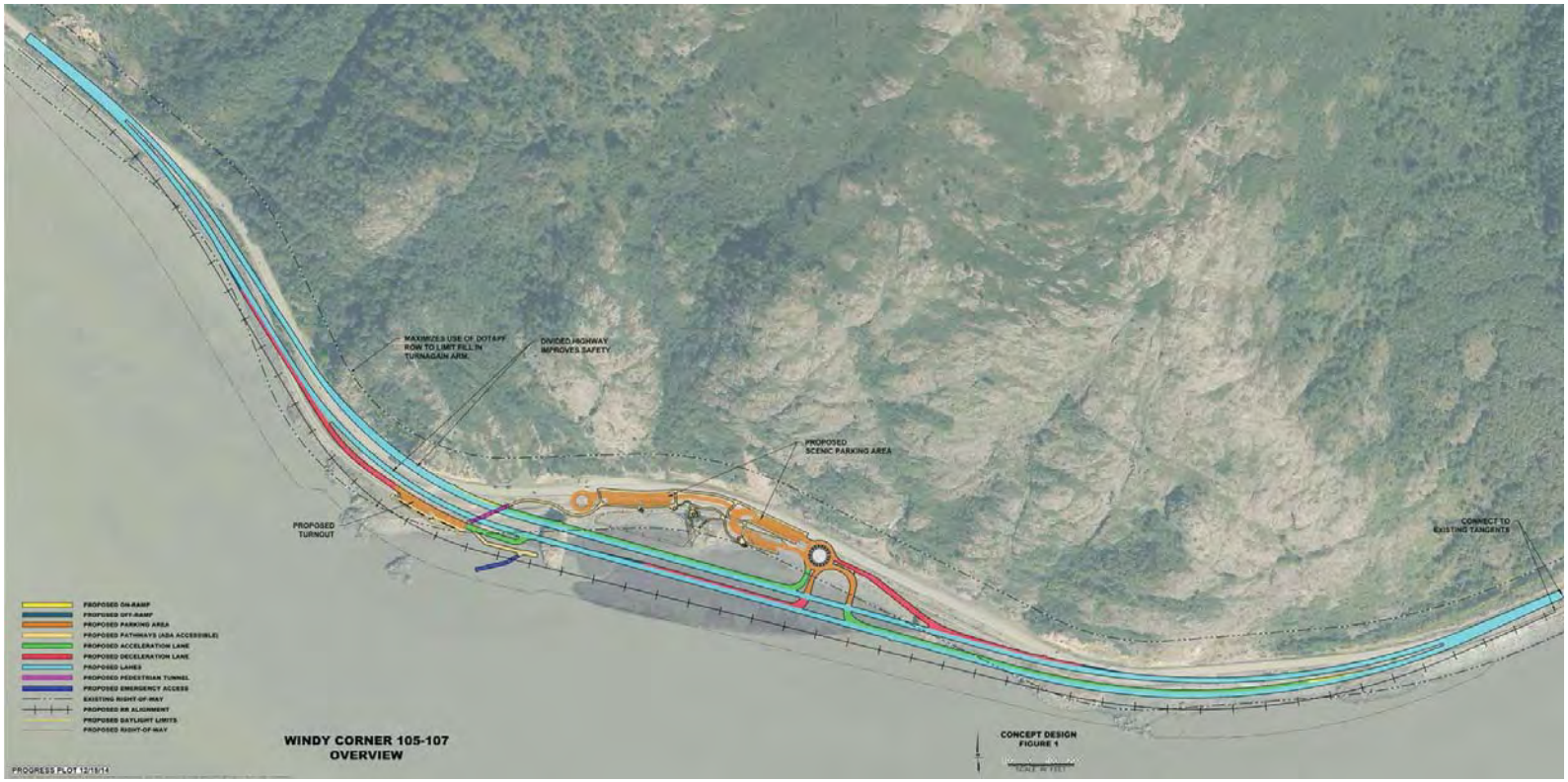


Figure 7: Proposed design for the Windy Corner Project. The term "daylight limits" refers to the outermost edge of cut or fill for a road; it is the extent of excavation or fill. (http://www.dowlhkm.com/projects/windycorner/photos.html)

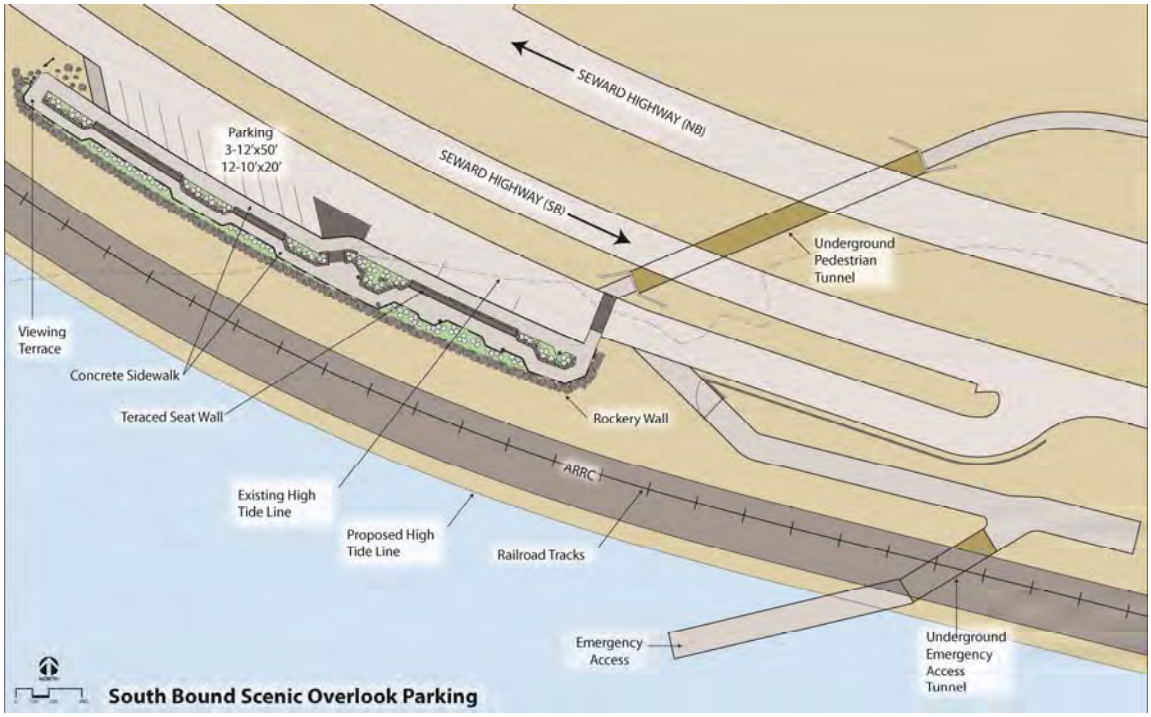


Figure 8: Design detail showing the rescue-craft ramp (lower left corner) for the Windy Corner Project.

2. Project schedule

Project construction is planned to begin in 2016, during the ice-free season, which is typically April through October in Cook Inlet. In-water work would not occur April–early June or August–October in order to minimize potential project impacts to beluga whales and migrating fish (details in Section V and Appendix 3).

3. Detailed steps of proposed action

Activities for the Windy Corner Project can be divided into road realignment and railroad realignment activities, with the following in-water components:

a) Blasting
b) Filling
c) Rescue-craft ramp construction

General blasting plan for Windy Corner Project

Rock blasting will occur as part of the Windy Corner Project in order to create space for the road and railroad realignment; this blasting will occur at Windy Corner proper and at Gorilla Rock (Figure 9). In addition, rock blasting will occur at either Material Sites (MS) 1 or 6 in order to create fill material for the Windy Corner Project. As currently envisioned, only one material site (MS1) will be developed. MS6 will be permitted, but only developed if needed following

extraction from MS1. Material Sites will first be 'prepared and developed' to begin producing fill material. This involves removing vegetation, soils, and other unusable layers sitting on top of the appropriate parent rock that will be used as fill material.

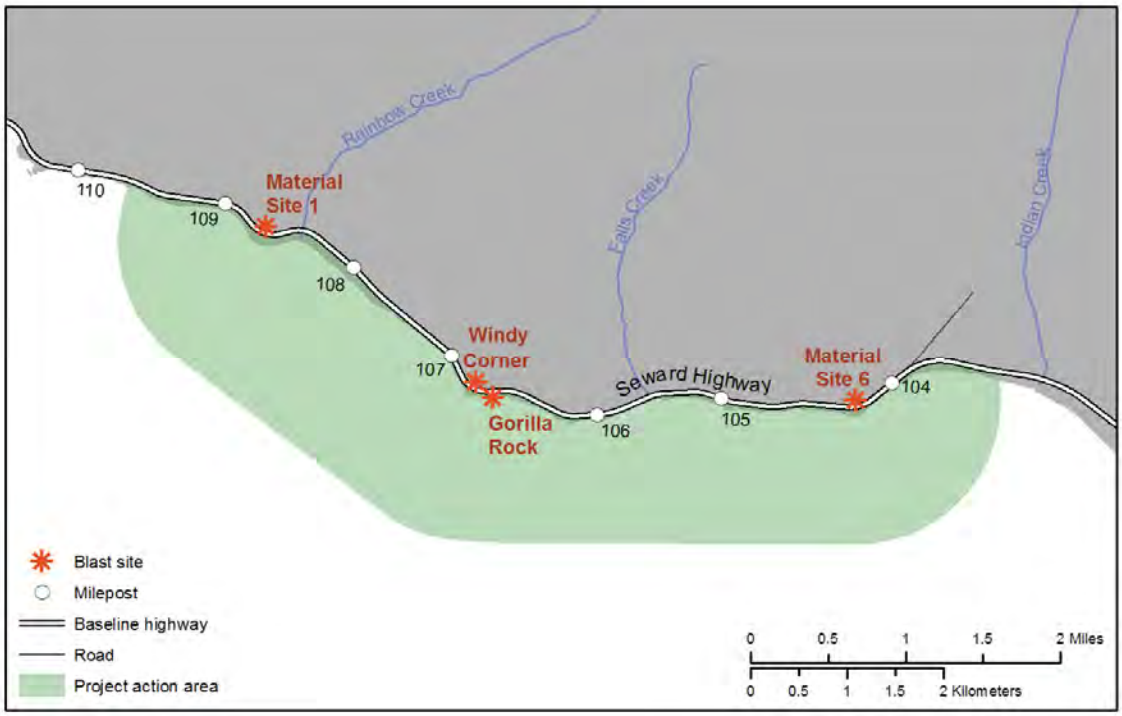


Figure 9: Location of the four sites where rock blasting will occur during the Windy Corner Project.

Each blast will consist of a series of small explosions that occur within a few milliseconds of each other. The duration of each blast will be about 2–3 seconds. The level of sound created by each blast is dependent on the amount of charge per delay, as well as the depth of the charges in the parent rock, and the distance from the face or edge of the rock. To the extent possible, blasts will be limited in terms of the maximum amount of explosives per delay and one blast per day to minimize the sound produced; the exact amount of explosives to be used per blast will be determined by the Contractor during construction.

The most likely form of explosives that will be used is ammonia nitrate and fuel oil (ANFO). For the holes with water, emulsions, prill (pellets formed from melted liquid), or similar blasting agents may be used. Only the amount of explosives necessary to break the rock will be used in each hole. The remaining portion of each hole will be backfilled with cuttings from the drilling operation. In this context, the 'drilling operation' is the process by which the blasting hole is created. A large drill rig (land-based) is used to bore a large hole down into the rock. This drilling process creates a pile of 'overburden', material generated by drilling the hole. This material will be used to backfill the hole after the necessary amount of explosives are placed, to

ensure that the hole is capped off. This also ensures that as much of the blast energy as possible is directed into the rock around it, rather than just up out of the hole.

Prior to each blast, there will be 5-minute and 1-minute warning signals. The warning signal is typically a commercially available air horn (klaxon), with a sound level ranging from 110 to 125 dB at 'point blank' range (approximately 3 ft [1 m]). After each blast, the Contractor's blaster shall observe the area of the blast for five minutes to guard against injury or damage due to rockfall. The blaster shall then inspect the blast area to determine that all explosive charges were detonated. After this inspection, the blaster will sound an audible horn as an all-clear signal to alert all personnel that the area is safe for entry. Blasting must occur during daylight hours to permit the blast site to be inspected after the blast to verify that the area is safe. No blasting will occur at or below the intertidal zone. Because the rock generated from the blasts can only be placed in fill sites when the mudflats are free of ice, and due to the lack of material staging space in the project area, blasting can only occur during the ice-free season. Work in the intertidal will occur when the tide is low and the area is de-watered.

Site-specific blasting plans

Blasting plan for Gorilla Rock (Figure 10)

The portion of Gorilla Rock above approximately +30 ft (9 m) mean sea level (MSL) will be blasted to accommodate the roadway realignment. The elevation of the top of Gorilla Rock is approximately +70 to +80 ft (21–24 m; MSL). The elevation of the mudflats south of Gorilla Rock is approximately +2 ft (0.6 m; MSL). The elevation of high tide is approximately +17.5 ft (5 m; MSL). At low tide the mud flats at elevation +2 ft (0.6 m; MSL) are exposed. Total rock excavation at Gorilla Rock is approximately 4,000 cu yd (3,058 cu m). It will take approximately 5 to 10 blasts to remove the portion of Gorilla Rock that will be needed to accommodate the new road. This assumes that the rock cannot be removed mechanically; any potential for mechanical removal will reduce the amount of blasting used and required.

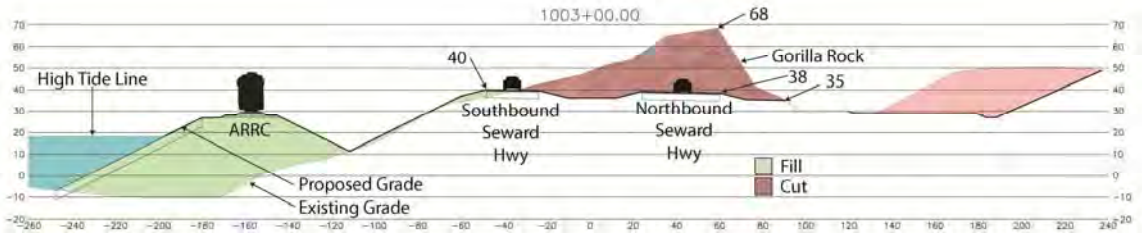


Figure 10: Gorilla Rock blasing extent. Blasting and subsequent rock 'ripping' will remove approximately 33 feet of height from Gorilla Rock.

The following steps will be taken to blast and excavate Gorilla Rock:

a) Material (i.e., rock fill, varying grain size) will be hauled from MS 1 or the excavation at Windy Corner to construct access to Gorilla Rock. Rock embankment will be placed above the water line during low tide when the mudflats are exposed.
b) Once access to Gorilla Rock has been established, dozers will rip away as much rock as possible. This reduces blast activities, and also allows for continuing work (blasting operations require work stoppages during blasting). However, a majority of the rock appears to be too hard to rip and will require blasting.
c) A track-mounted drill rig will be used to drill 3-inch (in) to 6-in diameter holes in the rock. Due to the rugged terrain and difficult access, the hole spacing will vary between 8 and 12 ft. Drilling will occur during low tide.
d) After the blaster has inspected the blast area and deemed it safe, the Contractor will then use dozers and large backhoes to remove and place the blasted rock into the roadway template.
e) Steps B and D are repeated, as necessary.

Blasting plan for sliver cut on Windy Corner (Figure 11)

The elevation of the top of the existing 110 to 120 ft (34–37 m) high cut at Windy Corner is approximately +150 to +160 ft (46–49 m; MSL). The elevation of the top of the proposed cut is +170 to +180 ft (52–55 m; MSL). Total rock excavation at Windy Corner Rock is approximately 141,000 c.y (110,860 cu m). Due to the nature of the cut, each blast is likely to remove less material than the overall average for the project. It will take approximately 20 to 35 blasts to remove the portion of Windy Corner that will be needed to accommodate the new road.

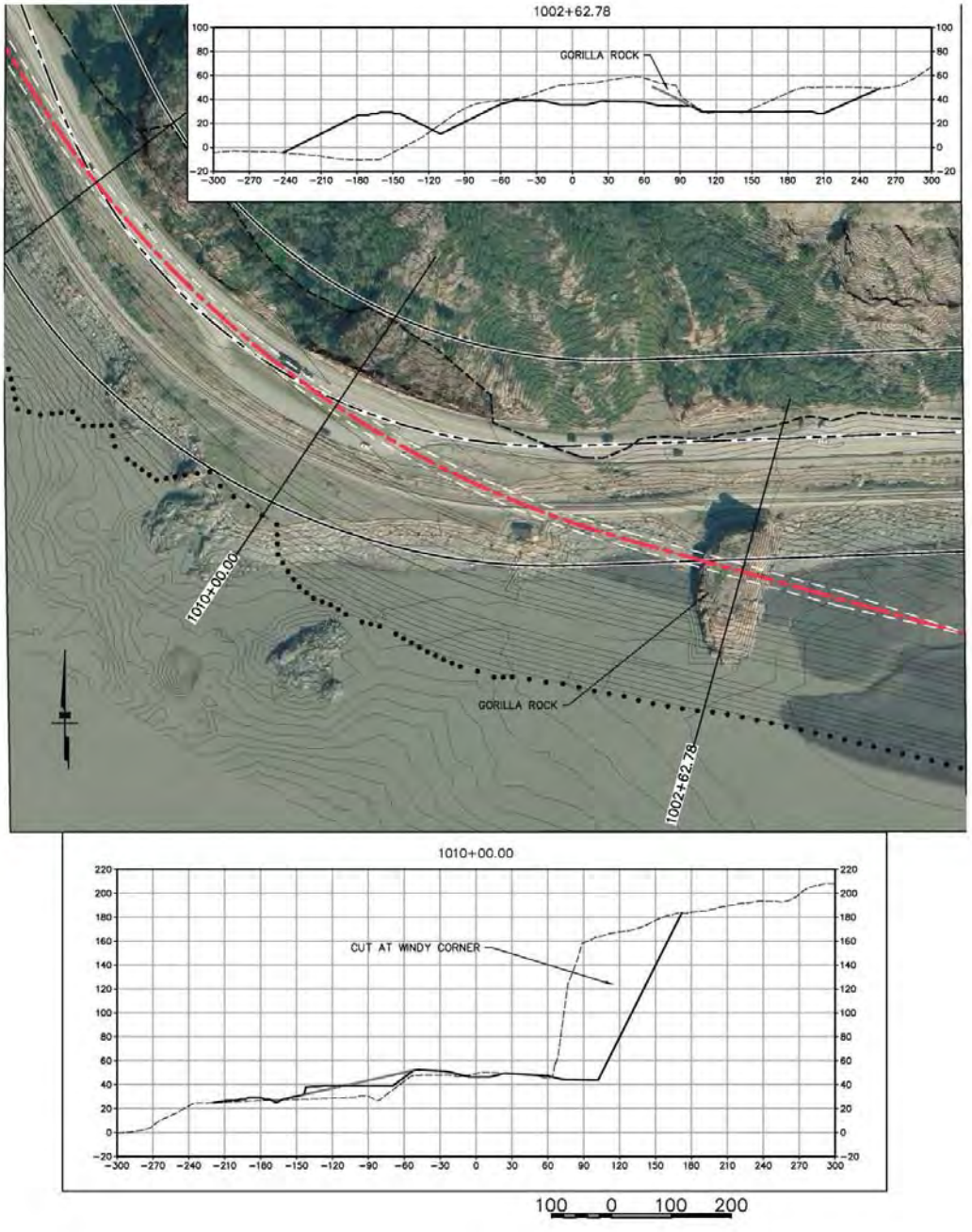


Figure 11: Windy Corner and Gorilla Rock, typical cross-sections indicating excavation extent.

The following steps will be taken to blast and excavate the rock at Windy Corner:

a) Construct Pioneer Road – A pioneer road will be constructed to allow small track mounted equipment (drills, dozers, etc.) access the top of the excavation. This may require small blasts in some areas to remove rock to construct the pioneer road.
b) Remove Vegetation and Overburden – Due to the rugged terrain, a majority of the trees will be cut by hand. The overburden that is not suitable for the embankment will be removed by small track mounted equipment and hauled to the approved waste disposal sites.
c) The following controlled blasting techniques will be used to create a stable cut face sheared along the excavation backslope.
    i. Preshear holes, 2.5 to 3 in (6.4–7.6 centimeter, cm) diameter, will be drilled on approximately 24 to 30 in (61–76.2 cm) spacing along the plane of the excavation backslope. The maximum length of the preshear holes is 40 to 45 ft (12.2–13.7 m). The preshear holes will be lightly loaded with special preshear explosives.
    ii. The next row of drill holes are buffer holes which are also 2.5 to 3 in (6.4–7.6 cm) in diameter and are drilled at least 6 ft (1.8 m) from the preshear holes. The buffer holes are drilled parallel to the excavation backslope. The buffer holes are loaded with only 50% of the explosives of the adjacent production holes. The explosives used in the buffer holes are the same as the production holes.
    iii. The remaining rows of drill holes are production holes which are vertical holes drilled to a maximum depth of 40 to 45 ft (12.2–13.7 m). These holes are not greater than 6 in (15.2 cm) in diameter and are drilled on 8 to 12 ft (2.4–3.7 m) spacing. The spacing of the production holes is dependent on the rock type and size of rock that will be needed. For example, if large rock is needed for armor stone (i.e., large rock that will be later used to armor the shoreline against erosion), the hole spacing will be increased to produce the larger rock.

Blasting plan for Material Site 1 (MS1), Figure 12

The elevation of the top of the existing 110’ to 160’ high cut at MS 1 is approximately 200’ (MSL). The elevation of the top of the proposed cut is +200’ to +230’ (MSL). Total rock excavation needed from MS1 is approximately 1,880,000 c.y. (1,437,363 cu m). It is expected to take approximately 188 blasts to produce enough rock, including armor stone, for the project. The steps described above in the general blasting plan will be taken to blast and excavate the rock at Material Site 1.

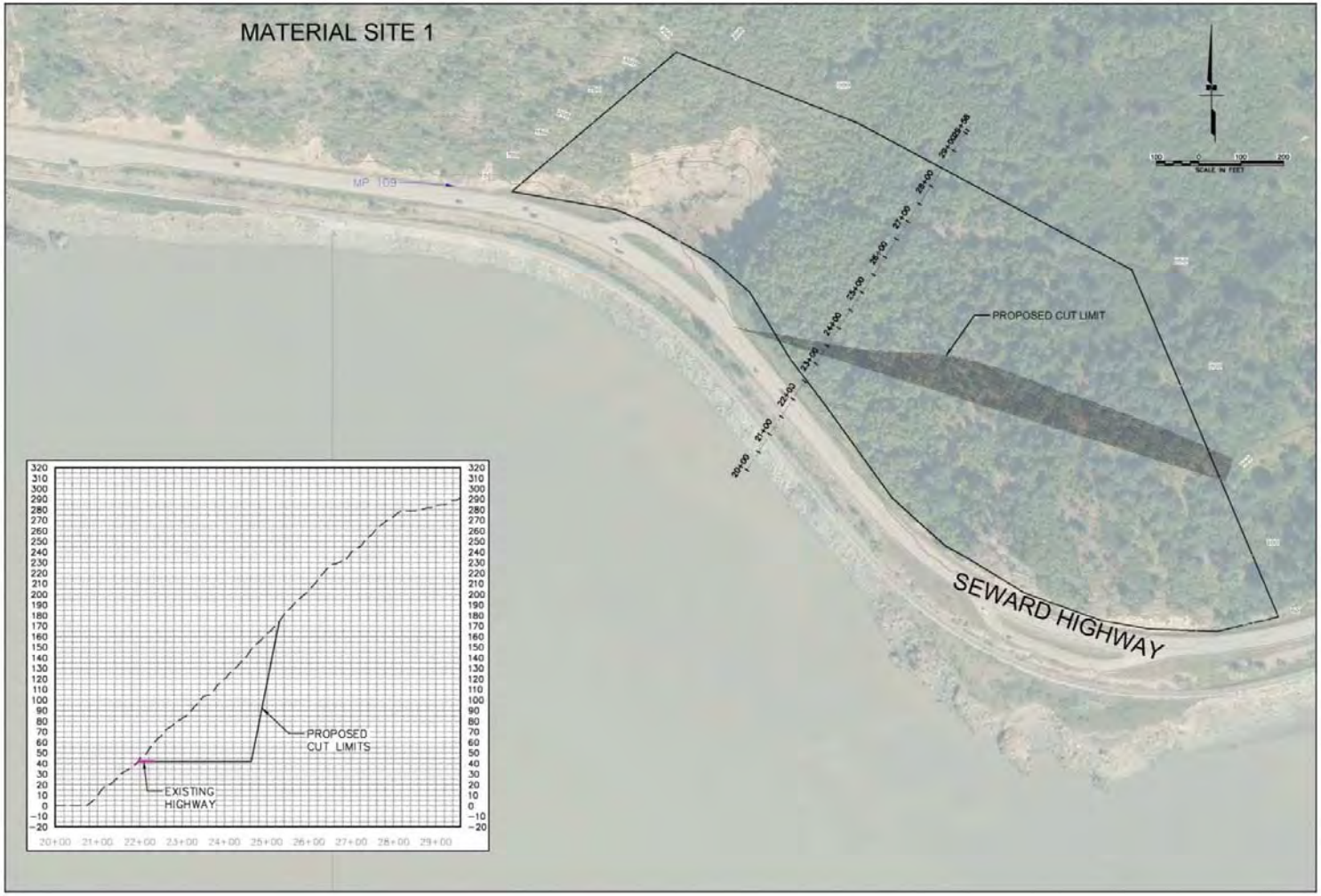


Figure 12: Material Site 1 blasting and excavation extent.

Blasting plan for Material Site 6 (MS 6), Figure 13

The elevation of the top of the proposed cut is +170' (MSL). Total rock excavation needed from MS 6 varies, as it would be supplemental to rock excavation from MS 1. It may be that no rock is required and MS6 may ultimately not be developed. However for purposes of estimating conservatively on potential effects, assume that 400,000 c.y. of fill are required from MS6. It will take approximately 35 to 55 blasts to produce enough rock, including armor stone, for the project. The steps described above in the general blasting plan will be taken to blast and excavate the rock at Material Site 6.

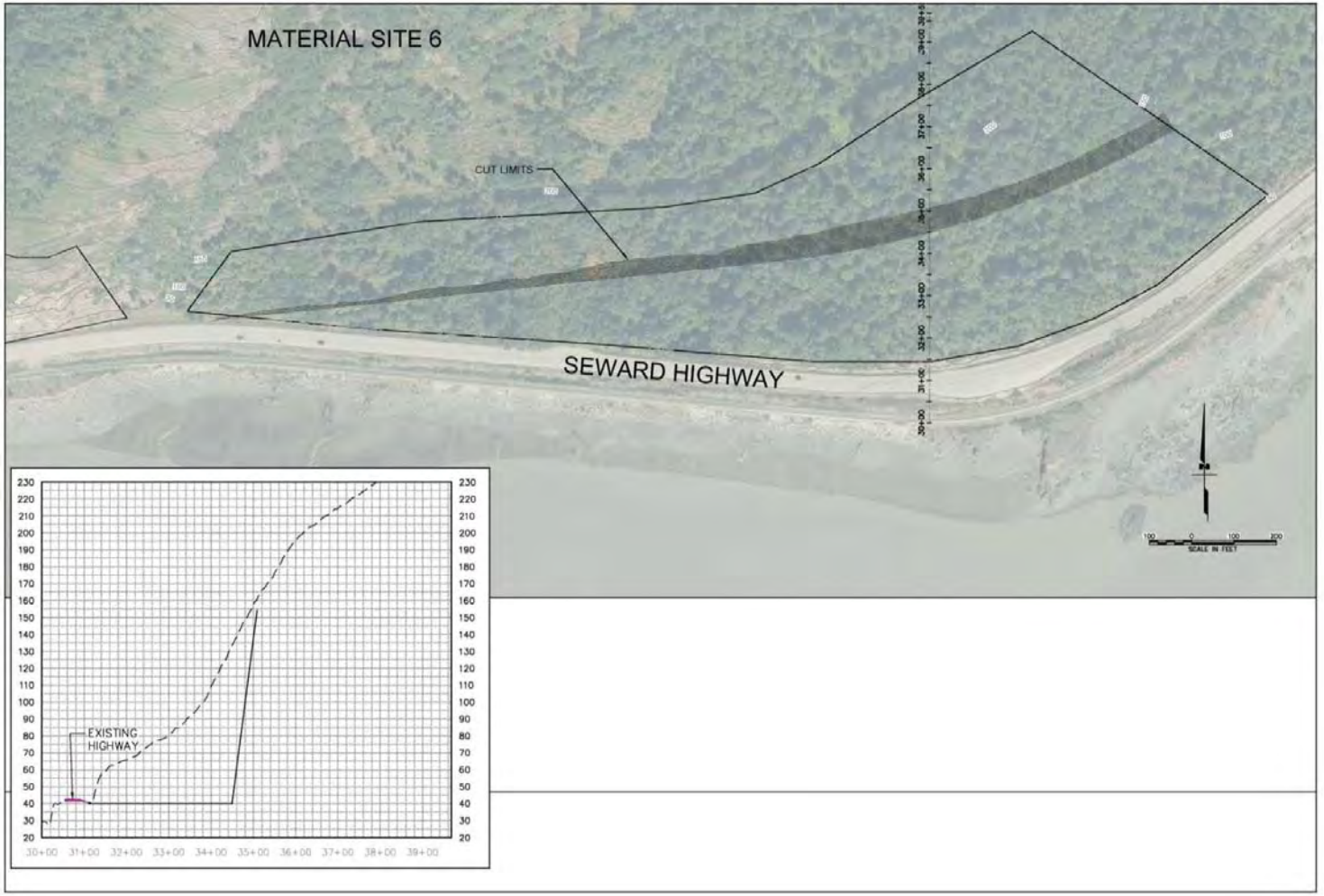


Figure 13: Material Site 6 blasting and excavation extent.

Table 2 summarizes the blasting activities for each blast site of the Windy Corner Project. It should be noted that this information is estimated based on preliminary project designs and standard construction practices. Exact details about the number of blasts per day, the type of explosives used, and the number of delays per blast will all be determined by the construction Contractor. It is likely that no more than a single blast would occur each day, and that no more than one site would be blasted on any given day.

Table 2. Summary of Blasting Activities for the Windy Corner Project

Blast location	Cubic yards (c.y.) of fill	Type of charge	Duration of each blast	Average blasts per day	Estimated days of blasting
Gorilla Rock	4,000	ANFO	2–3 sec	1	5-10
Windy Corner	141,000	ANFO	2–3 sec	1	20-35
MS 1	1,880,000	ANFO	2–3 sec	1	180-200
MS 6	400,000	ANFO	2–3 sec	1	35-55

Placement of fill into Turnagain Arm mudflats

In order to realign the highway and railroad at Windy Corner, fill will be placed in the Turnagain Arm mudflats. Approximately 38 acres (15.4 hectares) of mudflats will be filled (Figure 3).

Construction scheduling and phasing will be at the discretion of the Contractor. However, the following provides what DOT&PF and DOWL consider the best option for construction scheduling:

a) Rock fill from MS 1, and if necessary MS 6, will be hauled to the embankment by dump truck, and either tail dumped or side dumped.
b) Approximately 2 million c.y (1.5 million c.m.) of fill material is needed. Rock fill will primarily come from MS 1 and MS 6, as indicated above. Rock fill will consist of clean rock of varying grades or grain sizes depending upon the use of the fill (armor rock, select material, etc.)
c) The existing traffic pullout at approximately MP106 (southbound) will be closed to the public, and used as a construction staging area and construction access road entrance.
d) A construction access road will be filled and graded from the pullout. This access road will cross the AKRR, and have a turnaround area for construction vehicles.
e) Once this feature is constructed, fill will be imported to the area south of the existing AKRR track, including the intertidal zone. Fill may be brought in by rail or by using the new access road.
f) Prior to new fill being placed adjacent to the existing AKRR track, the coastal armament (aka ‘armor stone’, ‘riprap’) along the existing track will be removed.

g) Once fill in this area is has achieved the appropriate elevation, construction efforts will shift to placing armor stone along the south side (Turnagain Arm) of the proposed future location of the AKRR tracks. This embankment will be placed for the length of the project, and given time to consolidate/settle.
h) Rock fill will be placed onto mudflats at low tide when the mudflats are exposed. In some cases, rock fill will be placed in or near a low-tide channel, in which case rock must be placed below water.

All fill activities will be terrestrially based, in the sense that all fill activities will be initiated on land and will move out towards the water. Barges or other vessels will not be used for filling activities, and dredging will not be involved. Fill activities will occur during the ice-free season of 2016, and will be restricted to daylight hours and low tide periods when the area is de-watered. Limiting intertidal fill work to low tide will ensure proper placement of rock and safe working conditions.

Railroad realignment

a) Following the placement of fill along the future location of the AKRR track, and once sufficient time has passed and settlement has stopped or levelled out, fill material will be rough-graded along the new AKRR embankment, and a temporary construction access road will be laid for building the new track.
b) The new AKRR track will be built, including placement of drainage crossing and the pedestrian/emergency access tunnel.
c) All embankment and armor stone will be placed up to above the high tide line for the length of the alignment. The remainder of the embankment, armor and sub ballast will then be set.
d) A temporary switch will be installed to allow track-mounted equipment access to the new track.
e) Track-mounted equipment will place ballast.
f) The track will be de-stressed, welded, and anchored.
g) The new AKRR track will be opened, and the old track closed.
h) The existing Seward Highway alignment will remain open for as long as possible. Once the AKRR is on its new alignment, construction of the new highway alignment will commence. By this time, the ‘fill footprint’ will have been completed, and blasting at Windy Corner and Gorilla Rock will continue. Gorilla Rock will probably be blasted at this point (safety closures will remain in place during all blast activities), followed by the cut at Windy Corner. Safety closures will be in effect for both of these locations.

Rescue-craft ramp construction

Pre-fabricated concrete slabs will be brought in and placed on graded rock on the silt. This will take place during low tide.

Staging area for construction

Staging areas will be located in upland areas adjacent to the proposed project area. Fuel and other petroleum products for construction equipment would be stored in the upland staging area located at least 100 ft (30.5 m) from any water body. Any fuel stored on site would be within secondary containment units. Best management practices (BMP) and compliance with applicable Alaska Department of Environmental Conservation (ADEC), Environmental Protection Agency (EPA) and U.S. Coast Guard (USCG) requirements on contaminants and spill response will minimize the potential for fuel spills and contamination.

4. Best management practices and other conservation measures

BMPs and other conservation measures (e.g., specific seasonal and tidal-stage work windows, techniques to reduce marine noise, marine mammal avoidance practices) designed to minimize effects of the Windy Corner Project are described in Section V of this document. A detailed monitoring and mitigation plan can be found in Appendix 3.

III. DESCRIPTION OF THE SPECIES AND THEIR HABITAT

The following description of CIBW focuses on those attributes that are relevant to the proposed actions and anticipated effects of the Windy Corner Project. Most of this information has been derived from the Conservation Plan for CIBW (NMFS 2008a), and from an update to it created by the Science Panel of the Cook Inlet Beluga Recovery Team for the draft Recovery Plan (https://alaskafisheries.noaa.gov/protectedresources/whales/beluga/recovery/ci.htm).

Distribution and Stock Structure: The beluga is a northern hemisphere species of small odontocete (toothed whale), and is found in shallow coastal waters of the Arctic and sub-Arctic oceans, except for a small population in the Saint Lawrence Estuary of eastern Canada. Alaska has five recognized beluga stocks, distinguished primarily by summer range: the Beaufort Sea, the eastern Chukchi Sea, the eastern Bering Sea, Bristol Bay, and Cook Inlet (Allen and Angliss 2013).

The degree of genetic differentiation between the Cook Inlet stock (or population) and the other four Alaska beluga stocks (O'Corry-Crowe et al. 1997, 2002, 2010) has led NMFS to designate it as a distinct population segment (DPS; 73 FR 62919, Oct 2008; 65 FR 38778, June 2000). Genetic analyses used to assess patterns of male and female dispersal over time revealed that the CIBW population is effectively reproductively and demographically isolated from all other beluga populations (O'Corry-Crowe et al. 2010). All available evidence indicates that CIBW reside in Cook Inlet year round and do not migrate seasonally out of the Inlet, and other beluga stocks do not foray into Cook Inlet. Only the Cook Inlet DPS of belugas occurs in the Windy Corner Project Area.

Life History: Belugas are sexually dimorphic, with length averaging 11.6 ft (355 cm) in adult females and 13.6 ft (415 cm) in adult males (Burns and Seaman 1986). Males weigh up to 3,307 pounds (lb) (1,500 kilograms (kg)) and females 2,998 lb (1,360 kg; Nowak 2003, 1991). Beluga calves in Alaska have been reported to average 4.9 ft (150 cm) in length and 159 lb (72 kg) at birth (Burns and Seaman 1986). Calves are born dark gray to brownish gray and become lighter with age. Adults become white to yellow-white, although Burns and Seaman (1986) report females may retain some gray coloration for as long as 42 years. Further evidence that color is not a definitive indicator of maturity comes from a study of over 200 harvested belugas in northwest Alaska that found that 90% of light-gray females were sexually mature (Burns and Seaman 1986). Beluga whales have low reproductive potential, giving birth to a single calf only every two, three, or more years (Sergeant 1973; Burns and Seaman 1986, Suydam 2009). Estimates of gestation period for belugas have varied from 11 to 16 months, although data from captive belugas, where conception and birth are known, indicate a gestation of 15.6 months (Robeck et al. 2005). Estimated age of sexual maturity ranges from 4 to 14 years for females and 8 to 15 years for males (Braham 1984; Nowak 1991; Heide-Jørgensen and Teilmann 1994, Suydam 2009). Calving usually occurs in late spring or early summer. The lactation period is known to last at least one year and likely longer in some cases, and the entire reproductive process on average takes three years (Sergeant 1973; Burns and Seaman 1986). Beluga whales may live 60 to 70 years or more (Suydam 2009). Belugas in Alaska are the prey of killer whales (King 1989; Shelden et al. 2003), polar bears (Lowry et al. 1987; Frost et al. 1992), and Alaska Native subsistence hunters (Mahoney and Shelden 2000).

Life history data are sparse for CIBW. Most life history data have been obtained from animals taken in subsistence harvests, although some information has come from stranded or beach-cast whales and some from captive belugas. The only known current predator of CIBW is the killer whale. Mass strandings associated with evasion of killer whales have been observed in Turnagain Arm (Hobbs et al. 2006). There has not been a subsistence hunt by Alaska Natives in Cook Inlet since 2005. Causes of death of CIBW remain largely unidentified due to difficulties in accessing carcasses to conduct post-mortem exams. Identified causes of death in CIBW included trauma, disease, malnutrition, complications during birth, and complications from previous live strandings (Burek et al. in review). The term "stranded" includes carcasses found dead and live animals on the beach. Strandings occur for a variety of reasons; beluga may intentionally ground themselves in shallow waters to more easily rub off old skin, to avoid predation or other perceived threats (e.g., acoustic disturbances, vessel traffic, or other anthropogenic activity), when chasing prey, or as a result of an inability to properly navigate or maneuver when debilitated by injury or disease (Smith et al. 1992; Moore et al. 2000; Shelden et al. 2003; Burek and Goertz 2010; Vos and Shelden 2005).

Survival data derive from CIBW carcasses reported to the NMFS Alaska Region Office, and consequently represent a minimum estimate of mortality for the CIBW population. From 1999 to 2005, years in which a limited subsistence harvest of CIBW occurred, an average of 12 mortalities were reported each year (Vos and Shelden 2005) during a time when the population size averaged around 350 animals. This provided an estimated annual survival probability for CIBW of 0.97/year. Calf survival closely relates to survival of the mother during the first year following birth. Based on gestation and timing of birthing, mating is believed to occur sometime between late winter and early spring; however, there is little documentation on the mating behavior of CIBW. Calkins (1983) suggested that most calving in Cook Inlet occurs from mid-May to mid-July, although Native hunters have reported calving from April through August (Huntington 2000). Neonates (newborn calves) were observed between mid-July and early October during over 250 photo-id surveys of Upper Cook Inlet conducted from April through November between 2005 and 2014 (McGuire and Bourdon 2012; McGuire et al. 2014, McGuire unpublished data).

Social Structure: Beluga whales are extremely social animals that typically migrate, hunt, and interact with one another, often forming dense groups. In areas of the Arctic, belugas aggregate in groups of hundreds and sometimes thousands (O'Corry-Crowe 2002). It is thought that the basic social units of these groups are maternal lineages of adult females and their offspring, and that males migrate separately (Smith et al. 1994).

CIBW generally travel in groups that range in size from several whales to 200 or more, although single whales are occasionally seen (McGuire and Bourdon 2012, McGuire et al. 2014). It is not known if groups represent distinct social divisions. Preliminary results from photo-identification research indicate beluga groups in Upper Cook Inlet during the ice-free months of the field season (i.e., April through October) are mixed (contain large white animals, medium-sized gray animals, and dark calves) and homogenous with respect to individual associations, without evidence of long-term sub groupings (McGuire et al. 2014). There is no evidence of sexual segregation. Changes in seasonal distribution of prey species may account for seasonal changes in beluga group size (Moore et al. 2000).

Ability to see, smell, and taste: Belugas have the capacity for acute vision both in and out of the water, and they appear to have the ability to see in both dim and bright light. As with other whales, belugas have a more limited capacity for color vision compared to most land mammals (Peichl et al. 2001; Levenson and Dizon 2003). It is likely that belugas, like other odontocetes, do not have a sense of smell because they lack olfactory lobes (Kellogg 1958). Belugas may have areas in their mouths that allow them to taste (Haley 1986). Research on the abilities of CIBW to see, smell, and taste has not been conducted.

Hearing: The adaptation of marine mammals to the aquatic environment, where vision, taste and smell would have limited utility, has favored sound as their primary sense (Wood 1973, Ketten 2012). Cetaceans (i.e., whales, dolphins, and porpoises) use sound to navigate, communicate, locate prey and mates, and avoid predators. Beluga whales are one of the most-studied of all odontocetes in terms of hearing abilities (Richardson et al. 1995). Hearing in many toothed whale species (including beluga whales) is most sensitive in the mid-frequency range. Beluga hearing has been reported to range from ~40 Hz to 150 kHz (Johnson 1967; White et al. 1978; Johnson et al. 1989; Au 1993), with the greatest sensitivity at ~10-100 kHz (Richardson et al. 1995), although recent work by Castellote et al. (2014) suggests belugas are most sensitive between 45 and 80 kHz and have a hearing range of 4–150 kHz. All audiograms suggest beluga whales have an overall auditory bandwidth of roughly eight times that of humans (Au 1993). Awbrey et al. (1988) reported average hearing thresholds for captive beluga whales of 65 and 120.6 dB re 1 µPa at frequencies of 8 kHz and 125 Hz, respectively. Finneran et al. (2000) measured masked hearing thresholds of ~120 dB re 1 µPa for a captive beluga whale at three frequencies between 1.2 and 2.4 kHz. Beluga whales have some limited hearing ability down to ~35 Hz, where their hearing threshold is about 140 dB re 1 µPa (Richardson et al. 1995 and references therein). Lowest auditory thresholds of wild belugas in Bristol Bay, Alaska were identified in the range 45–80 kHz (Castellote et al. 2014). Both Klishin et al. (2000) and Mooney et al. (2008) found overall low thresholds, near 45 dB, for some frequencies and a steep high-frequency cutoff near 100–128 kHz. The two studies also revealed two highly sensitive regions (<60 dB), a lower frequency region centering near 32 kHz and a higher frequency region from 70–80 kHz. Between these frequency bands, both studies found a clear dip at approximately 50 kHz. As is typical for all odontocetes, beluga hearing thresholds increase gradually at lower frequencies (<32 kHz) and more steeply for higher frequencies starting at 90–100 kHz. Beluga hearing has been determined to be as good at 984 ft (300 m) depth as at the surface (Ridgway et al. 2001). A study conducted with a captive beluga showed that the most efficient hearing pathway is from the tip of the lower jaw through fat channels that guide sound to the inner ear (Mooney et al. 2008). This feature may allow belugas greater directional hearing than other odontocetes.

Sound Production: Belugas are among the noisiest of cetaceans, making a wide variety of sounds that fall into two acoustic categories: whistles or narrow band frequency modulated vocalizations, and pulsed sounds or trains of broad band pulses. The latter can be divided into two functional categories: click trains, used largely for echolocation, and burst pulse sounds (bursts of pulses with rapid pulse repetition rates), believed to be social signals, which may sound to the human ear like grunts, squawks, screams, whines, and whistles (Schevill and Lawrence 1949; Ouellet 1979; Sjare and Smith 1986a). Beluga whistles have dominant frequencies in the 2-6 kHz range (Sjare and Smith 1986a). Other beluga call types reported by Sjare and Smith (1986a, b) included sounds at mean frequencies ranging upward from 1 kHz.

The vocalization frequencies and hearing ranges of beluga whales are much higher than those of the baleen whales. Studies show that belugas have highly developed and sophisticated echolocation capabilities, with echolocation peak frequencies from 40–120 kHz (Au et al. 1985, 1987; Au 1993).

Little work has been done on CIBW hearing and sound production. CIBW live in an extremely turbid aquatic environment with limited daylight hours during the winter months, which suggests that hearing and sound production (including echolocation) is especially important and that vision, while good, is of limited use. An array of sonobuoys was used in 2009 to detect beluga vocalizations in Knik Arm; all detections consisted of echolocation clicks and no whistles or other vocalizations were detected (Širović and Kendall 2010; Kendall 2010). Castellote et al. (2011) compared acoustic behavior with surface behavior of CIBW detected visually and found that acoustic behavior was modified during feeding or prey search.

Swimming and Diving: Beluga whales typically swim at speeds between 0.6 mi/hr (1 km/hr) and 6.2 mi/hr (10 km/hr), but have been estimated to sustain speeds over 12.4 mi/hr (20 km/hr) for periods of a half hour (Richard et al. 1998). Suydam (2009) estimated typical speeds at 1.5–2.0 mi/hr (2.5–3.3 km/hr), and Smith and Martin (1994) estimated swimming speeds of 1.0–3.7 mi/hr (1.6–6.0 km/hr) during the fall migration. Belugas from stocks found in those regions with access to deep water are capable of dives as deep as 2,624.7 ft (800 m) at vertical speeds of 1.2–4.3 mi/hr (2–7 km/hr; Heide-Jørgensen et al. 1998).

Satellite-tagged belugas in Cook Inlet showed mean dive depths of 5.2 to 22 ft (1.6 to 6.7 m) and mean dive durations of 1.1 to 6.9 minutes (Goetz et al. 2012b). In Cook Inlet, daily net travel distances have been shown to vary from 1.0 (SD ± 20) mi/hr (1.6 km/hr) to 2.7 (SD± 3.1) mi/hr (4.3 km/hr), with a mean transit rate of 1.7 (SD ±2.4) mi/hr (2.8 km/hr;Goetz et al. 2012b). Tagged CIBW travelled faster December–May than June–November, and travelled slower in coastal areas than they did in offshore waters of the Inlet (Goetz et al 2012b). In the areas of Cook Inlet occupied by belugas, the depth does not exceed 328.1 ft (100 m), and much of the time the belugas are in waters less than 65.6 ft (20 m) in depth. Consequently, CIBW are able to access the entire water column. Typical dive sequences consist of three to five short intervals of 7–10 seconds followed by a longer dive of a minute or more. Mean dive depth ranged from 5.2 (SD ± 2.1) to 22.0 (SD ±10.4) ft (1.6 to 6.7 m) and mean dive duration ranged from 1.1 (SD ±1.3) to 6.9 (SD ±-9.5) minutes (Goetz et al. 2012b), with shorter dives occurring in near-shore areas. The average dive interval (the time from the beginning of one surfacing to the beginning of the next) is 24.1 seconds for CIBW (Lerczak et al. 2000).

General Diet and Foraging: The diet of beluga whales throughout their circumpolar range is dominated by fish and invertebrates. Belugas are toothed whales that pursue their prey and swallow it whole, and are known to feed on prey that concentrate, including shrimp and schooling or spawning fish (Seaman et al. 1982). Diet data for CIBW are limited to a relatively small sample of stomach contents and stable isotope analyses (Quakenbush and Bryan 2014*)* as well as observations from Alaska Native subsistence harvests (Fall et al. 1984; Huntington 2000). Stomach content analysis indicated that belugas fed on: salmon, gadids, eulachon, and flounders; salmon frequencies included coho, Chinook, and chum. Gadids included saffron cod, walleye pollock, and Pacific cod. The two flounder species identified were yellowfin sole and starry flounder. A longnose sucker was the only freshwater fish found. Seven types of

invertebrates were found in the beluga stomachs, with the frequency of occurrence highest for shrimp, followed by polychaetes and amphipods. Other invertebrates included Tanner crab and sponges. Because fish found in beluga stomachs may have also consumed a variety of prey, including polychaetes, shrimps, amphipods, and other fishes (Clausen 1981, 1983; Seaman et al. 1982), some prey items in the beluga stomachs could have resulted from secondary ingestion. Natives have reported that, in addition to feeding on salmon and eulachon, CIBW feed on freshwater/brackish fish, including Pacific tomcod, burbot, steelhead trout, northern pike, whitefish, and Arctic grayling (Fall et al. 1984; Huntington 2000).

Beluga whales in Cook Inlet feed most conspicuously during the spring, summer, and fall months near the mouths of rivers during anadromous fish runs. Traditional ecological knowledge (TEK; Huntington 2000) reports that summer feeding is very important for CIBW and that spring belugas are much thinner than belugas observed in the fall after a summer of feeding. Dive behavior data from satellite tags deployed on 11 CIBW (Goetz et al. 2012b) indicted that dives were significantly shorter and shallower from June to November versus December to May. Over 50% of the dive effort occurred in shallow, near-shore areas of Chickaloon Bay, Susitna Delta, Knik Arm, Turnagain Arm, and Trading Bay suggesting feeding in these areas. These locations are also recognized as areas where anadromous prey concentrate when entering river mouths. CIBW appear to feed extensively on concentrations of spawning Pacific eulachon in the spring. (NMFS 2008a). Belugas shift to foraging on salmon species when eulachon runs diminish and salmon return to spawning streams. While winter foraging is not well known, it is presumed that CIBW forage more on benthic species or opportunistically on infrequently encountered pelagic species (NMFS 2008a).

A. Occurrence of Other Marine Mammals in the Project Action Area

In addition to the endangered CIBW, six other marine mammal species could occur in the Windy Corner Project Action Area (Table 3). Three of these species, the gray whale, the humpback whale, and the Steller sea lion (Western stock) are listed as endangered under the ESA. Sightings of these three species in Turnagain Arm are extremely rare. In nine years (2006–2014) of studying CIBWs along Turnagain Arm during the ice-free season, LGL Alaska Research Associates, Inc. (LGL) has recorded a lone gray whale in May 2006 (Markowitz et al. 2007), a lone Steller sea lion in the fall of 2006, and a lone humpback whale in April 2014 (McGuire, unpublished data). Given the rarity of sightings of other endangered marine mammals in Turnagain Arm, DOT&PF considers the likelihood of their presence in the action area to be negligible, and only considers the potential impacts to CIBW (and its critical habitat) in this BA.

Table 3. Marine mammals that could occur in the Windy Corner Project Action Area.

Common name	Listed as ESA endangered or threatened?	Critical habitat designated in Upper Cook Inlet?	Likelihood of occurrence in project area
Gray whale	endangered	no	low
Steller sea lion	endangered (western distinct population segment)	no	low
Humpback whale	endangered	no	low
Harbor seal	no	n/a	high
Harbor porpoise	no	n/a	medium
Killer whale	no	n/a	medium

Table information compiled from http://alaskafisheries.noaa.gov/protectedresources/ and http://ecos.fws.gov/speciesProfile/.

B. Occurrence of Other Protected Species in the Waters of the Windy Corner Project Action Area.

All West Coast salmon species (and associated Evolutionary Significant Units [ESUs]) currently listed as threatened or endangered under the ESA originate in freshwater habitat in Washington, Idaho, Oregon, and California. In Alaska, no stocks of Pacific salmon or steelhead from freshwater habitat are endangered species. Some listed species migrate as adults into marine waters off Alaska, but none are likely to occur in Upper Cook Inlet.

DOT&PF sent a letter to NMFS on March 19, 2013 requesting concurrence that the CIBW is the only species present in Turnagain Arm under NMFS jurisdiction. Concurrence was received from NMFS in a letter dated April 9, 2013 that the CIBW is the only species listed under the ESA under NMFS jurisdiction that is commonly observed in the waters of Turnagain Arm. DOT&PF sent a letter to USFWS on March 29, 2013, asking for concurrence that no threatened or endangered species under USFWS jurisdiction were present, and concurrence was received from USFWS in a letter dated April 1, 2013 that no threatened, endangered or candidate species occur regularly in Upper Cook Inlet.

C. General Description of Cook Inlet Habitat

Cook Inlet is a tidal estuary approximately 220 mi (350 km) in length and is located in south central Alaska (Figure 14), covering an area of ~7722 mi^2 (20,000 km^2). It is roughly divided into the Upper and Lower Inlet by the East and West Forelands. The tidal fluctuation in Cook

Inlet is relatively large, with a differential as great as 39.4 ft (12 m). Large areas of mud flats are exposed at low tide. Tidally driven turbulence suspends large volumes of sediment in the water from glacial outflow and coastal erosion, and is greatest near the mouth of large rivers. The peak ice presence in Cook Inlet is typically from January to March, but ice may be present from October through early June (Mulherin et al. 2001). Maximum summer air temperatures in Cook Inlet rarely exceed 70°F (21.1°C) and usually occur in August, with average summer temperatures (June through August) of 44°F to 67°F (6.7°C to 19.4°C). Average winter temperatures (November through March) typically range from 4° F to 34°F (-15.5°C to 1.1°C) although periods with colder temperatures are not uncommon and the coldest temperatures occur in January (Western Regional Climate Center 2005). Wind, rain, and heavy snowfall are common in Cook Inlet during winter. Average annual snowfall in Anchorage is approximately 70 in (178 cm). Average annual precipitation is 15 in (38 cm) in Anchorage with the greatest amounts of precipitation occurring in August and September (Western Regional Climate Center 2005). Prevailing winds in Cook Inlet are south/southwest in summer and north/northeast in winter. Daylight varies in the Cook Inlet area from approximately 5.5 hours at the winter solstice to about 19.5 hours at the summer solstice.

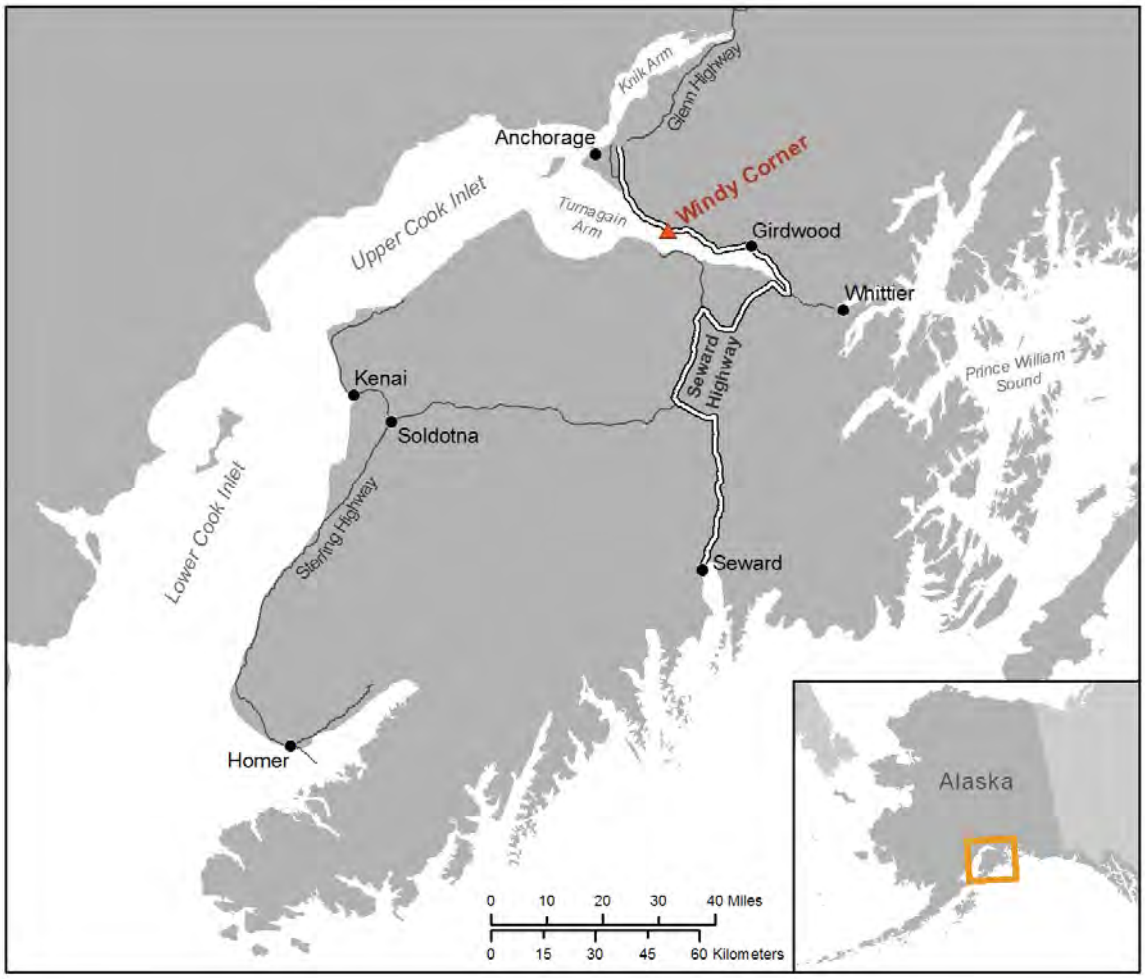


Figure 14: Map of Cook Inlet, Alaska.

Ice forms in Cook Inlet during winter months and can be particularly concentrated in areas such as Knik and Turnagain arms due to the freshwater input from the numerous rivers in the area. Rivers freeze in October and November and ice forms in the upper inlet by early to mid-December. Ice cover is variable, however, and break-up may occur as early as mid-March or as late as mid-May.

Cook Inlet bathymetry is varied with numerous shoals and adjacent canyons. Depth is generally less than 240 ft (73 m), although deeper water exists in channels and at the mouth of the inlet, where depths range from 600–1,200 ft (183 m to 366 m; Mulherin et al. 2001). In the northern part of Upper Cook Inlet, including Knik and Turnagain arms, vast areas of mudflat are exposed at low tide.

Surface water circulation within Cook Inlet generally follows a counterclockwise motion (Mulherin et al. 2001), though surface water movement in the offshore waters of the study area is

generally to the southwest. While circulation currents are driven by the exchange of water with the Gulf of Alaska and freshwater systems of the inlet (Mulherin et al. 2001) they exert less influence on flow in the inlet than the extreme tidal currents. Tidal currents are strongest in Upper Cook Inlet. Current velocity in Lower Cook Inlet ranges from 3.3 to 4.9 ft/sec (1.0 to 1.5 m/sec), while average values in Upper Cook Inlet reach more than 6.6 ft/sec (2 m/sec; Mulherin et al. 2001) and can reach 13.5 ft/sec (4.1 m/sec) in constricted areas such as between the forelands and at the mouths of Knik and Turnagain arms. Two unequal high and low tides occur each day, approximately six hours apart. Brief periods of slack tide occur while the tide changes direction in Upper Cook Inlet, but not in Lower Cook Inlet. Mean tidal fluctuations vary considerably within the inlet. Near Anchorage, the mean tidal differential is 25.9 ft (7.9 m) compared to 11.5 ft (3.5 m) in the southern part of the inlet, near Kennedy Entrance.

D. General Description of Turnagain Arm Habitat

Cook Inlet's Turnagain Arm is about thirty miles long and approximately four miles in width. It is quite shallow (max depth of 65.6 ft (20 m), 6.56 ft (2 m) in some areas; NOAA bathymetric database), and parts of it become dry during low tide. The USFWS National Wetlands Inventory classifies Turnagain Arm marine waters as intertidal estuarine wetlands. Two main, deep-water channels are located along the north and south shores of the arm. Turnagain Arm sees the largest tidal range in United States, with a 30 ft (9.2 m) mean, the fourth highest in the world. Turnagain Arm exhibits a tidal bore, which may be more than 6.0 ft (1.8 m) high and travel at 15 mi/hr (24.1 km/hr) on high spring tides.

Geologically, much of the north shore of Turnagain Arm is exposed McHugh Complex outcropping, a mass of metamorphic rock. The entire length of the proposed Windy Corner project constitutes the type-site for the McHugh Complex (Clark 1973). The predominant landform from milepost 104 to milepost 109 is steep to vertical mountainside with abundant loose rock. Creeks and small seasonal streams drain the mountainsides. The predominant soil type is a variable depth organic horizon with subsoil and bedrock. Depths for each of these soil horizons are unknown presently. Glacial silt and sand compose the Turnagain Arm seafloor.

E. Beluga Distribution and Habitat Use in Cook Inlet

Data on CIBW distribution and habitat use comes primarily from two sources: aerial surveys (Hansen and Hubbard 1999; Rugh et al. 2010), and satellite transmitter tagging studies during August through March (Hobbs et al. 2005). Additional information is provided by traditional ecological knowledge of Alaskan Natives (TEK; Huntington 2000; Carter and Neilsen 2011), boat- and land-based observations (Speckman and Piatt 2000; McGuire and Bourdon 2012; McGuire et al. 2014), passive acoustic monitoring studies (Lammers et al. 2013), opportunistic reports (Rugh et al. 2000; Vate-Brattstrom et al. 2010; NMFS unpubl. data), NMFS stranding records (Vos and Shelden 2005; NMFS unpubl. data), and a citizen science beluga sighting project (Svarny Carlson and Brunner 2012).

Localized information on beluga distribution and habitat use of specific areas of Cook Inlet was obtained by reviewing studies conducted in conjunction with the following development activities: the Port of Anchorage Expansion Project; Ocean Renewable Power Company's Fire Island Tidal Project; Pac-Rim Coal's Chuitna Coal Project; DOT&PF's Seward Highway

Project; the Knik Arm Bridge and Toll Authority; Joint Base Elmendorf Richardson; and various seismic programs for Apache Alaska, ConocoPhillips Alaska, and Furie/Escopeta Oil. Reports from these may be found at http://www.fakr.noaa.gov/protectedresources/whales/beluga/development.htm#pm.

1. Inter-annual distribution patterns of belugas in Cook Inlet

The distribution of CIBW has changed significantly since the 1970s, when aerial surveys for belugas were first conducted. Aerial surveys of Cook Inlet in June and July were conducted in the late 1970s by ADF&G and annually since 1993 by NMFS. Each of the surveys in the 1970s was a single sample of the study area, while the NMFS surveys covered a 4- to 10-day period each year and included 3–7 repetitions of coastal flights around the upper Inlet plus 1–2 days dedicated to a survey of the lower Inlet. While many of the early reports lacked sufficient descriptions of how and where the surveys occurred, good documentation is available for aerial surveys conducted on June 18, 1978 and June 18–22, 1979 (Alaska Department of Fish and Game, unpubl. data) and from the NMFS surveys starting in 1993 (Rugh et al. 2000, 2005a,b).

To examine changes in historical distribution patterns of CIBW, three time periods were considered: late 1978–1979 (when well-documented data are available); 1993–1997 (during a decline in abundance); and 1998–2008 (when hunting was regulated and recovery was anticipated; Rugh et al. 2010). This analysis of aerial survey data shows that the extent of the late spring/early summer distribution (June/July) of belugas in Cook Inlet has changed considerably since the late 1970s. Beluga whales were distributed over a relatively large area in 1978 and 1979, with the central location occurring between the McArthur and Beluga rivers (Figure 15). The area of highest concentration included the region from Drift River to the Susitna Delta. The TEK also indicates that CIBW had long been observed in the southern Inlet, including Kachemak Bay on the eastern side and Tuxedni and Trading bays on the western side, although rarely in large numbers (Huntington 2000). From 1993 to 1997, the central location shifted northwest to the mouth of the Susitna River and the area of highest concentration contracted to a region north of Moose Point (Figure 16). From 1998 to 2008, the central location shifted west, then occurring between the Little Susitna River and Fire Island (Figure 17); the area of highest concentration included Knik Arm and Chickaloon Bay (between Point Possession and Turnagain Arm). Changes in distribution over the three time periods were significant. These include the northwest contraction of the range of belugas into upper Cook Inlet from the 1970s to the 1990s and into the 2000s, as well as a longitudinal shift west toward Anchorage between 1993 and 2008. Core summer distribution was estimated to have contracted from over 2,703 mi^2 (7,000 km^2) in 1978–1979 to 1,081 mi^2 (2,800 km^2) in 1998–2008 (Rugh et al. 2010). Fewer sightings in this region in recent decades (Hansen and Hubbard 1999; Speckman and Piatt 2000, Rugh et al. 2000, 2004, 2010) indicate that ranging behavior has contracted to the mid and upper Inlet, coincident with a decline in population size.

The reason for this change of distribution is not known but several hypotheses have been proposed, including: 1) an effect of changing habitat, such as through diminished prey availability (Moore et al. 2000); 2) avoidance of killer whale predation (Shelden et al. 2003); and 3) this remnant population remains in preferred habitat areas (Goetz et al. 2007) because intra-specific competition is greatly reduced by the small population size. Regardless of the reason, the

result of the CIBW range contraction brings animals in a small range proximal to Anchorage during summer months, with the increased potential for disturbance from human activities.

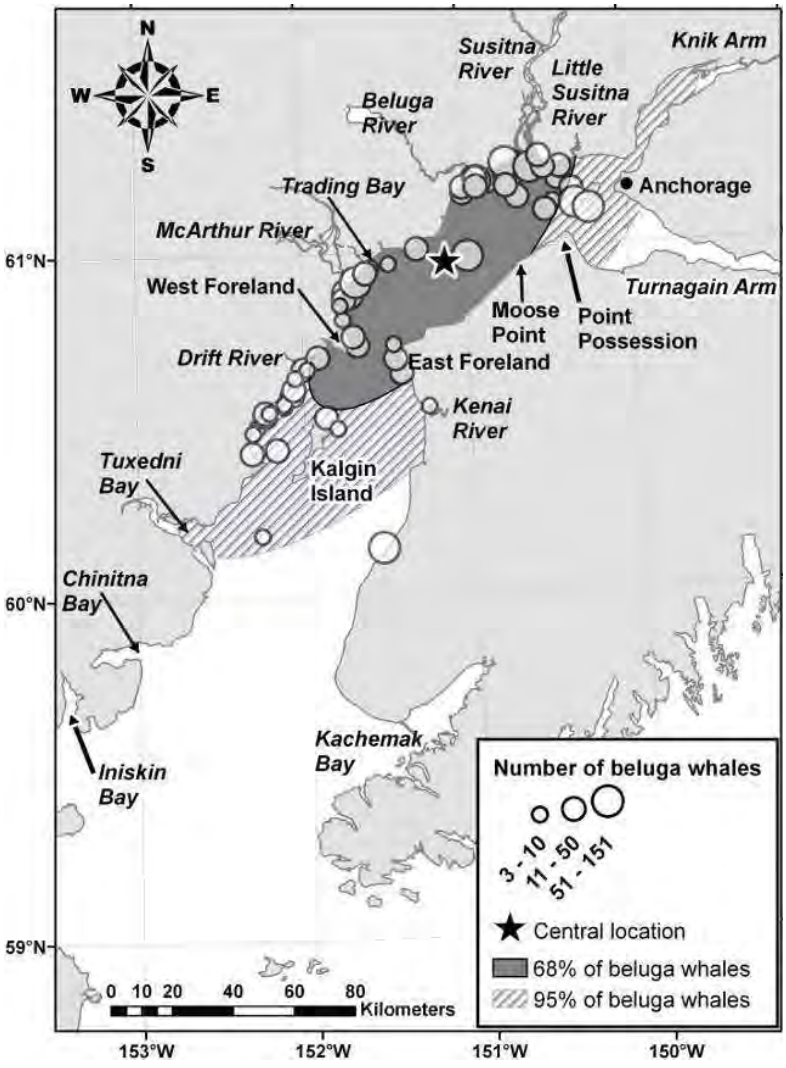


Figure 15: Areas occupied by beluga whales in Cook Inlet, Alaska, in June/July 1978–1979 (from Rugh et al. 2010).

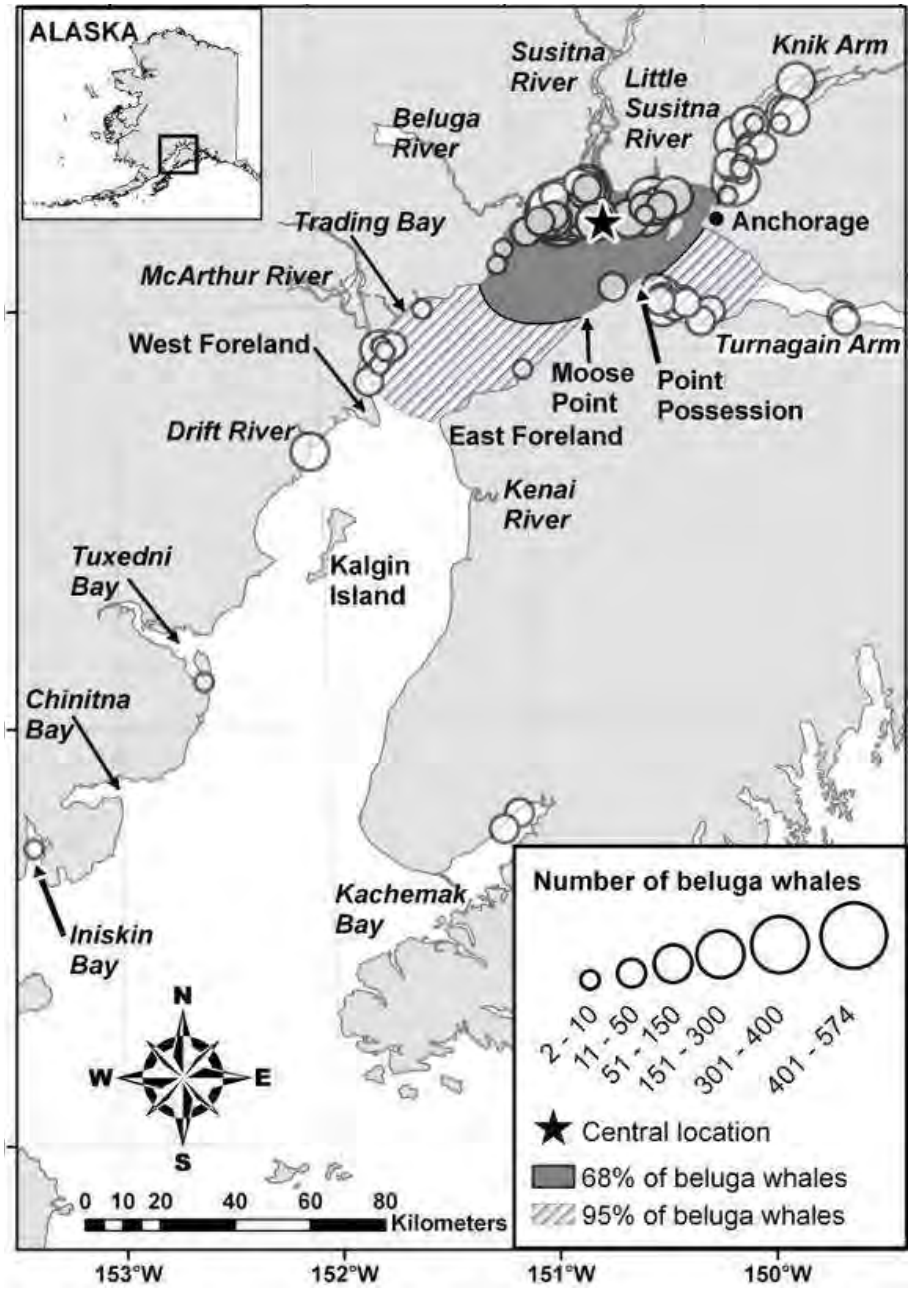


Figure 16: Areas occupied by beluga whales in Cook Inlet, Alaska, in June/July 1993–1997 (from Rugh et al. 2010).

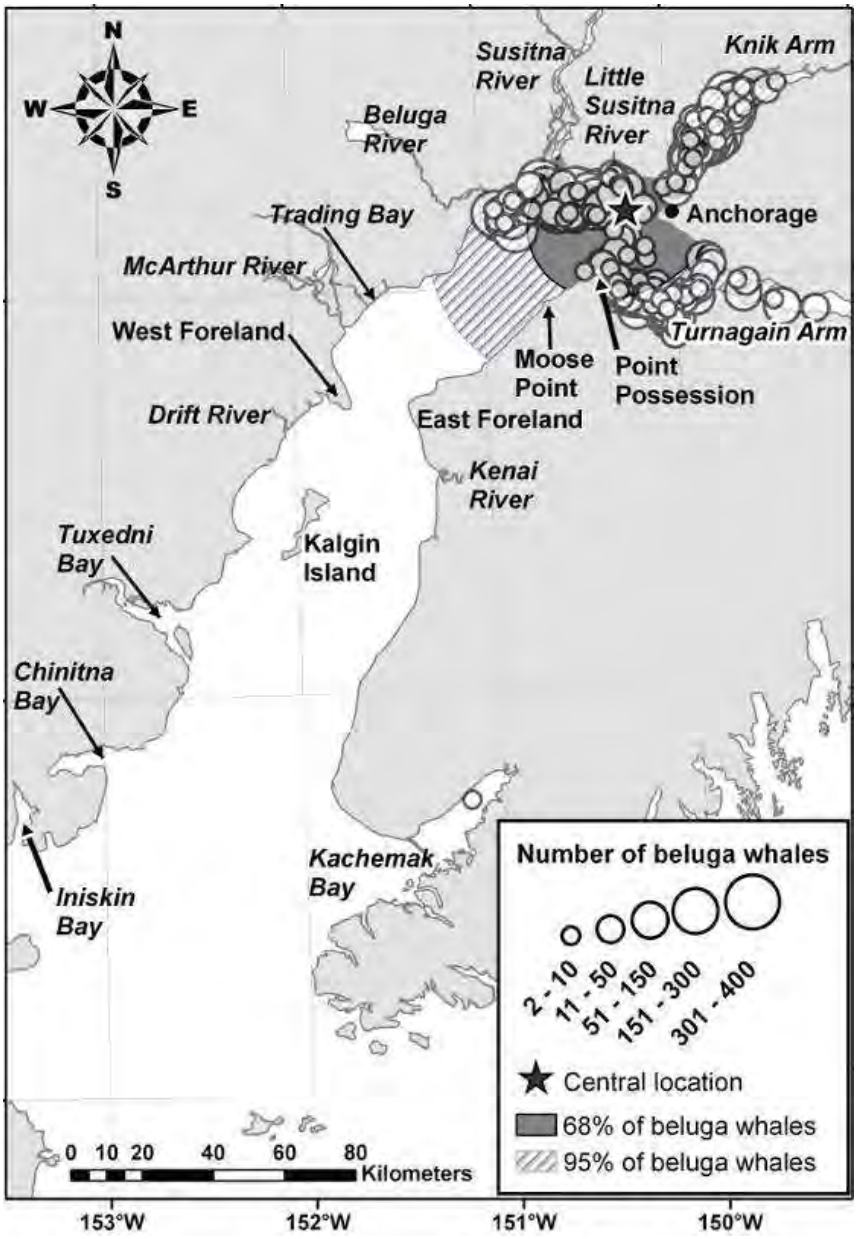


Figure 17: Areas occupied by beluga whales in Cook Inlet, Alaska, in June 1998–2008 (from Rugh et al. 2010).

2. Seasonal distribution patterns

Multiple data sources indicate that beluga whales exhibit seasonal shifts in distribution and habitat use within Cook Inlet. Such patterns appear to be related to seasonal changes in the physical environment (e.g., ice, currents) and to shifts in food sources, specifically the timing of fish runs. Whales spend the ice-free months in the upper Inlet (often at discrete high-use areas), then expand their distribution south and into more offshore waters of the middle Inlet in winter, although they are also still found in waters of the upper Inlet (Hobbs et al. 2005). These seasonal patterns have been long observed and utilized by subsistence hunters (Huntington 2000), and have more recently been documented by aerial surveys (Rugh et al. 2000, 2004), satellite telemetry (Hobbs et al. 2005), and during shore- and boat-based observations (Funk et al. 2005; McGuire and Bourdon 2009). More recently, passive acoustic monitoring was used to assess seasonal movements throughout the Inlet (Lammers et al. 2013).

Of the 15 belugas tracked with satellite transmitters between May 1999 and March 2003, nine whales logged movements into December and four to the following March (Hobbs et al. 2005). All remained within Cook Inlet for duration of the tracking period. Whales spent the summer and early autumn months in the upper Inlet, concentrating at river mouths. Within this time period, whales often made weekly movements between the mouth of the Little Susitna River, Knik Arm, Turnagain Arm, and Chickaloon Bay. During the late summer the belugas remained in the upper Inlet centered in Knik Arm (Figures 18a, 18b). During the fall the belugas concentrated in Chickaloon Bay and areas of the west side near Tyonek (Figures 18c, 18d). In late fall, tagged whales began to make more extensive movements south into the middle Inlet and into deeper offshore waters (Figure 18e) and were not found in large dense groups that were commonly seen in the summer months (Rugh et al. 2004). This pattern continued through winter (Figures 18f–18h) when whales exhibited the most wide- ranging movements, spanning both near shore and offshore waters from the upper reaches of Knik Arm to the middle of Cook Inlet.

Figures 18 (a–h): Monthly kernel density charts based on daily tag locations (a single best location was chosen for each day); the yellow area represents the highest density and 50% of the population, the green is 75% and the red is 95% of the population (Hobbs et al. 2005)

Figure 18a



Figure 18b



Figure 18c



Figure 18d



Figure 18e



Figure 18f

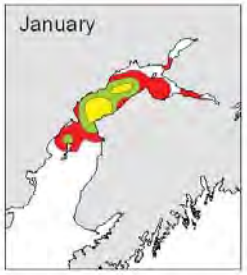
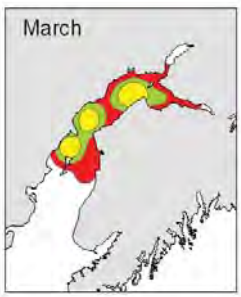


Figure 18g



Figure 18h



A year-round shore-and boat-based observational study in Knik Arm (July 2004–July 2005) revealed seasonal patterns in habitat use and abundance of this area, with peak abundances in fall (September) declining to lowest numbers in winter, and highest use of river mouths and mud flats (Funk et al. 2005). Shore-based studies during the ice-free months along Turnagain Arm found peak beluga abundances mid-August through October, with whales occasionally present mid-April to early May (Markowitz et al. 2007; McGuire and Bourdon 2012, McGuire et al. 2014). An ongoing (2005–present) photo-identification study within the upper Inlet with sighting histories of 312 individual belugas to date has documented movements by individual whales among several high-use areas within a summer season, including Susitna Flats, Knik Arm, Chickaloon Bay, Turnagain Arm, and the Kenai River (McGuire et al. 2014). Initial results from passive acoustic monitoring across the entire Inlet support seasonal patterns observed with other methods (Lammers et al. 2013).

Large aggregations of belugas in specific areas of Upper Cook Inlet during May to October are presumed to indicate a critical time period for foraging, based on the need for all animals to assimilate resources for overwinter survival (Calkins 1983; Huntington 2000). It is during the ice-free months that calves are born and nursed, and that the whales acquire the thick blubber layer they will need to survive through the winter months, when the anadromous fish runs end and prey move to deeper, offshore regions (Hobbs et al. 2005).

3. CIBW feeding habitat

CIBW are frequently seen aggregating near the mouths of rivers and streams, when anadromous fish species are present and often at their peak availability (Moore et al. 2000; Table 4). These concentrations of belugas within discrete areas of the upper Inlet and offshore of several important salmon streams are assumed to be the result of a feeding strategy that takes advantage of the bathymetry of the area: the fish are funneled into the channels formed by the river mouths and the shallow waters act as a gauntlet for fish as they move past waiting belugas. Hazard (1988) hypothesized that belugas were more successful feeding in rivers where prey were concentrated than in bays where prey were dispersed, implying that CIBW seek areas where anadromous prey escapement (return to natal rivers) numbers are high, but also areas that have certain habitat features. Research by Frost et al. (1983) on beluga whales in Bristol Bay suggested those whales preferred certain streams for feeding based on the configuration of the stream channel. Their study theorized beluga whales' feeding efficiencies improved in relatively shallow channels where fish were confined or concentrated. Because beluga whales do not always feed at the streams with the largest runs of fish, bathymetry and fish density may be more important than sheer numbers of fish in their feeding success. For example, CIBW today are seen less frequently at the mouth of the Kenai River than they were historically, despite large salmon returns to the river. This may also be due to preference for particular species, for example, a preference for oily coho salmon over much less oily sockeye salmon.

Table 4. Approximate timing of the presence (gray shading) and peak availability (black shading) of fish species entering fresh water drainages in Upper Cook Inlet (Moore et al. 2000).

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Chinook												
Sockeye												
Chum												
Pink												
Coho												
Steelhead												
Dolly Varden												
Euchalon												

Habitat use in the summer months consists of semi-predictable diurnal (daily) movements of groups of beluga whales between river mouths and shallow tidal flats in the upper Inlet. These movements are largely cued to physical conditions, especially tide, but may also be influenced by anthropogenic activities. Traditional ecological knowledge indicates that daily movements are determined by the ebb and flow of the tide and the related movements and size of fish runs, and also by the presence of killer whales (Huntington 2000). For example, whales often concentrate on the shallow mudflats of the Susitna River Delta and Chickaloon Bay at low tide, and enter many of the upper Inlet rivers on the flooding tide, although the reverse tidal pattern has been observed in Eagle River in Knik Arm (McGuire et al. 2014, Funk et al. 2005). Observational studies (Funk et al. 2005, Markowitz and McGuire 2007) and ocean circulation and inundation models, combined with tracks from tagged individual whales (Ezer et al. 2008), confirm long-held local knowledge that daily feeding movements are influenced greatly by tidal cycle.

In the fall, as anadromous fish runs begin to decline, belugas again return to consume the fish species found in nearshore bays and estuaries. Habitat associations of nonanadromous beluga prey species in Cook Inlet include preferences for sand and mud substrates (Cohen et al. 1990, Eschmeyer et al. 1983,) and a number of these species move seasonally from shallow to deep water. Movements of belugas within the Inlet during the months when anadromous fish runs are not present may reflect the seasonal movements of these other prey species. The prey available in winter do not tend to form large concentrations, and it may be that belugas tend to disperse throughout the upper Inlet during November through April, to utilize the more-dispersed prey (Hobbs et al. 2005). In the winter, CIBW use deeper waters in the mid Inlet past Kalgin Island

and make deep feeding dives. The presence of Kalgin Island south of the Forelands may create upwelling and eddies which concentrate nutrients and provides a still-water refuge area for migrating anadromous fishes (Calkins 1983, 1989). This area may be a late-winter staging area for Pacific eulachon before they return to streams in the upper Inlet. Given the unique oceanographic conditions and the diversity of fish and crustaceans found near Kalgin Island, this area may be rich in biological productivity, and thus an important winter feeding habitat for belugas. Passive acoustic monitoring of beluga whales in Cook Inlet was recently conducted (Lammers et al. 2013) and is beginning to provide important information about distribution of CIBW during the winter months.

Goetz et al. (2007, 2012a) used geographic information systems (GIS) to develop quantitative models of the summer habitat preferences of the CIBW population. Habitat models were used to examine ecological relationships among belugas and several environmental variables. Parameters used in the models were based on June/July beluga sightings (1993–2004) relative to available environmental data: 1) bathymetry; 2) mudflats; and 3) flow rates among freshwater tributaries entering Cook Inlet. The two quantitative models predicted similar size and location of beluga habitat and identified mudflats and river size as important environmental features. Belugas are found near mudflats and prefer medium and high flow accumulation areas (i.e., medium to large river basins). Although sighting data in this study were collected primarily in June, other aerial surveys (Rugh et al. 2000, 2004), shore-based systematic and opportunistic observations (Funk et al. 2005; NMFS, Vate-Brattstrom et al. 2010), boat-based photo-id surveys (McGuire and Bourdon 2012), and whales tagged with satellite transmitters (Hobbs et al. 2005) show that the distribution documented in June is representative of the distribution throughout the ice-free months; Knik Arm, Turnagain Arm, Chickaloon River, and the Susitna River Delta are used extensively. In fact, belugas occasionally access these preferred habitats in winter despite thick ice cover (Hobbs et al. 2005). Tidal movement corridors are also important to Cook Inlet belugas, as beluga movements with the tides may occur up to twice daily and allow or limit access to feeding areas (Hobbs et al. 2005, Funk et al. 2005, Markowitz and McGuire 2007). Access to these areas and to corridors between these areas is important for obtaining prey.

Additional analyses by Goetz et al. (2012a) concluded that belugas were found in areas of high fish availability and access to tidal flats and sandy substrates, and that belugas were negatively associated with anthropogenic disturbance. These habitat models predicted that beluga distribution would include coastal areas extending nearly the entire length of Cook Inlet (Goetz et al. 2007), and, in fact, historically belugas inhabited large parts of the Inlet, including its central and southern reaches (Rugh et al. 2000). However, since 1993, when NMFS began systematic documentation of the distribution, beluga sightings have been rare (0–4% of all reported sightings per year) in areas south of the Forelands (Figure 2), and almost all sightings have been in the upper Inlet, from the Susitna Delta to Knik Arm and Chickaloon Bay (Rugh et al. 2000; 2005a, b). A significantly reduced CIBW population (Hobbs et al. 2006), in combination with beluga preference for estuarine waters with the largest concentration of prey species, may explain the current distribution of whales, but data on relative densities of fish by species and season are not available to test this hypothesis.

4. CIBW calving habitat

In addition to being important feeding habitats, the shallow waters of the upper Inlet may also play important roles in reproduction. One hypothesis is that since newborn beluga whales do not have the thick blubber layer of adults, they may benefit from warmer water temperatures in the shallow tidal flats areas where fresh water empties into the Inlet, and it is likely these regions are used as nursery areas (Katona et al. 1983; Calkins 1989); however, a comparison of the temperatures of glacially fed freshwaters to seawater has not been conducted. These shallow areas may also provide refuge from killer whale predation on calves. The TEK of Alaska Natives has described historical beluga calving and nursery habitats as the northern side of Kachemak Bay, the mouths of the Beluga and Susitna Rivers, as well as Chickaloon Bay and Turnagain Arm (Huntington 2000). Knik Arm is also used extensively in the late summer and fall by cow/calf pairs: Funk et al. (2005) noted a relatively high representation of calves in the uppermost part of Knik Arm; the mouth of Knik Arm has been reported to be transited in the summer and fall by cow/calf pairs (Cornick and Kendall 2008a); and groups seen in Eagle Bay usually contain calves (McGuire and Bourdon 2012).

Because calving events have not been documented in Cook Inlet, specific calving grounds have not been identified, although it seems likely that the areas identified as nursery areas might also serve as calving grounds. Based on the presence of calves sighted in summer aerial surveys, Calkins (1983) speculated that calving might occur in the larger estuaries of upper western Cook Inlet. During boat-based surveys for calves conducted in 2007–2011, the first neonates of the season were seen at the Susitna River Delta (McGuire and Bourdon 2012), although later in the season, groups seen in Knik Arm were more likely than groups in other areas to contain neonates. However, distinct areas for neonate and calf rearing were not identified, as calves and neonates were seen in all locations surveyed in Upper Cook Inlet (the Susitna River Delta, Knik Arm, Chickaloon Bay/Southeast Fire Island, and Turnagain Arm). Surveys of the lower Kenai River and its delta were conducted in 2011 and 2012, and groups seen there also contained calves and neonates (McGuire et al. 2014).

5. Other uses of habitat

Other important uses of habitat by CIBW may include avoidance/escape from predators, transiting among feeding and/or nursery habitats, refuge from human activities (e.g., in-water noise, ship traffic, hunting), and molting (NMFS 2008a). The shallower waters of Turnagain Arm may be important habitat for predator avoidance from killer whales (Shelden et al. 2003; 76 FR 20180).

In the 2008 Conservation Plan (NMFS 2008a), NMFS states that warmer, fresher coastal waters may be important areas for belugas' seasonal summer molt and that shallow waters may provide conditions necessary to help facilitate the shedding of dead skin and regeneration of epidermal layers. However, ten years of photographic records of over 312 individual CIBW whales photographed April–November do not display signs of obvious molting (McGuire et al. 2014); it may be that molting in CIBW is a more diffuse, gradual process than it is for those beluga stocks found in more northern latitudes and that habitat specifically for seasonal molting is not required.

F. CIBW Critical Habitat

In April 2011, NMFS designated critical habitat for CIBW (NMFS 2011). The Windy Corner Project Action Area is located within CIBW critical habitat. In designating the critical habitat, NMFS had to consider physical and biological features essential to the conservation of the species and that may require special management. These features may include: 1) space for individual and population growth, and for normal behavior; 2) food, water, air, light, minerals, or other nutritional or physiological requirements; 3) cover or shelter; 4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally 5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of the species. The critical habitat is defined in terms of essential physical and biological features, which are the primary constituent elements (PCE) of the critical habitat. Based on the best scientific data available of the ecology and natural history of CIBW and their conservation needs, NMFS determined the following physical or biological features (PCEs) are essential to the conservation of this species:

1. Intertidal and subtidal waters of Cook Inlet with depths less than 30 feet (9.1 m; MLLW) and within 5 miles (8 km) of high and medium flow anadromous fish streams;
2. Primary prey species consisting of four species of Pacific salmon (Chinook, sockeye, chum, and coho), Pacific eulachon, Pacific cod, walleye pollock, saffron cod, and yellowfin sole;
3. Waters free of toxins or other agents of a type and amount harmful to CIBW;
4. Unrestricted passage within or between the critical habitat areas; and
5. Waters with in-water noise below levels resulting in the abandonment of critical habitat areas by CIBW.

In the designation, NMFS identified two specific marine areas in Cook Inlet, Alaska as containing one or more of the essential features (Figure 19). These areas, totaling 3,013 mi^2 (7,800 km^2) are bounded on the upland by Mean High Water (MHW) datum, except for the lower reaches of specific tributary rivers. Critical habitat does not extend into the tidally influenced channels of tributary waters of Cook Inlet, with the exceptions noted in the descriptions of each critical habitat area. Critical Habitat Area 1 includes all marine waters of Cook Inlet north of a line from the mouth of Threemile Creek (61°08.5′ N., 151°04.4′ W.) connecting to Point Possession (61°02.1′ N., 150°24.3′ W.), including waters of the Susitna River south of 61°20.0′ N., the Little Susitna River south of 61°18.0′ N., and the Chickaloon River north of 60°53.0′ N. Critical Habitat Area 2 includes all marine waters of Cook Inlet south of a line from the mouth of Threemile Creek (61°08.5′ N., 151°04.4′ W.) to Point Possession (61°02.1′ N., 150°24.3′ W.) and north of 60°15.0′N., including waters within 2 nautical miles seaward of MHW along the western shoreline of Cook Inlet between 60°15.0′ N. and the mouth of the Douglas River (59°04.0′ N., 153°46.0′ W.); all waters of Kachemak Bay east of 151°40.0′ W.; and waters of the Kenai River below the Warren Ames bridge at Kenai, Alaska. Two areas were excluded from the critical habitat designation given their interest to national security: 1) all property and overlying waters of Joint Base Elmendorf-Richardson between Mean Higher High Water (MHHW) and MHW, and 2) all waters off the Port of Anchorage which are east of a line connecting Cairn Point (61°15.4’ N., 149°52.8’ W.) and Point MacKenzie (61°14.3’ N., 149°59.2’ W.) and north of a line connecting Point MacKenzie and the north bank of the mouth

of Ship Creek (61°13.6' N., 149°53.8' W.). The Windy Corner Project Action Area is located in CIBW Critical Habitat Area 1.

The NMFS Conservation Plan for CIBW (NMFS 2008a) states the following about **Type 1 Habitat (now called Critical Habitat Area 1):** *This area is full of shallow tidal flats, river mouths or estuarine areas, and is important as foraging and calving habitats. Many rivers in Type 1 habitat have large eulachon and salmon runs. These shallow areas may also provide for other biological needs, such as escape from predators. This area has the highest concentrations of belugas from spring through fall as well as greatest potential for impact from anthropogenic threats. For these reasons, Type 1 habitat is considered the most valuable habitat type. Belugas are particularly vulnerable to impacts in Type 1 habitat due to their concentrated use and the biological importance of these areas. Because of their intensive use of this area (e.g., foraging, nursery, predator avoidance), activities that restrict or deter access to Type 1 habitat could reduce beluga calving success, impair their ability to secure prey, and increase their susceptibility to predation by killer whales. Projects that reduce anadromous fish runs could also negatively impact beluga foraging success during this time. Furthermore, the tendency for belugas to occur in high concentrations in Type 1 habitat predisposes them to harm from such events as oil spills.*

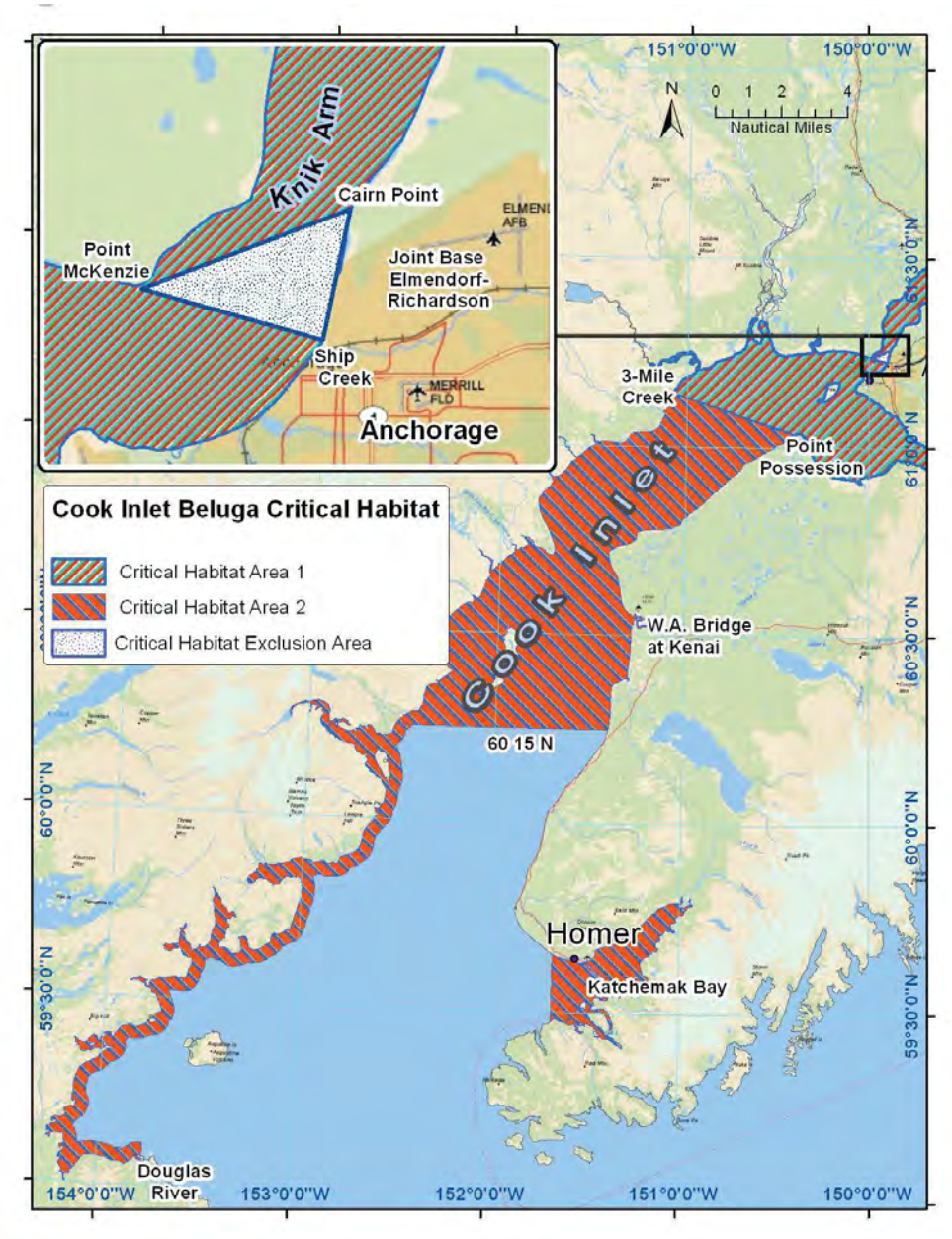


Figure 19: Map of Cook Inlet Beluga Critical Habitat (NMFS 2011).

The following primary constituent elements (PCEs) of CIBW critical habitat are present in the Windy Corner Project Action Area:

PCE 1 consists of intertidal and subtidal waters of Cook Inlet with bottom depths less than 30 ft (9.1 m; MLLW) and within 5 mi (8 km) of high- and medium-flow accumulation anadromous

fish streams. There are nine anadromous rivers or creeks that discharge within 5 miles of the Windy Corner Project Action Area (Table 5; Figure 20), although none of them are within it. Shallow intertidal and subtidal waters within 5 mi (8 km) of these creeks and rivers make up PCE 1 within the action area. Goetz et al. (2007) indicate that the portion of Turnagain Arm containing the Windy Corner Project Action Area contains habitat defined as PCE 1.

Table 5. List of anadromous rivers or streams in or within 5 mi (8 km) of the Windy Corner Project Action Area.

Name of creek or river	ADF&G anadromous stream no.
Indian Creek	247-60-10290
Bear Creek	247-60-10160
Porcupine Creek	247-60-10140
Cripple Creek	247-60-10150-2008
unnamed	247-60-10160-2008
Penguin Creek	247-60-10280-2008
Resurrection Creek	247-60-10150
Bird Creek	247-60-10280
unnamed	247-60-10278

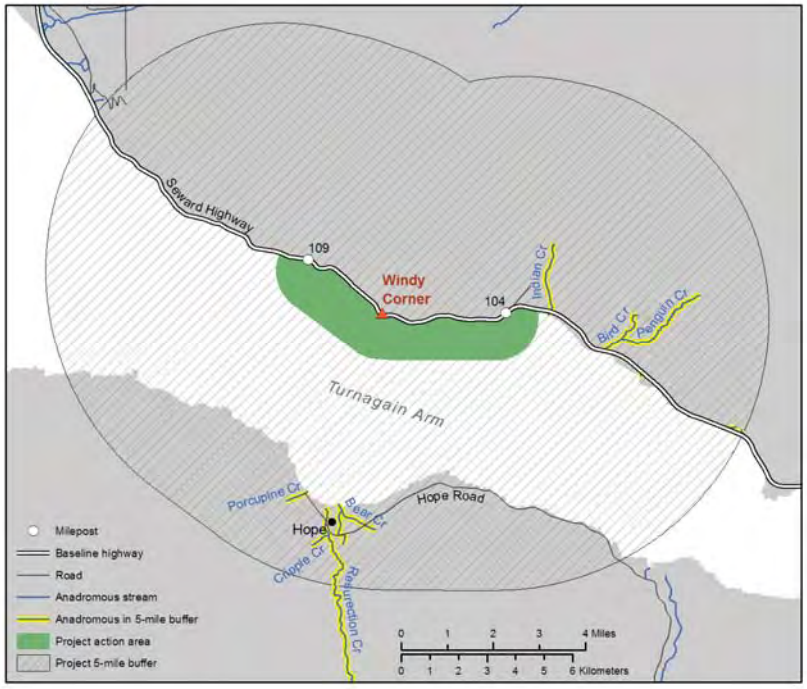


Figure 20: Anadromous streams and rivers within 5 mi (8km) of the Windy Corner Project Action Area.

PCE 2 consists of the following primary prey species for CIBW: Chinook, sockeye, chum, and coho salmon; Pacific eulachon; Pacific cod; walleye pollock; saffron cod; and yellow fin sole. All four species of Pacific salmon (Chinook, sockeye, coho, chum) and Pacific eulachon listed under PCE 2s have the potential be found within the action area as they migrate to anadromous tributaries in Turnagain Arm, therefore PCE 2 exists in the Windy Corner Project Action Area. In addition, the late juvenile and mature stages of Pacific cod and walleye Pollock may be found here.

G. PCE 2 and Overlap with Essential Fish Habitat (EFH)

In 1996, the Sustainable Fisheries Act amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to require the description and identification of EFH in fishery management plans, the identification of adverse impacts on essential fish habitat, and actions to conserve and enhance such habitats. EFH includes those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. NMFS classifies all of Cook Inlet as EFH for all five Pacific salmon species (Chinook, chum, coho, sockeye, and pink salmon), including the marine juvenile, marine immature, and maturing adults stages of each of these species. The Windy Corner Project Action Area does not contain freshwater EFH for salmon but does contain marine EFH by virtue of occurring in Cook Inlet. Therefore, with respect to Chinook, chum, coho, and sockeye, PCE2 and EFH overlap in the Windy Corner Project Action Area. Turnagain Arm provides EFH, for all five stocks of Pacific salmon: Chinook, coho, sockeye, chum and pink, in addition to Dolly Varden. Turnagain Arm may also

provide EFH for Gulf of Alaska groundfish species. Adult fish use Turnagain Arm as a primary migratory route, returning to spawning streams, such as Rabbit Creek, Potter Creek, Indian Creek, and Bird Creek. A query using the Alaska GIS mapping tool (http://www.habitat.noaa.gov/protection/efh/habitatmapper.html) on the EFH website for the NMFS Alaska Regional Office indicated no EFH habitats of particular concern were identified at the location, nor were any EFH Areas protected from fishing.

PCE 3 is the absence of toxins or other agents of a type or amount harmful to beluga whales. The Alaska Department of Environmental Conservation has designated Upper Cook Inlet as a Category 3 area within the Clean Water Act Section 303(d). This categorization is due to insufficient information available to determine water quality (ADEC 2010). There are several sources of toxins and contaminants in Cook Inlet waters, including storm water runoff, wastewater treatment facilities, oil and gas activities, aircraft deicing activities, and military training (Moore et al. 2000; NMFS 2008a). Specific activities in Turnagain Arm include discharge from the Girdwood Waste Water Treatment Facility and runoff from the Seward Highway. There is insufficient information to evaluate the presence of PCE3 in the Windy Corner Project Action Area. There is currently nothing to indicate that the waters of the Project Action Area contain or have contained toxins of an amount or type deemed harmful to CIBW.

PCE 4 is unrestricted passage within or between critical habitat areas. The Windy Corner Project Action Area currently has unrestricted passage within or between the critical habitat areas, therefore it contains PCE 4.

PCE 5 is the absence of in-water noise at levels resulting in the abandonment of habitat by CIBW. Anthropogenic underwater noise (Section IV) in the Windy Corner Project Action Area is primarily from road traffic, aircraft overflights, trains, and the rare vessel navigating Turnagain Arm. Beluga whales use Turnagain Arm and the Windy Corner Project Action Area (see below). Under baseline conditions, there is no indication that ambient noise levels in the action area have caused CIBW to abandon or avoid this habitat, therefore PCE 5 exists in the Windy Corner Project Action Area. See Appendix 1 for ambient underwater sound levels at Windy Corner in August 2014.

H. CIBW Use of Turnagain Arm and the Windy Corner Project Action Area: Seasonal Patterns

The Conservation Plan for CIBW (NMFS 2008a) states that "belugas visit Turnagain Arm in early spring traveling up to 20-Mile River and Placer Creeks, indicating the importance of Pacific eulachon runs for beluga feeding. Beluga use of upper Turnagain Arm decreases in the summer and then increases again in August through the fall, coinciding with the coho salmon run."

1. Information from aerial surveys

Aerial surveys conducted by NMFS in June/July 1978–1979 detected CIBW in only the very lowest part of the Arm (i.e., nearest Anchorage), west of the Windy Corner Project Action Area. Continuation of these surveys in 1993–2007 detected CIBW throughout Turnagain Arm (Rugh et al. 2010), as did many of the surveys conducted in June and August of 2009–2012 (Shelden et al.

2012, 2011, 2010a,b, 2009a, 2009b). Surveys in 2008 were conducted in June, August, Sept, and Oct (Shelden et al. 2008a,b); belugas were seen in Turnagain Arm in all of these months except October. NMFS did not conduct aerial surveys in 2013, and results from 2014 have not yet been made available.

2. Information from satellite tags

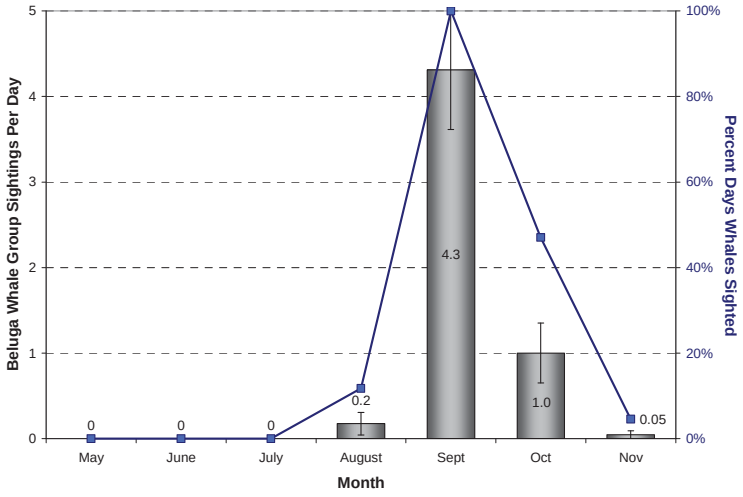
Of the 15 belugas tracked with satellite transmitters between May 1999 and March 2003, nine whales logged movements into December and four in to the following March (Hobbs et al. 2005). Tagged individuals spent the summer and early autumn months in the upper Inlet, concentrating at river mouths, and often made weekly movements between the mouth of the Little Susitna River, Knik Arm, Turnagain Arm and Chickaloon Bay. Tagged whales ranged over a greater part of the inlet during the winter months. Tagged whales were detected in Turnagain Arm in August, September, October, November, December, January, February, and March (data not available for April-July).

3. Information from land-based surveys for DOT&PF

A monitoring program along the Seward Highway was conducted in 2006 by LGL for HDR on behalf of the DOT&PF to document the presence, habitat use, and behavior of CIBW in Turnagain Arm, with emphasis on milepost 75-90 and milepost 99-115 (Markowitz et al. 2007).

The objective of this monitoring program was to provide baseline data on CIBW use of the Turnagain Arm prior to improvements to the Seward Highway. Shore-based visual monitoring was conducted in Upper Turnagain Arm (Bird Point to Placer River) May 8–Nov 20 and Sept 23–Nov 25 in Lower Turnagain Arm (Potter Creek to Bird Point). Surveys were conducted by a land-based observer who traveled between observation stations by car, up the Arm with the incoming tide, then back down with the outgoing tide. Observers noted location, group size, color/age class composition, direction of travel, distance from shore, and behavior of all CIBW encountered. Monitoring was conducted for a total of 748 hours on 136 days. CIBW were not seen in Upper or Lower Turnagain Arm in May, June, or July. Beluga sighting rates in Upper Turnagain Arm peaked in September, with most sightings occurring between late August and early November (Figures 21 and 22). CIBW were only sighted in Lower Turnagain Arm on two days in September, and occurred in the Windy Corner Project Action Area on both days.

a. Mean number of beluga whale group sightings per day compared by month.



b. Number of beluga whale group sightings per day.

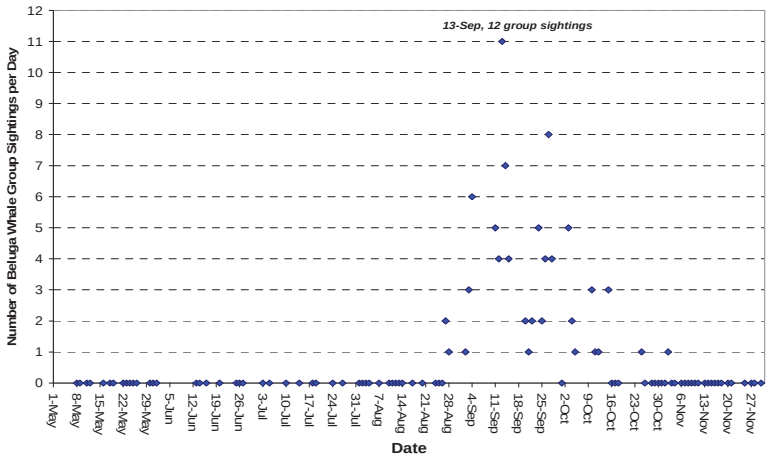
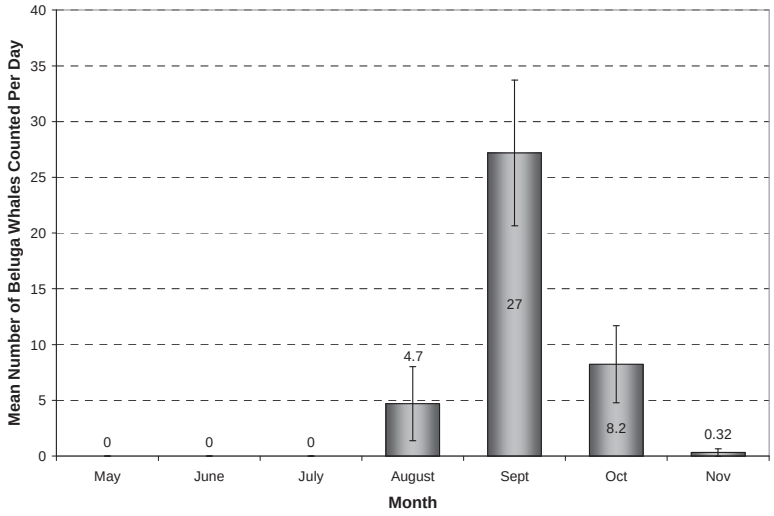


Figure 21: Sighting rates of beluga whale groups in Upper Turnagain Arm along the Seward Highway are compared (a) by month (mean values with standard errors) and (b) by day (from Markowitz et al. 2007).

a. Mean number of beluga whales counted per day compared by month.



b. Total number of beluga whales counted per day.

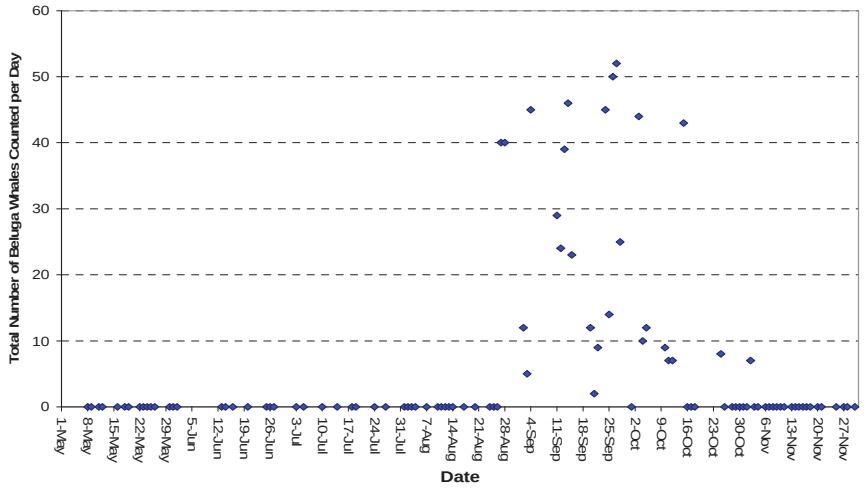


Figure 22: The number of beluga whales observed in Upper Turnagain Arm are compared (a) by month (mean values with standard errors) and (b) by day (from Markowitz et al. 2007).

The average group seen along Turnagain Arm consisted of 58% white animals, 17% gray animals, 8% calves, and 17% whales of unknown color/age class. Group size ranged between 2

and 52 individuals. Neonates (newborns) were sighted and not further differentiated from calves in the counts. Belugas were most often sighted within 328.1 ft (100 m) of shore (detection distance was estimated at 1.9 mi [3 km]), and traveling was the predominant activity observed, although suspected feeding behavior was also seen, as was milling, diving, and resting.

4. Information from land-based surveys for the CIBW Photo-ID Project

LGL's CIBW Photo-id Project conducted 100 land-based surveys along Turnagain Arm 2006–2014 (McGuire et al. 2014, McGuire unpublished data). Survey effort was concentrated in Upper Turnagain Arm, but CIBW encountered in the lower arm were photographed and documented whenever possible. Photographers noted group location, size, color/age class composition, direction of travel, and behavior of all CIBW encountered. Surveys were conducted 2006–2014 between August and October, with greatest effort mid-August through mid-September. CIBW were seen in Turnagain Arm during all months surveyed. Maximum group size was 82 individuals. Groups consisted of white and gray animals, and most groups contained calves. Groups with calves and/or neonates were seen in the same areas of Turnagain Arm as were groups without. Neonates were present in many of the groups. CIBW that were observed in or near (< 3mi [4.8 km], driving distance along the highway) the Windy Corner Project Action Area were seen in August and September of 2011, 2012, 2013, and 2014 (McGuire et al. 2014; Figure 23, 24 and 25).

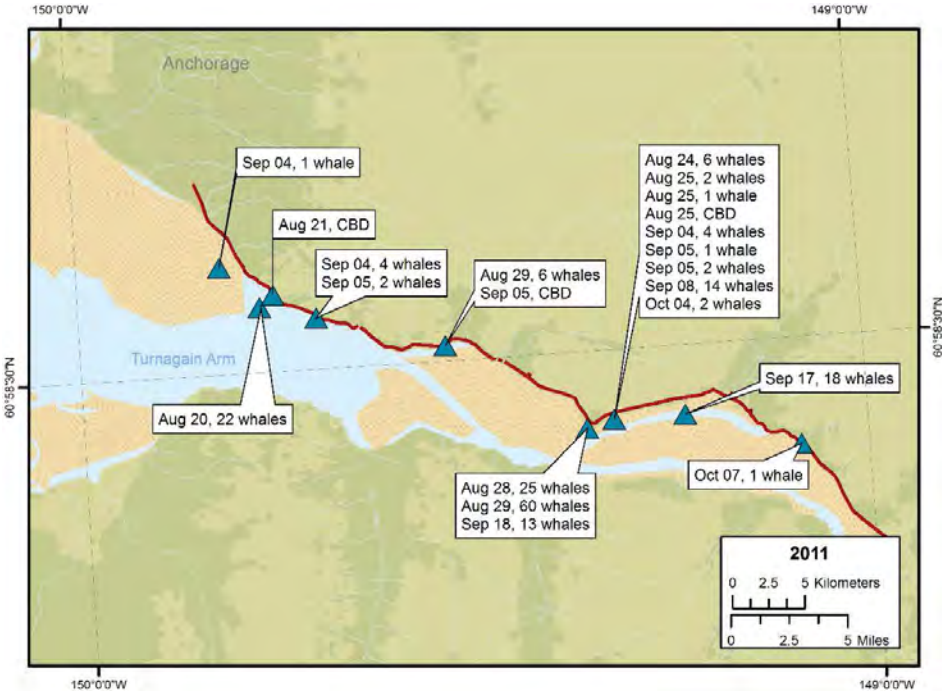


Figure 23: Route and beluga whale group(s) encountered and general survey route of all 2011 land-based surveys along Turnagain Arm, Upper Cook Inlet, Alaska (McGuire et al. 2014).

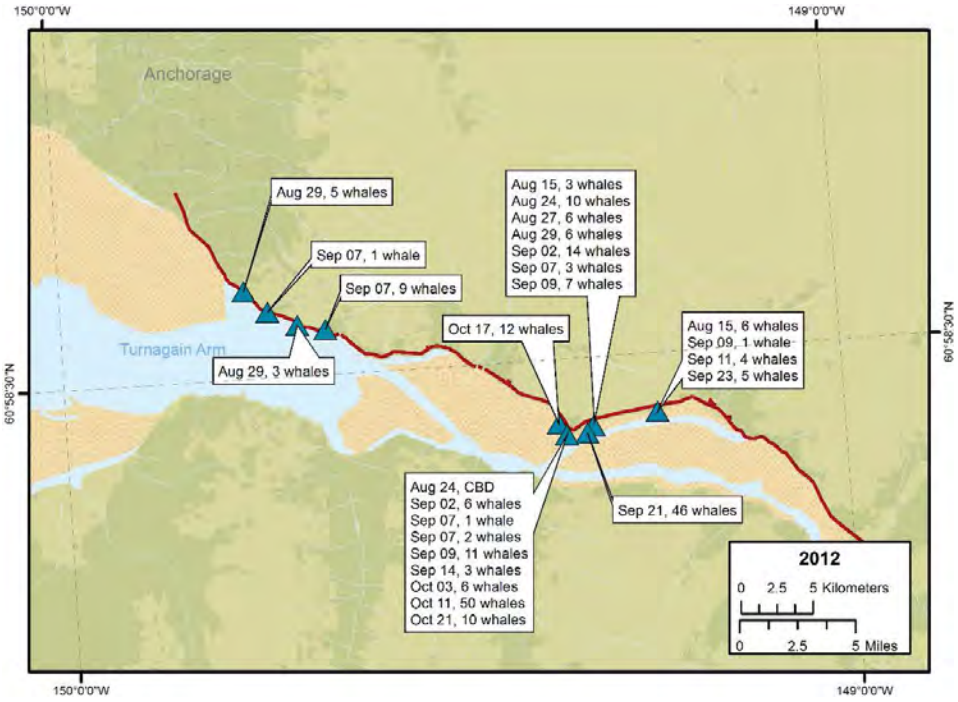


Figure 24: Route and beluga whale group(s) encountered and general survey route of all 2012 land-based surveys along Turnagain Arm, Upper Cook Inlet, Alaska (McGuire et al. 2014).

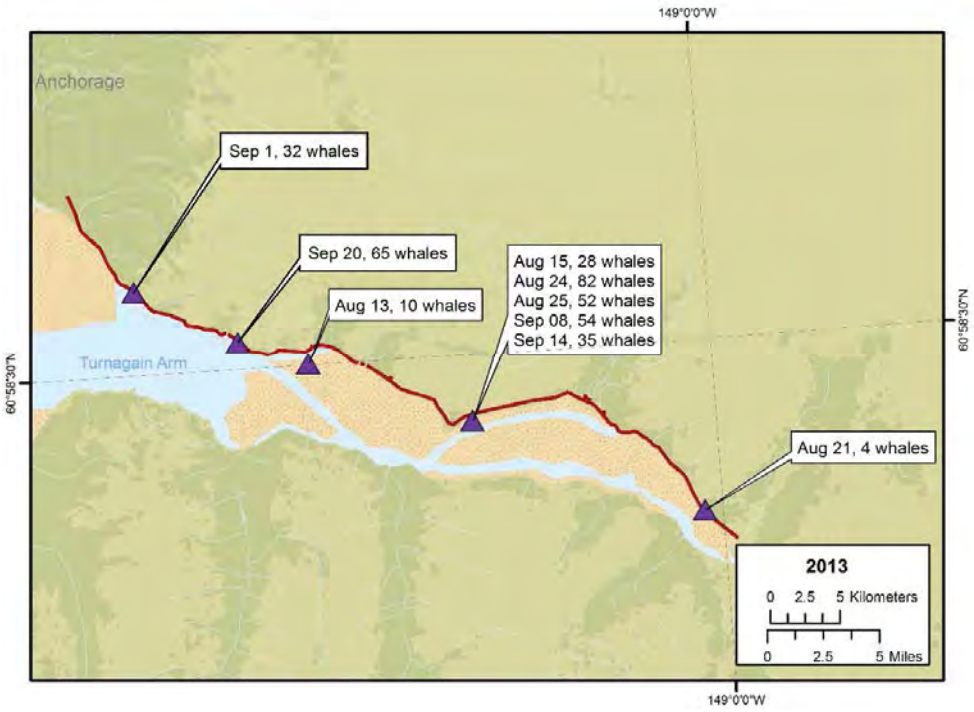


Figure 25: Route and beluga whale group(s) encountered and general survey route of all 2013 land-based surveys along Turnagain Arm, Upper Cook Inlet, Alaska (from McGuire et al. 2014).

5. Information from traditional ecological knowledge (TEK)

TEK reports that CIBW travel to the upper end of Turnagain Arm, in response to the Pacific eulachon ("hooligan") in May and the coho ("silver") salmon in the fall (Huntington 2000).

6. Information from LGL incidental observations

Incidental beluga sighting reports were collected by the CIBW Photo-ID Project from the public and colleagues via email, phone calls, and conversations in the field. The CIBW Photo-id project website (www.cookinletbelugas.org) contains a page for members of the public to report beluga sightings, and the website address was distributed via the project bumper sticker and project pamphlets. Project pamphlets and bumper stickers were distributed to community centers, visitor's centers, cafés, docks and boat launches, RV parks and lodges, during classroom and conference presentations, and to users/visitors encountered along Turnagain Arm and elsewhere in Upper Cook Inlet. Incidental beluga sighting reports were entered in the project database and shared with NMFS. Over 500 incidental reports of CIBW were received by LGL 2006–2014 with the number of reports increasing every year (the increase is likely the result of increased outreach efforts). Sightings were reported by fisherpeople, pilots, the media, law enforcement officers, large vessel operators, tourists, biologists, educators, environmentalists, and oil company employees. Seasonal patterns in sightings were consistent across years; CIBW were reported in Turnagain Arm in the spring and fall (Table 6).

Table 6. Summary of incidental sightings reports to LGL's CIBW Photo-id Project of CIBW in Turnagain Arm, (McGuire et al. 2014, McGuire unpublished data). B and shading indicate CIBW sighting reported.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	*Incidental sighting reported 2006–2014?*
Month										
January										*no*
February										*no*
March									B	*yes*
April		B			B	B	B	B	B	*yes*
May		B			B	B	B	B		*yes*
June						B	B			*yes*
July										*no*
August	B	B	B	B	B	B	B	B	B	*yes*
September	B	B	B	B	B	B	B	B	B	*yes*
October	B							B	B	*yes*
November										*no*
December									B	*yes*

7. Information from NMML observational sighting database

NMFS maintains a database of over 1,500 opportunistic sighting of CIBWs reported since 1975. These records show that CIBW have been seen in the Windy Corner Project Action Area during all seasons of the year over the last four decades (Vate-Brattstrom et al. 2010). During the preparation of this BA for the Windy Corner Project, NMFS provided detailed records of 167 opportunistic sightings of CIBW in Turnagain Arm 1979–2013. CIBW were seen in Turnagain Arm in all months of the year except December. There were 117 observational sightings of

CIBW in Lower Turnagain Arm (between South Anchorage and Bird Point); these sightings occurred in all months except February, November, and December. Most of the Lower Cook Inlet sightings occurred in August and September, with a smaller peak in April, May, and June. CIBW were reported twice in July, once traveling up the Arm, and once at the mouth of the Resurrection River, reportedly feeding on a run of pink salmon; these observations are the only available records from any source of CIBW in Turnagain Arm in July.

8. Information from Anchorage Coastal Beluga Survey (ACBS)

The Friends of the Anchorage Coastal Wildlife Refuge (FAR) led the Anchorage Coastal Beluga Survey (ACBS). Trained volunteer citizen scientists with the project conducted land-based visual surveys for CIBW at Windy Corner in 2010 and 2011 (Svarny Carlson and Brunner 2012). In 2010, Windy Corner surveys were conducted in September and October for a total of 18 days. Ten CIBWs, including one calf, were seen on October 13, 2010 during high tide. In 2011, Windy Corner surveys were conducted in May, and August, for a total of 22 days. CIBW were not seen at Windy Corner in May. A group of four whales (including one calf) was seen at Windy Corner on Aug 30, 2011 during high tide. FAR also reported a group of three CIBW at Windy Corner on September 11, 2011 (time/tidal stage not reported). Observers noted that the frequently high winds encountered at Windy Corner produced whitecaps that often made it difficult to determine if belugas were present.

9. CIBW use of Turnagain Arm and Windy Corner Project Action Area: tidal patterns

Tidal stage has not always been described in the same terms by various research and monitoring projects in Cook Inlet. In this document, tidal stage has been defined using the following method, regardless of how it was described by the original observer or study: the date and the time of day of the initial beluga sighting at Windy Corner was referenced to the tidal stage for Anchorage Alaska in the program J-tides (www.arachnoid.com/JTides). These times were then offset by 30 minutes to allow for the delay between Anchorage and Windy Corner, verified by the tide tables for Sunrise, Alaska, the closest location to Windy Corner for which tide tables are available (www.tides.info). The tide chart in J-tides provides a continuous height throughout a 24-hr period, while the tide table only provides water depths at the time of high and low tide. For classification purposes, the tidal cycle was divided into four periods of three hours each (high, low, rising, and falling), although actual tidal stages in Cook Inlet are of varying length depending on the date and the lunar cycle. Sighting times for belugas were then assigned to one of the four tidal stages.

10. Information from land-based surveys for DOT&PF

CIBW groups were most often seen moving up Turnagain Arm (from west to east) with the rising tide, and down the Arm (from east to west) with the falling tide. Because much of Turnagain Arm dewaters during low tide, it must be assumed that any CIBW observed in Upper Turnagain Arm during high tide had to first pass through Lower Turnagain Arm and were simply not detected by the shore-based observer in the lower arm, perhaps because whales in the lower arm were spread out over a larger area, were found along the south shore of the arm, or moved through this area at a less-predictable time with respect to the tide. The CIBW sightings closest to the Windy Corner Project Action Area occurred 4.8 and 2.9 hours after high tide (i.e., low and

falling, respectively), which suggested to the report authors that CIBW may have been more likely to occur along this section of the Seward Highway closer to mid-to-low tide periods, rather than mid-to-high tide periods, when they were seen in the Upper Arm (Markowitz et al. 2007). Monitoring shifts in Lower Turnagain Arm were scheduled around the mid-to-high tides, with each shift approx. 5.5 hours long. This coverage of the tidal cycle by the study team indicates that the observed CIBW presence in Lower Turnagain Arm during the mid-to-low tide period was not simply an artifact of the sampling schedule.

11. Information from land-based surveys for the CIBW Photo-id Project

CIBW observed in or near (< 3mi [4.8 km], driving distance along the highway) the Windy Corner Project Action Area were seen in August and September of 2011, 2012, 2013, and 2014 (McGuire et al. 2014, McGuire unpublished data), and were seen during high, rising, and falling tides (Table 7).

Table 7. Tidal stages of observations of CIBW seen < 3mi (4.8 km) of Windy Corner, Turnagain Arm during CIBW Photo-ID Project surveys (McGuire et al. 2014, McGuire unpublished data).

Year	Date	Time of first beluga detection at Windy Corner	Tidal stage
2011	Aug 29	21:00	High
2011	Sept 4	10:51	Rising
2011	Sept 5	11:45	Rising
2011	Sept 5	14:48	High
2012	Sept 7	15:40	Falling
2013	Aug 13	16:24	Falling
2013	Sept 20	11:40	Falling
2014	Sept 08	13:10	High
2014	Sept 12	11:44	High

12. Information from visual monitoring during Greeneridge /DOT&PF acoustic ambient recording

During a site-selection survey for a study of ambient underwater sounds levels at Windy Corner, two belugas were sighted and photographed at Windy Corner on Aug 17, 2014 at 08:37 (low tide), approximately 820.2 ft (250 m) from shore (Burgess 2014, McGuire unpublished data). Visual observers monitored all tidal stages at Windy Corner on Aug 18, 2014, but CIBW were not observed.

13. Information from LGL incidental observations

Although incidental beluga sighting reports were collected by the LGL CIBW Photo-ID Project from the public and colleagues, only reports received from LGL employees, former LGL employees, or from members of the public who referenced a highway milepost marker are included in the summary table (below), in order to maintain a high level of confidence in the accuracy of the sighting location reported (e.g., visitors often confuse Beluga Point, Windy Point, and Bird Point when describing a location along the Seward Highway). Belugas were seen in the Windy Project Action Area during all tidal stages, and could be seen with calves (Figure 26).

Table 8. Incidental sightings of CIBW seen < 3 mi (4.8 km) of Windy Corner in the Windy Corner Project Action Area, as reported to LGL (McGuire et al. 2014, McGuire unpublished data).

Year	Date	Time of first beluga detection at Windy Corner	Tidal stage
2007	Aug 24	16:40	falling
2007	Aug 25	12:30	low
2008	Sept 5	11:30	high
2008	Sept 4	16:30	low
2010	Sept 3	18:40	falling
2011	Aug 28	10:00	falling
2011	Sept 18	09:00	rising
2012	June 22	19:30	low
2013	Sept 1	16:33	rising
2014	Sept 21	11:22	falling



Figure 26: Mother and calf CIBW seen at Windy Corner on September 21, 2014 during the falling tide.
(Photo credit: Amber Stephens, LGL Alaska Research Associates, Inc.)

14. Information from Anchorage Coastal Beluga Survey (ACBS)

CIBW seen at Windy Corner by ACBS observers during scheduled shifts were only seen during high tide (Svarny Carlson and Brunner 2012), although it should be noted that monitoring at this site was only conducted during high tide. The tidal stage/time of a single incidental beluga sighting at this location was not reported.

I. Summary of Seasonal and Tidal Occurrence of CIBW in Turnagain Arm and the Windy Corner Project Action Area

1. Seasonal

Although CIBW can be found in Turnagain Arm throughout the year, land-based observations indicate that they were most prevalent in spring and fall. There are few records of sightings in July, despite survey effort occurring during this time. Group size was largest mid-August through mid-September, although large groups (50 or more) have been seen into October (McGuire unpublished data). Table 9 summarizes the records of seasonal sightings of CIBW in Turnagain Arm.

Table 9. Summary of seasonal pattern of CIBW occurrence in Turnagain Arm.

ndc=no data collection, yes=CIBW sighted; no=CIBW not sighted.

Data source	Aerial surveys 1978-2012	Satellite tagged whales 1999-2003	Land-based surveys for DOT&PF 2006	Land-based photo-id surveys 2006-2014	TEK	NMML Opportunistic Sightings Database	FAR ACBS 2010 2011	Incidentals 2006-2014 to LGL	CIBW detected in Turnagain Arm ?(any method)
January	ndc	yes	ndc	ndc	no	yes	ndc	no	**Yes**
February	ndc	yes	ndc	ndc	no	yes	ndc	no	**Yes**
March	ndc	yes	ndc	ndc	no	yes	ndc	yes	**Yes**
April	ndc	ndc	ndc	ndc	no	yes	ndc	yes	**Yes**
May	ndc	ndc	no	ndc	yes	yes	No	yes	**Yes**
June	yes	ndc	no	ndc	no	yes	ndc	yes	**Yes**
July	no	ndc	no	ndc	no	yes	ndc	no	**Yes**
August	yes	yes	yes	yes	yes	yes	yes	yes	**Yes**
September	yes	yes	yes	yes	yes	yes	yes	yes	**Yes**
October	no	yes	yes	yes	yes	yes	yes	yes	**Yes**
November	ndc	yes	yes	ndc	no	yes	ndc	no	**Yes**
December	ndc	yes	ndc	ndc	no	no	ndc	yes	**Yes**

2. Tidal

Although it has been reported that in the fall beluga whales routinely move into the upper end of Turnagain Arm with the rising tide and are more likely to be found in the lower part of the arm around low tide, CIBW have been seen during all tidal stages in the Windy Corner Project Action Area (Table 10).

Table 10. Summary of tidal pattern of CIBW occurrence in the Windy Corner Project Action Area. ndc=no data collection, yes=CIBW sighted; no=CIBW not sighted.

Data source	Land-based surveys for DOT&PF 2006	Land-based photo-id surveys 2006-2014	LGL monitoring for Greeneridge 2014	FAR ACBS sightings 2010 2011	Incidental observations 2006-2014 to LGL	CIBW detected in Project Action Area? (any method)
Tidal Stage						
Low	yes	no	yes	ndc	yes	**Yes**
Rising	no	yes	no	ndc	yes	**Yes**
High	no	yes	no	yes	yes	**Yes**
Falling	yes	yes	no	ndc	yes	**Yes**

3. Use of habitat

Turnagain Arm is a seasonally important feeding habitat and travel corridor. CIBW of all age-classes have been found traversing the near-shore channels along the highway and foraging at the mouths of rivers and streams and along rocky outcroppings and riprap along the shore (Markowitz et al. 2007, McGuire et al. 2014). Movement and dive depths obtained from tagged CIBW indicate that, compared to elsewhere in Cook Inlet, dives were shorter and transits were slower in Chickaloon Bay, Susitna Delta, Knik Arm, Turnagain Arm, and Trading Bay, suggesting that animals were foraging in these areas (Goetz et al. 2012b). CIBW in Windy Corner have been reported as traveling, milling, and have been suspected be feeding.

IV. ENVIRONMENTAL BASELINE

This section describes the past and present impacts of human actions on CIBW and their critical habitat in the Windy Corner Project Action Area.

A. Environmental Baseline of CIBW in the Windy Corner Project Action Area

1. CIBW abundance and population trend

Inlet-wide abundance estimates for CIBW before the late 1970s do not exist; aerial surveys conducted by the Alaska Department of Fish and Game in the 1960s, 1970s and early 1980s counted CIBW but only a few had sufficient geographic coverage to estimate the population size (Calkins 1984, 1989). A survey in 1979 resulted in an estimate of 1,293 belugas that NMFS used as a reference number to estimate carrying capacity at 1,300 belugas; this estimate is now used for management purposes as the best available estimate of historic CIBW abundance (65 FR 34590, May 31, 2000). Between 1979 and 1994, the CIBW population fell from 1,300 to 650 individuals; the cause of decline during this period has not been identified. In 1993, NMFS began annual aerial surveys of the CIBW population. These surveys occur in early June (except for late July in 1995), include the upper, middle, and lower sections of the Inlet, and are stratified to focus survey effort in the areas of the upper Inlet where belugas are typically found in June. Annual estimates of the numbers of belugas resulting from these surveys documented a decline in abundance, from an estimate of 653 whales in 1994 to 347 whales in 1998. Analysis indicates the decline in abundance was adequately explained by the estimated take from a large unregulated Native subsistence hunt. With the very limited hunt since 1999, NMFS anticipated that the population would begin to increase. The available data at the present time indicate that the CIBW population is not growing as expected and is in fact declining despite the limits on the subsistence hunt (Hobbs et al. 2012). The most recent population estimate released by NMFS was 312 whales in 2012 (Hobbs et al. 2012, Figure 27). NMFS did not conduct aerial surveys in 2013 (Hobbs 2013) and results from the surveys conducted in 2014 have not yet been released. It remains unknown what specific factor, or combination of factors, continues to limit the recovery of this population.

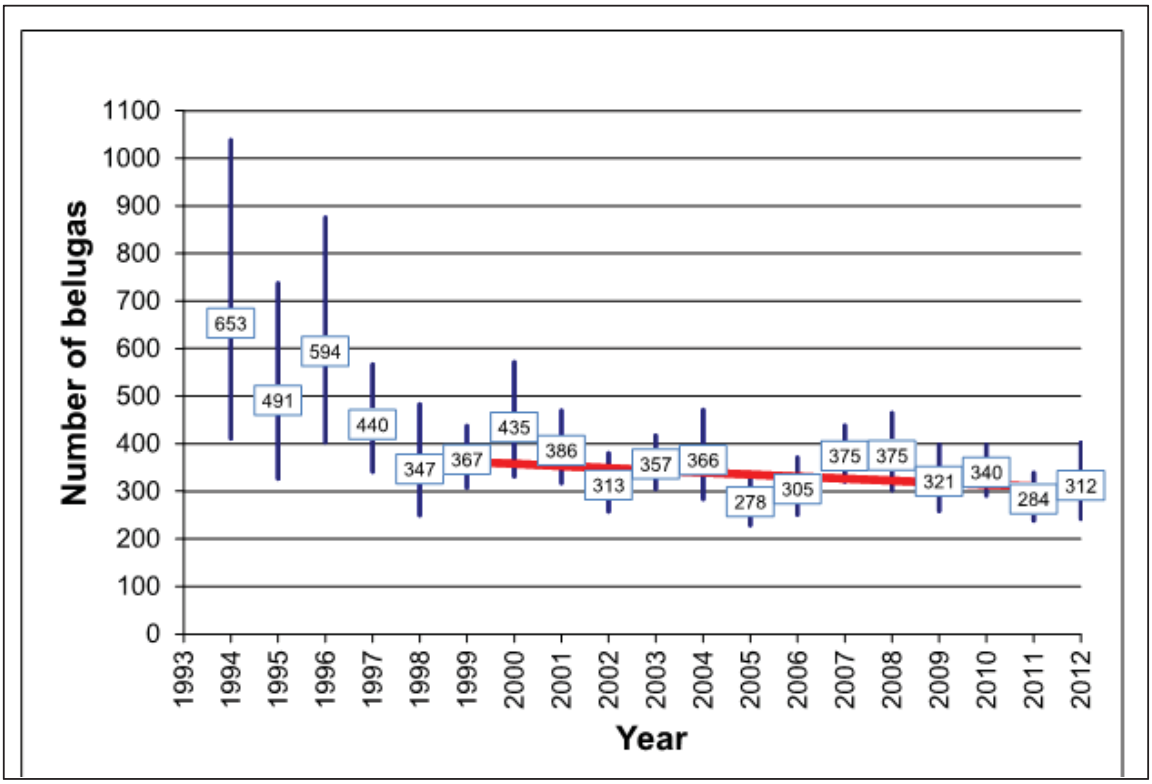


Figure 27: Abundance estimates for CIBW 1994-2012. The vertical bars represent 95% confidence intervals for each estimate. The red line is the trend for the years 1999–2012 (Hobbs et al. 2012).

Turnagain Arm does not have a distinct sub-population of CIBW. Satellite tagging and photo-identification studies of individual CIBW indicate that individual belugas move around Cook Inlet and are not limited to a particular arm or river mouth (Hobbs et al. 2005, McGuire et al. 2014). Individual beluga whales identified in Turnagain Arm have also been seen in the Susitna River Delta, Knik Arm, and the Kenai River Delta (McGuire et al. 2014).

2. Conservation status of CIBW

The population decline of CIBW prompted a number of regulatory actions. In 1998, subsistence harvests were voluntarily reduced to assist with population recovery. The CIBW population was listed as depleted under the Marine Mammal Protection Act (MMPA) in 2000, which required the preparation of a Conservation Plan. In 2008 NMFS finalized the Conservation Plan (NMFS 2008a), which reviewed and assessed the known and possible threats to CIBW and identified specific conservation actions. CIBW were listed as endangered under the ESA in 2008. As a result of the ESA listing, NMFS was required to designate critical habitat and to develop a recovery plan for CIBW. NMFS designated critical habitat in Cook Inlet in 2011 (NMFS 2011) and appointed a CIBW Recovery Team in 2010. The Recovery Team provided a draft Recovery Plan to NMFS in March 2013; a final plan will be released following revision by NMFS and review by the public.

The ESA endangered listing and designation of critical habitat carry consultative requirements under section 7(a)(2) of the ESA. Under this section, all federal agencies are required to consult with NMFS regarding any action they authorize, fund, or carry out to ensure that action does not jeopardize the continued existence of the species or result in the destruction or adverse modification of designated critical habitat, whether or not the species currently uses that habitat. This BA is part of the Section 7 Consultation with NMFS for the Windy Corner Project. Because the CIBW Recovery Plan has not yet been finalized by NMFS, this BA uses the Conservation Plan for the CIBW (NMFS 2008a) as the basis of its discussion of the past and present impacts of human actions on CIBW and its critical habitat in the Windy Corner Project Action Area.

The Conservation Plan for CIBW (NMFS 2008a) classifies factors (also called threats in the Conservation Plan) with the potential to impact CIBW as either "natural" or "human induced". The natural threats include stranding events, predation, parasitism, disease, and environmental change. Human-induced threats include subsistence harvest, poaching, fishing, pollution, vessel traffic, tourism and whale watching, coastal development, noise, oil and gas activities, coastal development (habitat loss), vessel traffic, noise, and scientific research. While a number of known and potential threats are discussed in the Conservation Plan, the actual levels of impact of these threats have not been determined. Furthermore, belugas may be affected by multiple threats at any given time, compounding the impacts of the threats.

B. Human-Induced Factors

1. Subsistence harvest

The steep decline in beluga abundance during the mid-1990s corresponds to a time of unregulated hunting, and overutilization during that period has been identified as a major contributor to the population decline (NMFS 2008a,b). This increase in harvest was largely attributed to participation by new hunters from non-traditional harvest areas. In 1998, CIBW subsistence harvests were voluntarily reduced to assist with population recovery. In 1999 there was no harvest as a result of a voluntary moratorium by the hunters that spring, and the moratorium became permanent in 2000. During 2000–2003 and 2005–2006, NMFS entered into co-management agreements for the CIBW subsistence harvest. Between 2000 and 2008, five CIBW were harvested. CIBW were not hunted 2006–2014. Legal subsistence hunting of CIBW by Alaska Natives is now well managed. Turnagain Arm has not been documented as a traditional area for beluga hunting; Huntington's (2000) review of TEK states that historically "little hunting takes place in Turnagain Arm due to the strength of the tidal currents and winds". Subsistence hunting does not currently occur in the Windy Corner Project Action Area.

Incidental subsistence harvest of a dead stranded CIBW occurred in the Windy Corner Project Area on September 8, 2014, milepost 104 of the Seward Highway. Hunting was not involved in this harvest; subsistence users opportunistically salvaged skin and blubber of a dead beluga incidental to a necropsy conducted by NMFS and the Alaska Marine Mammal Stranding Network.

2. Poaching and illegal harassment

Illegal hunting of CIBW is thought to be negligible, but requires continued monitoring because hunting has so negatively impacted this population in the past. The extent of direct or indirect mortality associated with illegal hunting or harassment of CIBW (e.g., chasing whales with vessels or using them for target practice) is unknown and may still be occurring at a low level. The NOAA Office of Law Enforcement has investigated several incidences of reported harassment of CIBW in the past decade. The potential for illegal harassment of belugas along Turnagain Arm, including Windy Corner, may be high as CIBW often approach within several meters of vehicle pullouts along the Seward Highway. Many of the educational signs along the Seward Highway are riddled with bullet holes, and several individual beluga whales exhibit marks that appear to be healed gunshot wounds (McGuire et al. 2014).

3. Fishing

Eulachon fishing for personal use is popular in Turnagain Arm. The most significant areas where Pacific eulachon are harvested are the Twentymile River, the Placer River, and the shoreline areas (NMFS 2008a, Spangler et al. 2003). Sport and personal use fisheries for coho salmon and Dolly Varden occur in upper Turnagain Arm (Bosch 2010). Recreational fishing for salmon occurs near the Windy Corner Project Action Area in Bird Creek and across Turnagain Arm at Resurrection Creek. The Windy Corner Project Action Area does not contain areas commonly used for personal-use, subsistence, or recreational fishing. Commercial fishing for salmon does not occur in Turnagain Arm, although migratory fish that travel into Turnagain Arm may be impacted by commercial fishing pressure elsewhere in the Inlet or the open ocean.

No mortalities or injuries of belugas have been reported in association with the salmon fishery in Cook Inlet since at least 1990. Indirect effects resulting from competition for prey species are currently of greater concern than the direct effects from fishing such as ship strike or entanglement (NMFS 2008a). It is unknown whether competition for prey with commercial fishing is having an effect on CIBW (NMFS 2008a).

C. Pollution

1. Air pollution

Traffic along the Seward Highway is the local source for air pollution along Turnagain Arm. The small communities of Girdwood (milepost 91), Rainbow (milepost 108) and Indian (milepost 103), generate a minor amount of traffic compared to the total volume along the Seward Highway which averages 10,000 vehicles per day and can reach 22,000 vehicles on a summer day (DOT&PF 2013b). Nearly constant strong winds along Turnagain Arm prevent traffic-related air pollution from becoming concentrated. The Environmental Protection Agency's (EPA) website (http://www.epa.gov/oaqps001/greenbk/ancl.html) shows the Windy Corner Project Action Area is located in an attainment area. The EPA defines an attainment area as an area considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act.

2. Water pollution

There are several sources of toxins and contaminants in Cook Inlet waters, including storm water runoff, wastewater treatment facilities, oil and gas activities, aircraft deicing activities, and military training (Moore et al. 2000; NMFS 2008a). Runway deicing, ballast water discharge, and in-water or near-shore military training do not occur in Turnagain Arm. Specific activities that may degrade water quality in Turnagain Arm include discharge from sewage treatment facilities and runoff from the Seward Highway. Gold mining activities historically occurred at the several tributaries such as Resurrection, Bear, and Sixmile creeks flowing into Turnagain Arm, and a stampede brought over 3,000 prospectors to the area in the late 1800s. (www.alaskastateparks.org). Gold mining in Turnagain Arm does not currently exist on a scale or with methods that would be of concern as a source of pollutants that would impact the CIBW or their prey. Indirect sources of water contamination in the Windy Corner Project Action Area include sewage discharge from Anchorage to the west of Windy Corner and Girdwood to the east, highway runoff from the Seward Highway, and the circulation of polluted waters produced during oil and gas activities elsewhere in Cook Inlet.

Wastewaters entering municipal sewage plants may contain a variety of organic and inorganic pollutants, metals, nutrients, sediments, bacteria, viruses, and other emerging pollutants of concern (EPOCs). Wastewater from the Municipality of Anchorage receives primary treatment, while Girdwood wastewaters undergo tertiary treatment (Moore et al. 2000). Primary treatment means that only materials that can easily be collected from the raw wastewater (such as fats, oils, greases, sand, gravel, rocks, floating objects, and human wastes) are removed, usually through mechanical means. Wastewater undergoing secondary treatment is further treated to substantially degrade the biological content of the sewage (such as in human and food wastes). Tertiary treatment plants utilize primary and secondary treatment methods, but use additional technologies to increase the quality of the effluent discharge. The discharge from Anchorage is authorized by a National Pollution Discharge Elimination System (NPDES) permit, and by a Clean Water Act 301(h) Waiver issued by the EPA exempting the facility from requirements of the Clean Water Act. Monitoring programs required by the NPDES permit include assessment of the receiving waters in terms of water quality, biological and physical health, and toxins control. Little is known about EPOCs and their effects on CIBW. EPOCs include endocrine disruptors (substances that interfere with the functions of hormones), pharmaceuticals, personal care products, and prions (proteins that may cause an infection), among other agents that are found in wastewater and biosolids. The impacts on CIBW from many pollutants in wastewater entering Cook Inlet have not been analyzed and cannot be defined at this time.

Highway runoff is a significant source of water quality degradation. Various solids, metals, and nutrients present in highway runoff have been identified as degraders of water quality. Particulate matter may transport other pollutants to receiving waters. Heavy metals are known to adsorb to fine particles and other solids, where they may be released when exposed to water, and become a threat to aquatic life (Young et al. 1996).

There are no records of contaminated sites occurring between milepost 105-107 of the Seward Highway. Expanding past this two-mile project corridor, two Department of Environmental Conservation (DEC) contaminated site records exist:

- Milepost 98.6 – Pipeline Leak (File ID: 2111.38.003) – Soils, groundwater, and nearby wetlands showed signs of a previous spill of an unknown amount. The current status of this site is "active."
- Milepost 101.5 – Indian Pump Station (File ID: 2102.38.046) – Soil and groundwater was contaminated by a valve failure on an oil pipeline between Portage and the Port of Anchorage. The site was remediated and the current status is "clean-up complete-institutional controls."

It is often cited that CIBW appear to have lower levels of certain contaminants (i.e. polychlorinated biphenyls [PCB], chlorinated pesticides, and heavy metals) stored in their bodies than do other populations of belugas (Becker et al. 2000, 2001); however, the impacts of contaminants on belugas in Cook Inlet are unknown (NMFS 2008a).The URS Corporation (2010) conducted a literature review of the potential chemical exposures for belugas in Cook Inlet and despite limited site-specific data, produced a list of 19 chemical classes that they felt warranted closer evaluation in regards to their potential adverse effects on CIBW. Wetzel et al. (2010) assessed the concentrations of polycyclic aromatic hydrocarbons (PAHs) in archived CIBW tissue as well as from Upper Cook Inlet sediment and fish tissue samples. PAHs can derive from multiple sources, including oil and gas development. PAHs are suspected to be a contributing factor to high levels of cancer and deaths of beluga whales in the St. Lawrence Estuary. PAH levels in Cook Inlet sediment samples were moderately high compared to other areas with known environmental problems with PAH contamination. A highly toxic form of PAH, benzo-a-pyrene, was detected at low levels in all sample locations. Fish tissue samples exhibited the same general pattern in terms of types and concentrations of PAHs as did the sediment although they contained little or no benzo-a-pyrene. Beluga tissue from Cook Inlet exhibited much higher PAH levels when compared to the tissue of belugas from the MacKenzie River Delta. Wetzel et al. (2010) concluded that belugas in Cook Inlet appear to be bioaccumulating PAHs and expressed concerns regarding the potential impacts to the CIBW population from this class of chemicals.

The Alaska Department of Environmental Conservation has designated Upper Cook Inlet as a Category 3 waterbody within the Clean Water Act Section 303(d). This categorization is due to insufficient information available to determine water quality (ADEC 2010). There is insufficient information to evaluate the presence or levels of water-born pollutants that may be harmful to CIBW in the Windy Corner Project Action Area.

3. Oil and gas

Oil and gas exploration and production do not occur in Turnagain Arm (Figure 28). An oil spill anywhere in Cook Inlet has the potential to affect CIBW and critical habitat in Turnagain Arm and the Windy Corner Project Action Area, as does the discharge of waters contaminated during production activates at the oil and gas platforms found elsewhere in Cook Inlet. Between 1965 and 1975, there were 20,000 barrels of oil spilled in the Inlet, and between 1976 and 1979, around 10,000 barrels were spilled (MMS 1996 *in* NMFS 2000). In 1987, the tanker *Glacier Bay* struck a rock and spilled an estimated 1350–3800 barrels of crude oil into the inlet (USCG 1988 *in* NMFS 2000). A total of 295 minor oil spills from vessels occurred in Cook Inlet from January 1992 through August 2006, in addition to 333 spills from Cook Inlet oil production platforms (Eley and Nuka 2006). Seismic noise produced by oil and gas activities elsewhere in Cook Inlet

also has the potential to reach Turnagain Arm and the Windy Corner Project Action Area. Underwater noise produced by seismic activity is identified as one of the loudest sound sources that could potentially impact marine mammals (NMFS 2008a).

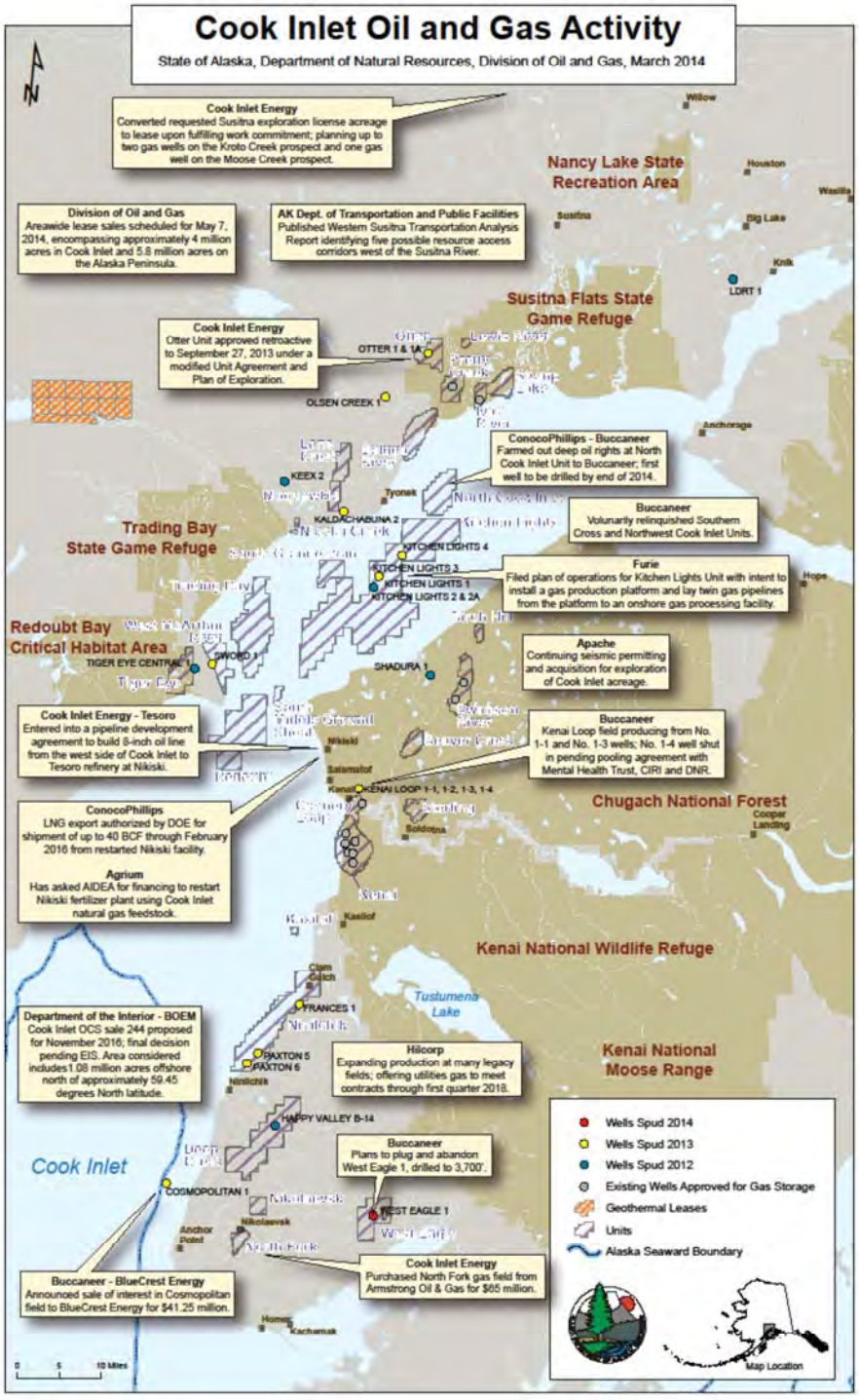


Figure 28: Map of Cook Inlet oil and gas activities in 2014.

D. Coastal Development

CIBW are unique among protected marine mammal species in Alaska given that their habitat is in close proximity to the greatest concentration of Alaska's human population and the largest urban area in the state. In 2013 (the most-recent census year available), the human population of the State of Alaska was 736,399 individuals, with 301,134 people in the Municipality of Anchorage, 96,074 in the Matanuska-Susitna Borough, and 56,862 in Kenai Peninsula Borough[3]. The human population in this region has been increasing; between 1980 and 2010 the population grew by 67%[4]. CIBW are not uniformly distributed throughout Cook Inlet, but are predominately found in near-shore waters, adjacent to areas of high human activity. Where beluga whales must compete with people for use of nearshore habitats, coastline development (both construction and operation of a project) leads to the direct loss of habitat. Indirect alteration of habitat may occur due to increased vessel traffic, in-water noise, and discharges that affect water quality. While most beluga habitat in Cook Inlet remains relatively intact, extensive sections of Turnagain Arm shoreline have been developed (e.g., rip rap and railroad construction), as have the shorelines of the Anchorage area (NMFS 2008a). Coastal development in Cook Inlet with the potential to affect CIBW and their habitat includes tidal energy projects, hydroelectric dams, mining and associated terminals, rock quarries, forestry, farming, military activities, shipping, sub-sea cable laying for fiber optics and wind turbines, liquid natural gas (LNG) pipelines, port expansion, dock and trestle construction, bridge construction, highway expansion, coastal trail extension, and dredging operations (NMFS 2008a; Figure 29).

[3] http://www.labor.state.ak.us/research/census/home.htm
[4] http://quickfacts.census.gov/qfd/states/02/0203000.html

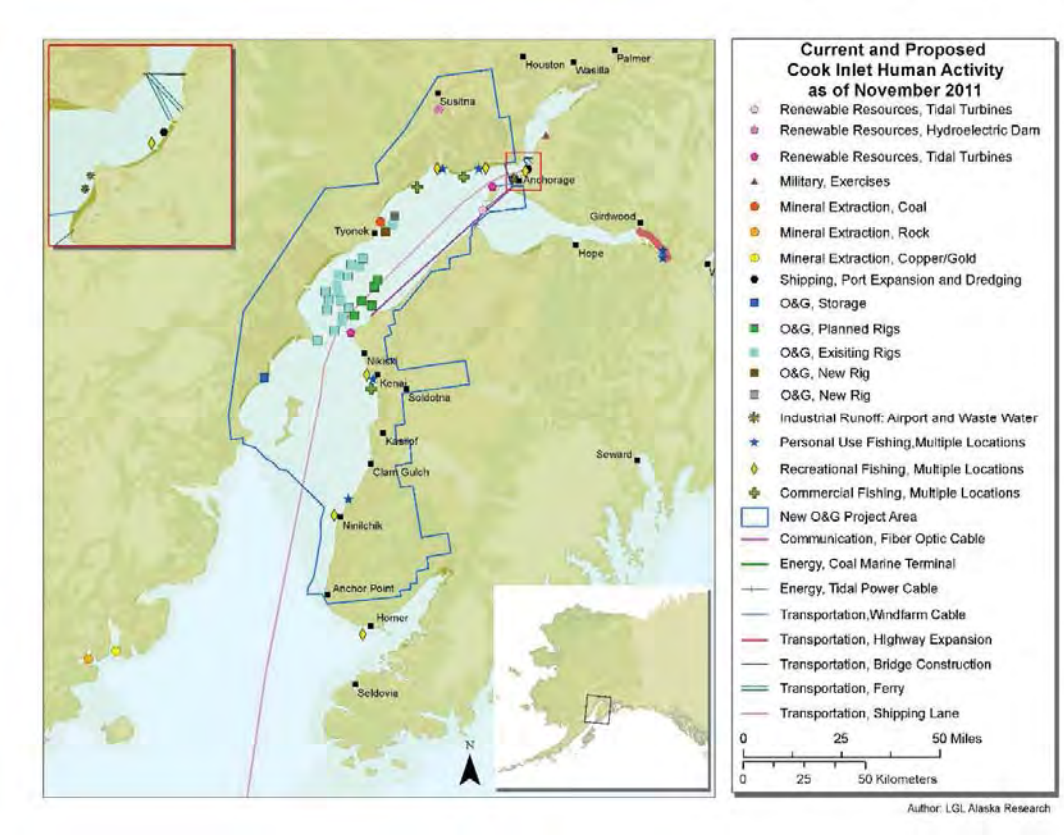


Figure 29: General geographic distribution of current or proposed human activities in Cook Inlet. The map was created in 2011 but the information still generally applies, although proposed Seward Highway projects run the length of Turnagain Arm.

The majority of the aforementioned activities do not occur in Turnagain Arm. For example, port facilities in Cook Inlet are found at Anchorage, Point MacKenzie, Tyonek, Drift River, Nikiski, Kenai, Anchor Point, and Homer (NMFS 2008a). Ports and their associated activities of frequent dredging and vessel traffic do not exist in Turnagain Arm. There have been public scoping meetings for a tidal turbine project with an associated constructed island at the mouth of Turnagain Arm (rca.alaska.gov//Filings/Docket P-13509) and a proposed causeway spanning Turnagain Arm connecting Anchorage and the Kenai Peninsula; however, these projects do not appear to have progressed beyond the scoping and preliminary permit phase. Sources of historic and present-day coastal development in Turnagain Arm primarily include highway and railroad improvement projects along the Seward Highway.

The Alaska Railroad carries both freight and passengers along Turnagain Arm. It is owned by the State of Alaska and operated by the ARRC. Railroad construction in Seward began in 1903. The Turnagain Arm section of the Alaska Railroad was constructed 1915–1918. The Seward Highway is 127 miles (201 km) long and links Anchorage and Seward. It was completed in 1951 and paving occurred in 1952 (www.alaskastateparks.org). Railroad and highway construction,

expansion, and maintenance have involved rock blasting, filling of mudflats, and rip-rap placement along the north shore of Turnagain Arm.

E. Vessel Traffic

Vessel traffic may affect the CIBW population through increased collision risk, noise, and harassment, including habitat displacement due to high vessel traffic in feeding or calving habitats (NMFS 2008a). Several dead and live photo-identified CIBW bear signs of ship strike (McGuire et al. 2014).

Shipping traffic in and out of Cook Inlet is substantial. The following statistics on vessel traffic come from Eley and Nuka (2006): from January 2005 through mid-July 2006, 704 deep-draft vessels called at ports in Cook Inlet; ~200 tug/barge trips associated with fuel oil traveled into Cook Inlet; and approximately 500 to 900 commercial fishing vessels operate in Cook Inlet from mid-May to mid-September. Shipping lanes for large vessels do not occur in Turnagain Arm or the Windy Corner Project Action Area. The shipping lane for large vessels transiting between the Lower Inlet and the Port of Anchorage or Port MacKenzie skirt the west side of Fire Island and do not enter Turnagain Arm. Large vessels, including tugs and barges, may occasionally enter Turnagain Arm for survey/construction support, as occurred in 2013 during the geotechnical surveys for the Windy Corner Project when tideland geotechnical investigations were conducted from a barge resting on the Turnagain Arm seafloor and test holes were drilled out to 200 ft (60.9 m) from shore with an 8 in (20.3 cm) diameter hollow stem auger.

Small vessel traffic in Turnagain Arm is very sparse due to dangerous boating conditions (i.e., shallow mudflats, strong tides) and is usually associated with recreational fishing at the TwentyMile and Placer rivers, where there are boat launches for small vessels. Windsurfers, paddle boarders, and jet skiers also use Turnagain Arm on a seasonal basis.

F. Tourism and Whale Watching

Commercial boat-based whale watching for CIBW does not currently exist in Cook Inlet. Scenic overflights of Turnagain Arm from Anchorage and Girdwood airports do occur, and have the potential to disturb CIBW if pilots closely approach and circle whales. Land-based whale watching for CIBW is quite common for visitors and locals alike along Turnagain Arm during the ice-free months, especially in late summer and early fall, but these land-based activities do not impact the CIBW or their habitat.

G. Noise

Noise is generally defined as a sound that causes a disturbance. The following overview of sound is summarized from Richardson et al. 1995. Sound is vibrations that are heard. Sound waves travel through air or water as vibrations of particles, and hearing results from the vibrations exerting pressure on the eardrum. Frequency is the rate of vibration, measured in cycles per second (hertz, abbreviated as Hz) and describes the sound's pitch. The loudness of a sound is referred to as intensity, and is measured in dB using a logarithmic scale. The sound pressure level (SPL) is a change in pressure caused by a sound wave. Root mean square (rms or RMS) refers to average pressure over the duration of a single pulse. Sound pressure is measured in micropascals (μP). Sound pressure levels are relative measurements, and are reported referenced

to a standard of 1 μPa RMS SPL. Hence, "X decibels referenced to 1 microPascal" is notated as X dB re 1 μPa RMS SPL.

In general, Cook Inlet is considered a noisy environment, both from the high ambient noise of high current and heavy glacial silt, as well as the many sources of anthropogenic noise (Blackwell and Greene 2003). Prior to 2014, baseline levels of ambient underwater noise had been measured in several locations in Upper Cook Inlet by Blackwell and Greene (2003), but not in Turnagain Arm. DOT&PF commissioned measurements of ambient underwater sounds levels at Windy Corner in August 2014 (Burgess 2014; Appendix 1). The study measured sound characteristics at different tidal stages but under otherwise quiet conditions. Acoustic measurements were conducted using a small, self-contained acoustic recorder suspended from a remote-controlled boat that brought it to distances of 161–262 ft (49–80 m) from shore, after which it was allowed to drift while recording and then retrieved by tether. The measurements showed ambient sound pressure levels at high and low tide to be 74 and 81dB re 1 μPa respectively, as computed over a 40Hz–9.3 kHz band. These levels were quieter than those measured at ebb and floodtide, which measured 103 and 108 dB re1μPa, respectively. High tide was quieter than any other part of the tide cycle, with low tide as the next-quietest. Rising tide was the noisiest part of the tide cycle at Windy Corner. Ambient sound levels at high and low tide were quieter than expected for such an active body of water, although still louder than the quietest levels recorded at other locations in Cook Inlet by Blackwell and Greene (2003). Because much of Upper Cook Inlet is characterized by shallow depth and sand/mud bottoms, it is a poor environment for propagating sound (Blackwell and Greene 2003).

Potential sources of anthropogenic underwater noise in Turnagain Arm and the Windy Corner Project Action Area include vehicular noise along the highway, aircraft noise from commercial, recreational and military overflights, railroad noise, the rare vessel navigating Turnagain Arm, and seismic operations associated with oil and gas exploration elsewhere in the Inlet. One low-altitude overflight of a small single-engine aircraft occurred during recording at Windy Corner during the falling tide, and associated sounds were present in the underwater acoustic recordings (Burgess 2014, Appendix 1). Underwater noise produced by seismic activity is identified as one of the loudest sound sources that could potentially impact marine mammals (NMFS 2008a).

It is challenging to characterize the acoustic baseline of Cook Inlet for CIBW. It may be that for a species such as CIBW whose primary sense is hearing, the combination of inherently poor acoustics and high noise of Cook Inlet result in them already living in an acoustically stressful environment. However, CIBW critical habitat PCE 5 is defined as the absence of in-water noise at levels resulting in the abandonment of habitat by CIBW. Under current, pre-project baseline conditions, there is no indication that ambient noise levels in the action area have caused CIBW to abandon or avoid their habitats. Therefore, because CIBW are regularly there on a seasonal basis, PCE 5 exists under baseline conditions and is by definition healthy/intact in the Windy Corner Project Action Area.

H. Scientific Research on CIBW in Turnagain Arm

Aerial surveys of the CIBW population were conducted in the late 1970s by ADF&G and annually since 1993 by NMFS (Hansen and Hubbard 1999; Rugh et al. 2010; Shelden et al. 2012, 2011, 2010a,b, 2009a, 2009b, 2008a,b). In 1993, NMFS began annual aerial surveys of the

CIBW population. These surveys occur in early June (except for late July in 1995), include the upper, middle, and lower sections of the Inlet, and are stratified to focus survey effort in the areas of the Upper Inlet where belugas are typically found in June. Areas surveyed include Turnagain Arm, and surveys are conducted at low enough altitudes to require a Scientific Research Authorization for incidental take by harassment (from noise).

NMFS live-captured 18 belugas between 1999 and 2002 in order to attach satellite transmitters to track the whales and learn more about movement patterns and habitat use. Whales were tagged in August, and nine whales logged movements into December and four into the following March (Hobbs et al. 2005), although three whales were presumed to have died as a result of the capture and/or tagging efforts. The last tag transmitted in March 2003, and several of these whales are still identified by their tag scars. Tagged whales were tracked moving throughout Turnagain Arm, and several whales with tagging scars have been seen in Turnagain Arm as recently as fall 2014 (McGuire et al. 2014; McGuire unpublished data). A NMFS MMPA/ESA Scientific Research Permit required to capture and tag CIBW is currently held by the NMFS NMML, although capture and tagging are not taking place at the present time.

The LGL CIBW Photo-ID Project has a NMFS MMPA/ESA Scientific Research permit allowing harassment by vessel approach to photograph CIBW for identification and tracking purposes. Photo-id surveys are conducted from vessels and from land. Vessel-based surveys are occasionally conducted in the far western end of Turnagain Arm (i.e., Chickaloon Bay and up to Gull Rock), but the survey vessel does not travel further up Turnagain Arm because of dangerous boating conditions. The majority of photo-id surveys conducted in Turnagain Arm are land-based and do not require a research permit because no harassment is involved.

Stranding response to live and dead stranded marine mammals in general, and of endangered CIBW in particular, is regulated by NMFS. Designated responders in the Alaska Marine Mammal Stranding Network may respond to CIBW strandings if activities are first authorized by NMFS on a per-case basis; these activities fall under the umbrella of the research permit held by NMFS.

I. Additional Environmental Baseline Considerations

1. Strandings

Although stranding is classified by the Conservation Plan (NMFS 2008a) as a natural threat, it should be noted that strandings may occur as a direct or indirect result of human activities. CIBW strandings have the potential to be brought about by a behavioral or navigational disturbances resulting from vessel interference, loud noise, avoidance of hunting (by people or killer whales), inability to swim or navigate because of exposure to toxins or pathogens, human-caused changes to bathymetry or other alternations that would block migration routes. Once a whale strands, death may result from stress and/or hyperthermia. Without the buoyancy provided by the water, the whale's weight places additional stress on internal organs which can make breathing difficult. An extensive network of blood vessels within the flukes and flippers allows beluga whales to radiate excess body heat to the environment. If the flukes and flippers are out of the water, this network cannot function properly and internal body temperature rises resulting in hyperthermia. Beluga whale strandings in Upper Cook Inlet are not uncommon, with a majority

occurring in Turnagain Arm (NMFS 2008a), although this may be in part because road access along the Seward Highway affords greater opportunities for sightings compared to elsewhere in Cook Inlet. NMFS has reports of over 700 whales stranding in Upper Cook Inlet since 1988, with mass strandings (defined as involving two or more whales) primarily occurring in Turnagain Arm. For example, in 2003 there were six live-stranding events and five of these occurred in Turnagain Arm (one in April, one in August, two in September, and one in October; email from Mandy Migura, NMFS AK Region, September 03, 2013). Although mass strandings of CIBW have often coincided with extreme tidal fluctuations ("spring tides") or killer whale sighting reports (Shelden et al. 2003), during informal consultations on the Windy Corner project, NMFS expressed concerns about a mass stranding of CIBW in Turnagain Arm in August 2003 that resulted in five CIBW mortalities and may have been associated with blasting activities along Turnagain Arm that continued into October of 2003. NMFS has not officially correlated the two events, but the possibility must be considered and acknowledged as a concern. Other anthropogenic noise sources, specifically, naval mid-range sonar, have been linked to mass strandings of otherwise healthy cetaceans. In a review of potential anthropogenic stressors experienced by CIBW, Norman (2011) hypothesized that belugas may react to noise from explosions by fleeing to shallower waters where they would consequently have a higher chance of stranding. Strandings definitively resulting from exposure to anthropogenic noise sources have not been recorded in Cook Inlet (76 FR 58473), although tests that would rule out acoustic trauma have not been conducted on the majority of stranded CIBW.

J. Cumulative Effects

While it is difficult to quantify or characterize individual impacts of human actions on CIBW and critical habitat, it is even more difficult to quantify the potential impacts that a combination of actions, either concurrently or sequentially, would have. Exposure to any given stressor, even at low levels, may predispose individual CIBW to greater susceptibility to mortality or long-term effects (for example, reproductive failure) from other stressors. For example, stressors of any kind tend to increase cortisol levels, which in turn tend to reduce immune response. Environmental factors can also interact with other factors to impact CIBW health. For example, a reduction in availability of preferred, high-calorie prey will reduce individual body condition, increasing susceptibility to parasites, disease, and predation, and possibly reduce reproductive potential. In addition, periods of restricted food access can cause belugas to use their fat reserves, resulting in the release into the blood stream of contaminants that may have bioaccumulated in that tissue (Couillard et al. 2008a; Couillard et al. 2008b). The additive effects of multiple noise sources, as well as the combination of noise and other stressors, are of particular concern, although this field remains poorly understood (NRC 2005, Kuczaj 2007). Cumulative impacts have been a long-standing issue in the debate over noise effects on marine mammals (Clark et al. 2009).

Thus, while the environmental baseline of Turnagain Arm and the Windy Corner Project Action Area suggest that these areas appear to be relatively intact and healthy for CIBW at the present time, poor and deteriorating conditions elsewhere in the Inlet could result in CIBW being more susceptible to minor stressors encountered in the project area than would otherwise be the case. Potential anthropogenic threats to CIBW exist in the waters of Turnagain Arm as well as throughout Cook Inlet, and because all of the individuals in the CIBW population move throughout the Inlet seasonally, whales are likely exposed to multiple potential threats. For

example, the majority of the sixty-six different individual belugas photo-identified in Turnagain Arm 2005–2013 (McGuire et al. 2014) were also photographed in the Susitna River Delta and Knik Arm, and several were photographed in the Kenai River Delta. The same individual whale might therefore be exposed to noise from seismic exploration near the Forelands, fishing vessels and nets in the Kenai River Delta, vessel traffic in the shipping lanes for the Port of Anchorage, military exercises in Knik Arm, and physical habitat alteration and noise from in-water highway realignment activities in Turnagain Arm. When considering the possible effects on CIBW from human activities in Turnagain Arm, it should be noted that most, and likely all, of the CIBW population could be seasonally exposed to these activities. Because such exposure would very likely occur for neonates, calves, and adults, and because the same individuals may be exposed multiple times within a year, and year after year, the cumulative effects of all activities in the range of CIBW and their potential to affect the entire population cannot be ignored.

K. Environmental Baseline of CIBW Critical Habitat in the Windy Corner Project Action Area.

Table 11 summarizes the information presented in the previous section with respect to the five PCEs of CIBW critical habitat.

Table 11. Baseline of primary constituent elements (PCEs) of beluga whale critical habitat in the Windy Corner Project Action Area.

Beluga whale critical habitat PCEs	a) PCE is present and "healthy" in the action area	b) PCE is present but at risk within the action area	c) PCE status in action area unknown
Intertidal and subtidal waters of Cook Inlet with depths <30 feet (MLLW) and within 5 miles of high and medium flow anadromous fish streams	yes		
Primary prey species consisting of four species of Pacific salmon (Chinook, sockeye, chum, and coho), Pacific eulachon, Pacific cod, walleye pollock, saffron cod, and yellowfin sole	yes		
Waters free of toxins or other agents of a type and amount harmful to CIBW			Insufficient information to determine baseline status
Unrestricted passage within or between the critical habitat areas	yes		
Waters with in-water noise below levels resulting in the abandonment of critical habitat areas by CIBW	yes		

V. EFFECT OF THE ACTION

A. Overview of Effects Section

This section describes the potential effects of the Windy Corner Project on the endangered CIBW and their critical habitat. Effects of the proposed action are defined as in the ESA (50 CFR 402.02):

"…the direct and indirect effects of an action on the species or habitat together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process."

The different types of effects that need to be analyzed are further defined:

Direct effects – Those immediate effects caused by the proposed action and occurring concurrently with the proposed action.

Indirect effects – Those effects that are caused by the proposed action and are later in time but still are reasonably certain to occur.

Cumulative effects – As defined in the ESA, cumulative effects are future state, tribal, local, or private activities, not involving federal activities, which are reasonably certain to occur within the action area of the proposed action.

Direct and indirect effects of the Windy Corner Project on CIBW are discussed in Section V.B. The direct and indirect effects of the Windy Corner Project on CIBW critical habitat are discussed in Section V.C. Cumulative effects within the Windy Corner Project Action Area are discussed in Section V.D. Existing and potential mitigation measures are identified and discussed within each section. A determination of effect is provided in Section VI of this document.

B. Direct and Indirect Effects of the Windy Corner Project on CIBW

The Conservation Plan for the Cook Inlet Beluga Whale (NMFS 2008a) identified a number of natural and anthropogenic threats to CIBW (discussed in Section IV of this BA). Those threats that will not be affected by the actions of the Windy Corner Project will not receive further analysis in this BA. Specifically, the natural threats unaffected by the proposed action include: predation, parasitism, disease, and environmental change (i.e., climate change). The anthropogenic threats that will not be considered in the following analysis of possible effects from the proposed action at Windy Corner include: subsistence harvest of CIBW, poaching, fishing (personal use, subsistence use, or commercial), research, and oil and gas development.

Potential effects relevant for this BA occurring in the action area during the Windy Corner Project include:

- habitat alteration
- pollution
- reduction in availability or quality of prey species
- increased noise
- illegal harassment
- increased risk of injury or mortality

1. Direct and indirect effects of Windy Corner Project from habitat alteration

The proposed project requires the permanent placement of approximately 2,024,000 c.y (1,547,500 cu m) of fill material in the intertidal area, resulting in a loss of 38 ac (15.4 ha) of mudflats (Figure 30), with a maximum fill distance into the water of 450 ft (137 m). The term mudflats refers to estuarine, intertidal, flat, and regularly flooded wetlands composed primarily of inorganic silt, without vegetated areas, except for the algae that may occur on riprap and rocky outcroppings. A wetland delineation conducted in 2001 determined that tidal mudflats are the only type of wetland in the project area (DOT&PF 2013a).

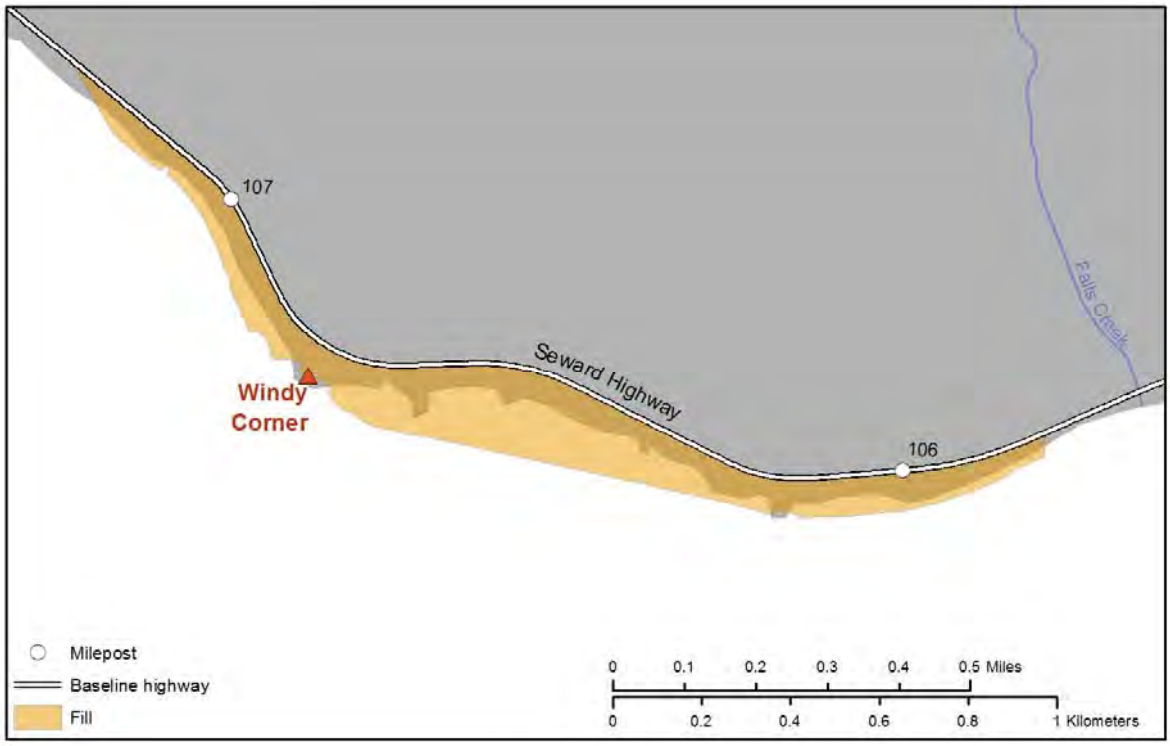


Figure 30: Location of the area that will be filled during the Windy Corner Project. A total of 38 acres (15.4 hectares) will be filled.

The proposed fill area of the Windy Corner Project does not contain anadromous rivers or streams, nor will it block access to these waters. Because fill activities for the Windy Corner Project will take place along the length of the existing shoreline, and not perpendicular to the

shoreline or jutting out into Turnagain Arm, the habitat alteration from the Windy Corner Project is not anticipated to negatively impact fish passage within Turnagain Arm.

Blasting at Windy Corner and the two material sites will occur entirely on land, on the north side of the existing Seward Highway, and will not alter in-water habitat. Alteration of aquatic habitat will result from the blasting of Gorilla Rock and subsequent fill around it (Figure 31). At baseline conditions, Gorilla Rock juts into the intertidal area and potentially provides fish habit by way of in-water structure (Figure 32), a relatively deep pool, and back-eddies; similar aquatic environments such as the base of Cairn Point in Knik Arm have been described as fish habitat and feeding habitat for belugas (Markowitz and McGuire 2007).



Figure 31: Gorilla Rock (center) and associated mudflats during low tide. Note waterline from a previous high tide (image 2014 Google earth).

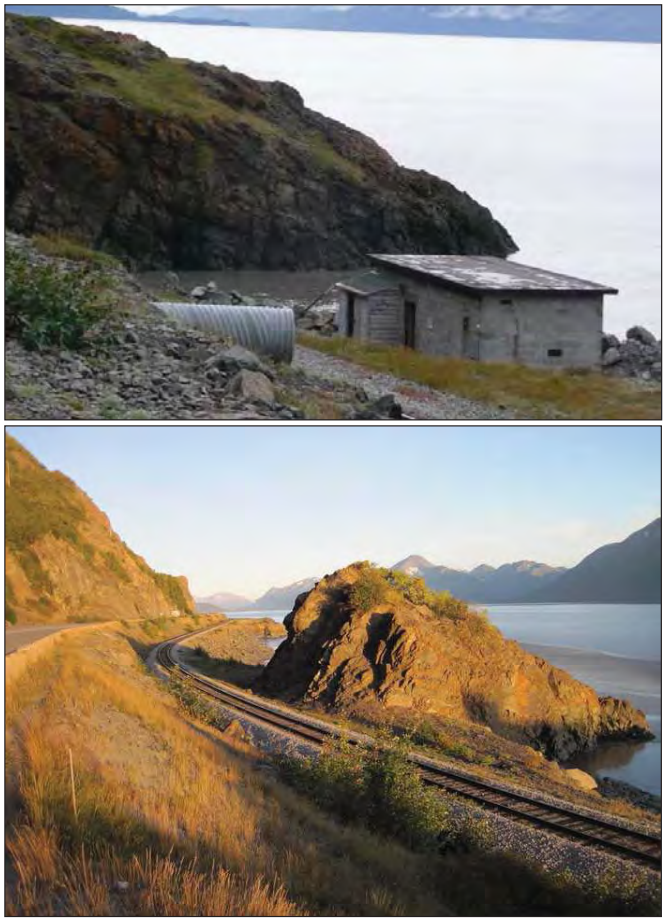


Figure 32: Gorilla Rock and adjacent deep-water cove, southeast-facing views.

Mitigation of habitat alteration

- During the planning stages of the Windy Corner Project, DOT&PF consulted informally with NMFS and conducted resource agency technical advisory group (TAG) meetings. As a result of discussions, DOT&PF revised the project design, shifting the proposed highway and railroad realignments to be much closer to shore to minimize the area of Turnagain Arm that the project would fill.

- Mitigation for the proposed fill is anticipated to consist of an in-lieu-fee, as determined by the Anchorage Wetlands Debit-Credit Method, however, this will be determined as part of the Section 10/404 permitting process.

- Fill activities will not occur during critical salmon and eulachon spawning and outmigration periods (March 1–June 30).

- During construction, the fill site will be graded each work shift to prevent ponding on the fill surface that could trap fishes between high tides.

- Fill activities will not occur during those times of years that CIBW are most likely to be in the project area (April–early June, and August–October). The April–early June closure period is already covered by the March 1–June 30 closure period to protect migrating fish. Details of the CIBW mitigation and monitoring plan may be found in Appendix 3.

- Fill will be placed when the site is de-watered during low tide, when CIBW are less likely to be in the project area. Details of the CIBW mitigation and monitoring plan may be found in Appendix 3.

- Fill activities will only take place when Protected Species Observers (PSOs) are on duty. Details of the CIBW mitigation and monitoring plan may be found in Appendix 3.

- Fill activities will cease if CIBW or other marine mammals are seen within the 4921 ft (1,500 m) safety zone. Details of the CIBW mitigation and monitoring plan may be found in Appendix 3.

2. Direct and indirect effects of Windy Corner Project from pollution

Air pollution

The Windy Corner Project will generate a minor amount of air pollution from project vehicles used during staging and construction, and from blasting activities. The air pollution from project vehicles will have negligible impacts on existing air quality in the proposed work area relative to the average daily traffic volume, although the public may notice diesel exhaust emissions from construction vehicles. The project area is considered by the Alaska Administrative Code (AAC) 18 AAC 50.15 as a Class II area, allowing moderate carbon monoxide pollutant increases unless otherwise designated by the State of Alaska. Impacts to air quality during construction and operation are anticipated to be minimal and temporary. Air pollution from dust created during blasting activities is expected to occur only in the minutes following a blast. No long-term impacts to air quality from the Windy Corner Project are anticipated.

Mitigation of air pollution

- The Contractor will be required to keep all equipment in good operating condition to reduce airborne particulates.

- Methods to control and contain soil and other debris tracked onto the Seward Highway by construction vehicles will be implemented. Watering, sweeping, and/or the use of hydroscopic chemicals will be implemented to minimize dust impacts on haul routes.

- Dust associated with drilling and blasting can be expected at material sites and will be partially controlled with watering.

Water pollution

Temporary water quality degradation will occur during filling of the Turnagain Arm mudflats. The Windy Corner Project may result in a temporary increase in turbidity as highway and railroad embankment construction on the tidal mudflats will disturb silt, resulting in increased

local turbidity levels. Increased sedimentation can potentially decrease fish feeding efficiency and smother benthic organisms. It should be noted however that naturally occurring (background) suspended silt sediments are high in Turnagain Arm and strong tidal currents constantly move seafloor sediment. Impacts from increased turbidity are expected to be temporary and not pose long-term threats to aquatic organisms adapted to the high ambient turbidity levels in Turnagain Arm.

Fill activities have the potential to suspend contaminants, which if trapped in fill material, could re-suspend in the water column where marine resources could be exposed to them. Water pollution can result in degradation of aquatic habitat and contaminant bioaccumulation in fish and/or CIBW.

As discussed in Section IV, contaminants are a concern for CIBW health and for subsistence use. While it appears CIBW have lower levels of tested contaminants stored in their bodies than do other populations of belugas, the impacts of these contaminants on CIBW is unknown and the presence of many contaminants remains untested. Water pollution from fill materials within the two-mile construction boundary of the Windy Corner Project is anticipated to be minor due to limited geographic scale, limited duration, and the implementation of mitigation measures. Mitigation measures will be taken to ensure that the risk of water contamination from the Windy Corner Project is minimized to the fullest extent possible.

Mitigation of water pollution

- If contamination (e.g., from fuel spills) occurs during construction and construction-related activities, all work in the contaminated area will cease, Alaska Department of Environmental Conservation (ADEC) will be contacted, and the contamination will be handled and/or disposed of according to an ADEC-approved Corrective Action Plan.

- A Storm Water Pollution and Prevention Plan (SWPPP) will be developed for this project in compliance with the Alaska Pollutant Discharge Elimination System (APDES) permit for construction activities. Temporary water quality impacts would be minimized through implementation of erosion and sedimentation control measures, as outlined in the SWPPP.

- Measures will be taken to ensure that fill originates from non-contaminated clean rock. DOT&PF will supply material sites for the road, subgrade structure, and surfacing. If the Contractor elects to use an undeveloped material site, contract language will require the Contractor to acquire all necessary permits and clearances for the site(s) and provide copies to the DOT&PF Project Engineer prior to development. Material from a borrow site that has not received the appropriate permits and clearances will not be accepted for project construction.

- Fill will be placed when the site is de-watered by low tide stages to decrease the amount of sediment introduced into the water column.

3. Direct and indirect effects of Windy Corner Project from reduction in availability or quality of prey species

The Windy Corner Project has the potential to affect the availability or quality of prey species through several mechanisms, including the loss of mudflat habitat through fill, death or injury to fish from blasting, and avoidance/reduced use of the area by fish as a result of displacement from noise generated by blasting or fill placement. Quality of prey could be decreased via water contamination. Blasting events and their associated potential effects on prey are anticipated to be of an extremely limited scope and duration. Possible contamination of prey from fill materials within the two-mile construction boundary of the Windy Corner Project is anticipated to be minor due to limited geographic scale, limited duration, and the implementation of mitigation measures. The proposed fill area of the Windy Corner Project does not contain spawning beds for prey or anadromous waters, and any anadromous species found in the project area would be transiting through the area in route to or from anadromous streams or rivers.

Mitigation of reduction in availability or quality of prey species

See section V.B.1 (habitat alteration), section V.B. 2. (pollution), and section V.B.4 (noise), for more details on how the Windy Corner Project will mitigate these effects on prey species.

4. Direct and indirect effects of Windy Corner Project from noise

The effects on CIBW from noise produced by the Windy Corner Project during construction activities (i.e., blasting, filling, and operation of machinery) and from any associated vessel traffic could include one or more of the following: masking of natural sounds, interrupted or altered behavior, behavioral disturbance leading to displacement and altered habitat use, tolerance, temporary or permanent hearing impairment, and non-auditory physical or physiological effects such as stranding or increased stress levels (Richardson et al. 1995; Nowacek et al. 2007; Southall et al. 2007).

The manner in which sound from Windy Corner Project activities may affect CIBWs depends on the SPL of the sound, but also on numerous other factors. The SPL at the location where the sound is received by a marine mammal depends on the distance of the animal from the sound source as well as the water depth and bathymetry. How a particular SPL from a noise source will affect a marine mammal will also depend on the frequency range of the sound and the hearing ability of the animal in that frequency range. The level of aquatic background noise can also affect a marine mammal's ability to hear human-made sound. Underwater industrial sounds must have levels equal to or greater than both the ambient noise levels at the corresponding frequencies and the hearing threshold of the animal at that frequency in order to be detected by that animal. Sounds generally need to be at least ~20–30 dB stronger than the detection thresholds and/or ambient noise levels to elicit notable changes in the behavior or distribution of animals sensitive to those sounds (Richardson et al. 1995). Animals that are frequently exposed to certain types of sound will sometimes tolerate sound levels as much as ~40–60 dB above ambient or detection levels before they change their behavior or distribution. Apparent indifference to strong sounds often occurs when the sounds are familiar and when the animals have learned that the sound is not associated with any negative consequences. This learning

process is called habituation. Alternatively, animals may become less tolerant of a sound with repeated exposure, in a process called sensitization.

Masking

Masking refers to the obscuring of sounds of interest by interfering sounds, generally at similar frequencies (Richarson et al. 1995). This is of concern if the noise generated by the Windy Corner Project were to mask a beluga's ability to detect biologically important sounds, such as those produced during echolocation, or by other belugas, prey, or predators.

The effect of shipping noise in the acoustic environment of the endangered SLE belugas was studied by Gervaise et al. (2012). Noise from car ferries and a seasonal whale-watching fleet was analyzed. The study found both beluga communication and echolocation bands were dramatically affected by these noise sources. Based on the background noise levels, spectra, and periodicity reported, and assuming no behavioral or auditory compensation, beluga communication and echolocation signals could be masked 50% of the time with a reduction of potential communication ranges to less than 30% of their values under natural ambient noise conditions. Similarly, echolocation range could be reduced to 80% of the value under natural ambient noise conditions. The study concludes that noise from these sources could easily limit long-range communication among scattered individuals or pods and affect echolocation efficiency in all exposed belugas.

Kendall (2010) speculated that masking of CIBW whistles may have occurred during construction of the marine terminal expansion at the Port of Anchorage; this was based on the fact that only echolocation clicks were detected during a passive acoustic survey.

Behavioral effects

Underwater sounds may cause changes in behavior of marine mammals. Behavioral effects on marine mammals could include temporary displacement from habitat (avoidance), altered direction of movement, and changes in resting or feeding cycles, alertness, vocal behavior, navigational and communication abilities, swimming, or diving behavior. The most common marine mammal response to construction noise would likely be avoidance, although it is possible animals could be attracted to the noise. Avoidance responses may be strong if marine mammals move rapidly away from the source, or weak if movement is only slightly deflected away from the source. In extreme cases, behavioral changes could lead to stranding events.

The reactions of individual marine mammals to noise may vary depending on multiple factors, including species, state of maturity, experience, activity, reproductive state, and time of day (Richardson et al. 1995; Wartzok et al. 2004; Southall et al. 2007; Weilgart 2007). This variability in responses makes it difficult to predict the reaction distance from a noise source for an individual marine mammal or the noise level that will consistently result in a reaction. Few studies have quantified marine mammal reactions to noise exposure and these studies have involved individual or small numbers of animals. Population-level impacts have not been determined. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine

mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be quite significant (e.g., Lusseau and Bejder 2007; Weilgart 2007).

Beluga whale responses to industrial activity are quite variable, ranging from tolerance to extreme sensitivity, depending on the whale's activity, its previous exposure to industrial activities, its habitat, and the type of industrial activity. Research on beluga responses to explosives do not exist. There are a few studies examining beluga whale response to pile driving. Because blasting and impact pile driving are both classified as impulsive sounds, results from impact pile driving studies may be instructive when assessing effects from blasting. During Phase 1 (pre-pile driving) of the Port of Anchorage marine terminal expansion in 2006, 80% of beluga sightings occurred within 1640 ft (500 m) of construction activities, and 64% occurred within the footprint of the project area (Markowitz and McGuire 2007). During 2007–2009 (with pile driving), 29–46% of beluga whale sightings were within the project area (Cornick and Kendall 2008a, b; Cornick et al. 2010); however, no beluga whales were seen during pile driving activities in 2007 (Cornick and Kendall 2008a). Although preliminary data showed no behavioral changes or avoidance responses by belugas during in-water pile driving or construction activities for the marine terminal (Cornick and Kendall 2008b, Cornick et al. 2010; Kendall et al. 2009), further examination of the pre-construction (2005–2007) and construction (2008–2009) periods showed significant differences in sighting duration, behavior, group composition, and group formation between pre-construction and pile-driving periods (Kendall 2010). The sighting duration decreased from 35 ± 5 min during pre-pile driving to 18 ± 3 min during pile driving activities. Beluga whales were more often seen traveling during pile driving activities, and diving and suspected feeding behavior decreased. Beluga pods were more dispersed during pile driving activities compared to pre-construction, and more lone individuals were sighted. However, no significant differences in beluga whale distribution were apparent, even when pile driving activity quadrupled from one year to the next (Kendall 2010). Passive acoustic recordings during 2009 showed that beluga click rates were higher during periods with construction noise compared to without; however, this difference was not significant (Kendall 2010). Kendall (2010) suggests that the decreased sighting duration, increased traveling, increase in sightings distance from the construction site, as well as, the reduction in click rates may indicate slight avoidance behavior by belugas during pile driving activities. When beluga whale vocal behavior was examined, click rates tended to be higher during periods without construction activity, but this difference was not statistically significant (Kendall 2010).

Evidence exists of other marine mammals being disturbed by implosive noise. During pile driving activities (using both vibratory and impact drivers) at the Nysted offshore wind farm along the coast of Denmark, a significant decrease in harbor porpoise echolocation activities and presumably abundance was reported within the construction area and in a reference area 10–15 km from the wind farm (Carstensen et al. 2006; Teilmann et al. 2008). Porpoises appeared to have left the area during pile driving but returned after several days (Tougaard et al. 2006). Two years after construction, porpoise echolocation activity and presumably abundance were still significantly reduced in the wind farm but had returned to baseline levels at the reference sites (Tougaard et al. 2006; Teilmann et al. 2008).

In 2010, researchers observing a group of CIBW in Knik Arm's Eagle Bay noted unusual surfacing behavior during a period when explosives were being detonated on shore at Joint Base

Elmendorf Richardson (McGuire unpublished data). Boat-based observers could see smoke columns (Figure 33) and felt and heard the explosions.



Figure 33: Explosion at Eagle Bay, Knik Arm during military exercises on August 2010. (photo T.McGuire, NMFS MMPA/ESA permit #14210)

Hearing Impairment

Temporary or permanent hearing impairment is a possibility when marine mammals are exposed to very strong sounds. The following subsections summarize available data on noise-induced hearing impairment and non-auditory physical effects.

Temporary Threshold Shift (TTS)—TTS is the mildest form of hearing impairment that can occur during exposure to a strong sound (Kryter 1985). While experiencing TTS, the hearing threshold rises and a sound must be stronger in order to be heard. It is a temporary phenomenon, and (especially when mild) is not considered to represent physical damage or "injury" (Southall et al. 2007; Le Prell 2012). Rather, the onset of TTS is an indicator that, if the animal is exposed to higher levels of that sound, physical damage is ultimately a possibility. The magnitude of TTS depends on the level and duration of noise exposure, and to some degree on frequency, among other considerations (Kryter 1985; Richardson et al. 1995; Southall et al. 2007). For sound exposures at or somewhat above the TTS threshold, hearing sensitivity recovers rapidly after exposure to the noise ends. Extensive studies on terrestrial mammal hearing in air shows that TTS can last from minutes or hours to (in cases of strong TTS) days. More limited data from odontocetes and pinnipeds show similar patterns (e.g., Mooney et al. 2009a,b; Finneran et al. 2010). There are empirical data on the sound exposures that elicit onset of TTS in captive bottlenose dolphins, belugas, and porpoise. The majority of these data concern non-impulse sound, but there are some limited published data concerning TTS onset upon exposure to a single pulse of sound from a watergun (Finneran et al. 2002b) and to multiple pulses from an airgun (Finneran et al. 2011). A detailed review of all TTS data from marine mammals can be found in Southall et al. (2007). The following summarizes some of the key results from odontocetes.

Finneran et al. (2002b) exposed a beluga whale to single underwater impulsive sounds from a seismic watergun and reported a TTS of 7 and 6 dB at 0.4 and 30 kHz, respectively, ~2 min after exposure to single peak-to-peak pressures of 226 dB re 1 µPa. The received energy level that caused the onset of mild TTS, as measured without frequency weighting, was ~ 186 dB sound energy level (SEL) (Finneran et al. 2002a). Thresholds returned to within 2 dB of the pre-exposure value ~4 min after exposure. Thus, a single impact pile driving or explosive pulse might need to have a received level of ~186 dB re 1 µPa RMS in order to produce brief, mild TTS. Schlundt et al. (2000) reported that stimuli levels between 192 and 201 dB 1 µPa were necessary to induce TTS in bottlenose dolphins and beluga whales when exposed to intense one-second tones at various frequencies; altered behavior in belugas occurred at stimuli between 180 and 196 dB 1 µPa. The available TTS data for a beluga exposed to impulse sound are extremely limited. Follow-up work has shown that the SEL necessary to elicit TTS can depend substantially on frequency, with susceptibility to TTS increasing with increasing frequency above 3 kHz (Finneran and Schlundt 2010, 2011; Finneran 2012).

There has been little study of the rate of recovery from TTS in marine mammals, and in humans and other terrestrial mammals, the available data on recovery are quite variable. Southall et al. (2007) concluded that until relevant data on recovery are available from marine mammals, it is appropriate not to allow for any assumed recovery during the intervals between pulses within a pulse sequence. Additional data are needed to determine the received sound levels at which small odontocetes would start to incur TTS upon exposure to repeated pulses with variable received levels. At the present state of knowledge, it is also necessary to assume that the effect is directly related to total received energy even though that energy is received in multiple pulses separated by gaps. The lack of data on the exposure levels necessary to cause TTS in odontocetes when the signal is a series of pulsed sounds, separated by silent periods, remains a data gap.

Permanent Threshold Shift (PTS).—When PTS occurs, there is physical damage to the sound receptors in the ear. In some cases, there can be total or partial deafness, whereas in other cases, the animal has an impaired ability to hear sounds in specific frequency ranges (Kryter 1985). Physical damage to a mammal's hearing apparatus can occur if it is exposed to sound impulses that have very high peak pressures, especially if they have very short rise times (i.e., the interval required for sound pressure to increase from the baseline pressure to peak pressure).

Relationships between TTS and PTS thresholds have not been studied in marine mammals, but are assumed to be similar to those in humans and other terrestrial mammals (Southall et al. 2007). Based on data from terrestrial mammals, a precautionary assumption is that the PTS threshold for impulse sounds (e.g., blasting) is at least 6 dB higher than the TTS threshold on a peak-pressure basis, and probably greater than (>)6 dB higher (Southall et al. 2007). The low-to-moderate levels of TTS that have been induced in captive odontocetes and pinnipeds during controlled studies have been confirmed to be temporary, with no measurable residual PTS (Kastak et al. 1999; Schlundt et al. 2000; Finneran et al. 2002a, 2005; Nachtigall et al. 2003, 2004). Very prolonged exposure to sound strong enough to elicit TTS, or shorter-term exposure to sound levels well above the TTS threshold, can cause PTS, at least in terrestrial mammals (Kryter 1985). In terrestrial mammals, the received sound level from a single non-impulsive sound exposure must be far above the TTS threshold for any risk of permanent hearing damage (Kryter 1994; Richardson et al. 1995; Southall et al. 2007). However, there is special concern about strong sounds whose pulses have very rapid rise times (e.g., explosions). In terrestrial

mammals, there are situations when pulses with rapid rise times (e.g., from explosions) can result in PTS even though their peak levels are only a few dB higher than the level causing slight TTS.

Some factors that contribute to onset of PTS, at least in terrestrial mammals, are as follows:

- exposure to single very intense sound,
- fast rise time from baseline to peak pressure,
- repetitive exposure to intense sounds that individually cause TTS but not PTS, and
- recurrent ear infections or (in captive animals) exposure to certain drugs.

Cavanagh (2000) reviewed the thresholds used to define TTS and PTS. Based on this review and SACLANT (1998), it is reasonable to assume that PTS might occur at a received sound level 20 dB or more above that inducing mild TTS. However, for PTS to occur at a received level only 20 dB above the TTS threshold, the animal would probably have to be exposed to a strong sound for an extended period, or to a strong sound with rather rapid rise time, such as blasting.

More recently, Southall et al. (2007) estimated that received levels would need to exceed the TTS threshold by at least 15 dB, on an SEL basis, for there to be risk of PTS. Southall et al. (2007) also noted that, regardless of the SEL, there is concern about the possibility of PTS if a cetacean received one or more pulses or nonpulses with peak pressure exceeding 230 dB re 1 µPa. Thus, PTS might be expected upon exposure of cetaceans to either peak pressure greater than or equal to (≥) 230 dB re 1 µPa (pulses or nonpulses) or SEL ≥198 dB re 1 $\mu Pa^2 \cdot s$ (for pulses) or SEL ≥215 dB re 1 $\mu Pa^2 \cdot s$ (for nonpulses).These estimates are all first approximations, given the limited underlying data, numerous assumptions, and species differences. Also, data have been published subsequent to Southall et al. (2007) indicating that, at least for non-pulse sounds, the "equal energy" model is not entirely correct; TTS and presumably PTS thresholds may depend somewhat on the duration over which sound energy is accumulated, the frequency of the sound, whether or not there are gaps, and probably other factors (Ketten 1994, 2012). PTS effects may also be influenced strongly by the health of the receiver's ear.

As described above for TTS, in estimating the amount of sound energy required to elicit the onset of TTS (and PTS), it is assumed that the auditory effect of a given cumulative SEL from a series of pulses is the same as if that amount of sound energy were received as a single strong sound. There are no data from marine mammals concerning the occurrence or magnitude of a potential partial recovery effect between pulses. In deriving the estimates of PTS (and TTS) thresholds quoted here, Southall et al. (2007) made the precautionary assumption that no recovery would occur between pulses.

Caution is warranted given the limited knowledge about noise-induced hearing damage in marine mammals and the lack of knowledge about TTS and PTS thresholds in many species. Avoidance reactions of belugas, along with commonly-applied monitoring and mitigation measures (seasonal/tidal closures, visual monitoring, shut downs when beluga whales and other marine mammals are detected within or approaching the "safety radii"), would reduce the probability of exposure of belugas to sounds strong enough to induce PTS, such as rock blasting. TTS has been demonstrated and studied in certain captive odontocetes and pinnipeds exposed to strong sounds (reviewed in Southall et al. 2007). There has been no specific documentation of TTS let alone PTS in free-ranging marine mammals exposed to pile driving or other impulsive activities during

realistic field conditions, although this may be due in part to the difficulties inherent in conducting such experiments.

Non-auditory physiological effects

Based on evidence from terrestrial mammals and humans, sound is a potential source of stress (Wright and Kuczaj 2007; Wright et al. 2007a,b, 2009, 2011). However, almost no information is available on sound-induced stress in marine mammals, or on its potential (alone or in combination with other stressors) to affect the long-term well-being or reproductive success of marine mammals (Fair and Becker 2000; Hildebrand 2005; Wright et al. 2007a,b). Such long-term effects, if they occur, would be mainly associated with chronic noise exposure (McCauley et al. 2000a; Nieukirk et al. 2009).

Available data on potential stress-related impacts of anthropogenic noise on marine mammals are extremely limited, and additional research on this topic is needed. The following are specific studies of noise-induced stress in marine mammals. Romano et al. (2004) examined the effects of single underwater impulse sounds from a seismic water gun (source level up to 228 dB re 1 µPa) and single short-duration pure tones (SPL up to 201 dB re 1 µPa) on the nervous and immune systems of a beluga and a bottlenose dolphin. They found that neural-immune changes to noise exposure were minimal. Although levels of some stress-released substances (e.g., catecholamines) changed significantly with exposure to sound, levels returned to baseline after 24 hr. During playbacks of recorded drilling noise to four captive beluga whales, Thomas et al. (1992) found no changes in blood levels of stress-related hormones. Long-term effects were not measured, and no short-term effects were detected. For both studies, caution is necessary when extrapolating these results to wild animals and to real-world situations given the small sample sizes, use of captive animals, and other technical limitations of the two studies. In a rea-world setting, Rolland et al. (2012) found that a reduction in ship traffic on the east coast of Canada lead to a 6 dB decrease in underwater noise which was related to a decrease in stress-related faecal hormone metabolites in the North Atlantic right whale.

Very little is known about the potential for strong underwater sounds to cause non-auditory physiological effects in marine mammals. Possible types of non-auditory physiological effects or injuries that might occur include stress, neurological effects, and other types of organ or tissue damage. The available data do not allow identification of a specific exposure level above which non-auditory effects can be expected (Southall et al. 2007), or any meaningful quantitative predictions of the numbers (if any) of marine mammals that might be affected in these ways. Evidence suggests that some marine mammal species (e.g., beaked whales) may be especially susceptible to injury and/or stranding when exposed to strong pulsed sounds. Although mass strandings of CIBW have often coincided with extreme tidal fluctuations or killer whale sighting reports (Shelden et al. 2003), during informal consultations with DOT&PF on the Windy Corner project, NMFS expressed concerns about a mass stranding of CIBW in Turnagain Arm in August 2003 that resulted in five CIBW mortalities and may have been associated with blasting activities along Turnagain Arm. Although NMFS has not officially correlated the two events, the possibility must be considered.

Other anthropogenic noise sources, specifically, naval mid-range sonar, have been linked to mass strandings of otherwise healthy cetaceans. Three dead Stejners's beaked whales that stranded

along the Alaska coast in 2013 were found to have air bubbles in their blood vessels, a condition which has been associated with acoustic trauma; blasting, seismic, and high-intensity sonar were considered as possible causes of these strandings (www.alaskapublicorg.2014/04/24/noaa - investigating-rare-whale-beachings). In a review of potential anthropogenic stressors experienced by CIBW, Norman (2011) hypothesized that belugas may react to noise from explosions by fleeing to shallower waters where they would consequently have a higher chance of stranding. Strandings definitively resulting from exposure to anthropogenic noise sources have not been recorded in Cook Inlet (76 FR 58473), although tests that would either indicate or rule out acoustic trauma have not been conducted on the majority of stranded CIBW.

Non-auditory physiological effects from noise, if they occur at all, would presumably be limited to short distances and to activities that extend over a prolonged period. Although the noise introduced to Turnagain Arm waters from the Windy Corner Project might be limited in distance travelled and numbers of days generated, it will enter a CIBW soundscape that is already full of noise from other human activities in Cook Inlet. Therefore, when considered in isolation, the noise from a single project might not have significant effects, but when combined with the noise from other sound-producing projects in Cook Inlet, it might collectively contribute to a chronically noisy environment with non-auditory physiological effects that are quite significant overall. A study of CIBW health by Becker et al. (2000) concluded that little is known about the role of multiple stressors in animal health and that future research should examine their interactions and effects on population recruitment for a declining population like the CIBW. New acoustic guidelines being developed by NMFS (discussed in following paragraph) may help in the determination of stress and other cumulative effects from noise exposure.

NMFS Acoustic Guidance for Effects of Noise on Marine Mammals NMFS uses sound exposure thresholds to determine when an activity produces sound sufficient to affect marine mammals (70 FR 1871). With these thresholds, NMFS has specified that cetaceans and pinnipeds should not be exposed to impulsive underwater sound (such as rock blasting) with SPLs exceeding 180 and 190 dB re 1 µPa RMS, respectively (NMFS 2000). These are the received levels above which the certainty of effects being non-injurious is lost. Current NMFS guidelines assume that disturbance (harassment) is likely to occur from exposure to impulse sounds at received levels ≥160 dB re 1 µPa RMS and at received levels ≥120 dB re 1 µPa RMS for exposure to continuous sounds (NMFS 2005). These criteria were established before there was any information about the minimum received levels of sounds necessary to cause auditory impairment in marine mammals. Recommendations for new noise exposure criteria for marine mammals were published in 2007 (Southall et al. 2007) and NMFS is moving toward adoption of new procedures that take some of these recommendations into account. Until the new draft guidelines are finalized, the previous threshold limits still apply (http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm).

5. Noise generated by the Windy Corner Project

The Windy Corner Project will generate noise from construction machinery operation and rock blasting. Any emergency watercraft that utilize the emergency rescue-craft access ramp created by the project would also generate in-water noise. Direct effects of noise on CIBW could potentially range from physical injury to behavioral changes to increases in acute or chronic stress. In addition, noise could indirectly affect CIBW if it affects their prey or other components of their critical habitat.

Effects of noise produced by construction machinery

The levels of in-air noise generated by various types of construction equipment are summarized in Table 12. Noise will automatically be reduced from these levels as it enters the water via the impedance contrast that reduces how much in-air sound passes through the air-water interface, and depending on the frequency. Noise that does enter the water may not be detectable above the Windy Corner ambient aquatic sound levels of 74–108 dB ra 1 µPa (Burgess 2014, Appendix 1). None of these noise levels from construction equipment are at threshold levels considered by NMFS to be harmful or injurious to marine mammals, or of levels considered to constitute harassment.

Table 12. Mean in-air noise levels for various types of construction equipment (URS 2004).

Equipment type	Mean in-air noise level at 50 ft (dB)	Equipment type	Mean in-air noise level at 50 ft (dB)
Air Compressor	81	Loader	84
Backhoe	85	Paver	89
Concrete Mixer	85	Pneumatic Tool	85
Concrete Pump	82	Pump	76
Concrete Vibrator	76	Rock Drill	98
Crane, Derrick	88	Roller	80
Crane, Mobile	83	Saw	78
Dozer	87	Scraper	88
Generator	70	Shovel	2
Grader	85	Truck	88
Jackhammer	88		

Mitigation of noise produced by construction machinery

- All construction equipment will be properly maintained in acceptable working condition to reduce noise.
- The Contractor will comply with the Municipal Noise Control Ordinance for the Municipality of Anchorage. If waivers are needed, the Contractor will acquire a noise permit.
- The Contractor will employ all possible methods to reduce noise, including having mufflers on all applicable equipment.

Effects of noise produced by blasting

Explosives will be used to blast rock at four locations in the Windy Corner Project Action Area. As discussed earlier, for impulsive noises, such as those generated by the detonation of explosives, the current numerical threshold indicative of harassment take under the ESA is 160 dB re 1 µPa RMS SPL and the current numerical threshold indicative of cetacean take by injury is 180 dB re 1 µPa RMS SPL.

DOT&PF commissioned Heat, Light, and Sound Research (HLS) to conduct an analysis of the sound that would be produced by land-based blasting activities from the Windy Corner Project. HLS used models to predict the levels of sound produced by blasting and how far they would travel through the water (HLS 2014, Appendix 2). Peak explosive energy is predicted to occur around 100 Hz. Because information on the exact weight of the explosives to be used, as well as the exact location of explosive placement was unavailable to HLS, they used a conservative/precautionary approach and modeled as if blasting occurred in the water. In reality, blasting will occur in rock on land, which will decrease the actual impact range of the sound created by the blasting. Results of the HLS models are presented in Appendix 2 and summarized in **Error! Reference source not found.** The distance from the source to the 180 dB contour (i.e., threshold for injury to CIBW from impulsive sound) is less than 0.25 mi (0.4 km) from the center of each blast site, and the distance to the 160 dB contour (i.e., threshold for CIBW harassment) is less than 0.9 mi (1.5 km) from the center of blast site. Because the 160 dB contour is greater than the 180dB contour, the Windy Corner Project Action Area therefore encompasses all areas that may be affected by underwater sounds equal to or greater than 160 dB (Figure 35). The Windy Corner ambient aquatic sound levels across all tidal stages in August 2014 were measured at 74–108 dB re 1 µPa (Burgess 2014; Appendix 1), therefore masking of blasting noise by ambient aquatic background noise will not occur.

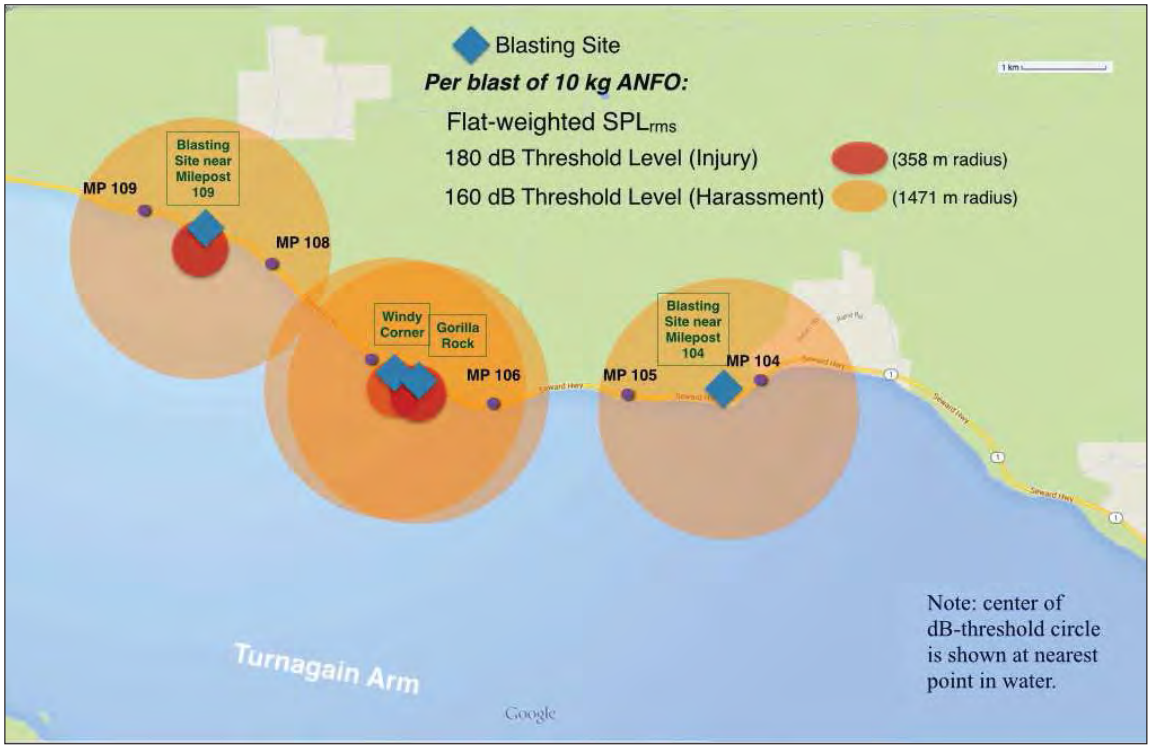


Figure 34: Summary of maximum harassment zones per 10 kg blast of ANFO. Note there is no 180-dB contour on the farthest east site (near milepost 104; HLS 2014).

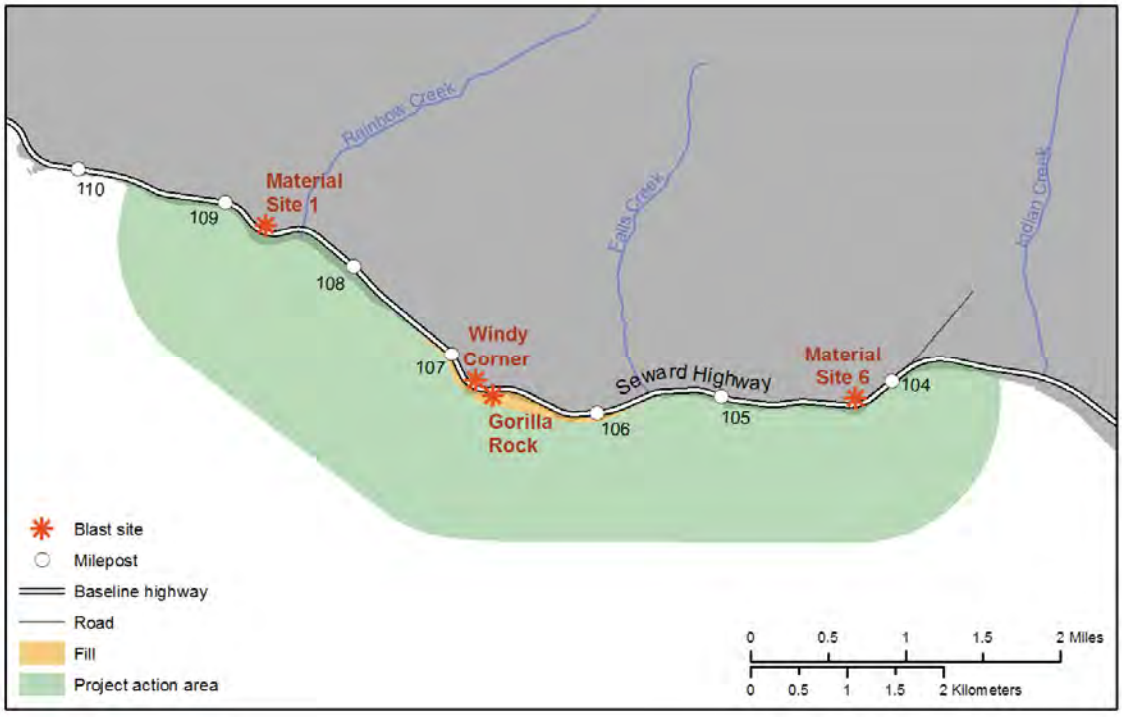


Figure 35: The inclusion of sound generated by blasting extends the Windy Corner Project Action Area from milepost 103.5 to milepost 109.5 and 4921 ft (1,500 m) into Turnagain Arm.

HLS also considered the possible effects of the noise contribution from the blast-warning air horn, and concluded it would not be significant because the impedance contrast between air and water is such that there is only limited coupling of the sound waves, and because what sound does penetrate the water is limited to a cone 13 degrees (°) from the vertical (this is the maximum, which occurs when the in-air sound is directly above the water). This cone of sound is spread out over 180° inside the water column, and the part traveling in the horizontal direction is miniscule.

There is a possibility that any marine mammals in the vicinity of blast activity may incur TTS, as sounds are expected to be as high as 180 dB re 1 µPa RMS up to 1175 ft (358 m) from the activity (Figure 34). However, sound levels which may cause PTS would occur much closer to the source. It is unlikely that belugas would be exposed to blasting at a sufficiently high level for a sufficiently long period to cause more than mild TTS. If some individuals did incur mild or moderate TTS through exposure to blasting sounds in this manner, this would very likely be a temporary and reversible phenomenon. However, even a temporary reduction in hearing sensitivity could be deleterious in the event that, for example, during that period of reduced sensitivity, a beluga whale needs its full hearing sensitivity to detect approaching predators. For this reason blasting will not occur during those times of year and tidal stages when belugas are most likely to be in the Windy Corner Project Action Area. In addition, PSOs will monitor all

blasting activities and will call a shut-down of operations if belugas or other marine mammals are seen within 4,921 ft (1,500 m) of blasting activities.

Madsen et al. (2006) argued that significant masking effects would be unlikely during impact pile driving given the intermittent nature of these sounds and short signal duration; it seems likely this would also apply to noise generated by rock blasting, which is also impulsive noise. The beluga whale's extensive vocal repertoire includes trills, whistles, clicks, bangs, chirps, and other sounds (Schevill and Lawrence 1949; Ouellet 1979; Sjare and Smith 1986a). The dominant frequencies in beluga whistles are 2–6 kHz (Sjare and Smith 1986a). Other beluga call types reported by Sjare and Smith (1986a,b) included sounds at mean frequencies ranging upward from 1 kHz. Echolocation clicks are unlikely to be masked during Windy Corner Project activities. Beluga whale echolocation signals have peak frequencies from 40-120 kHz and source levels of 206–225 dB re 1 µPa at 3.3 ft (1 m; Au et al. 1985, 1987; Au 1993). In general, most vocalizations and echolocation clicks produced by CIBW have frequency ranges above those produced at highest intensity by blasting and other construction activities (predicted at 100 Hz by HLS, Appendix 2); thus, the effects of masking are expected to be limited and will be further reduced through monitoring and mitigation efforts.

Indirect effects of noise produced by blasting blast: effect of blast noise on prey

Potential effects of exposure to anthropogenic sound on fish can be behavioral, physiological, or pathological. Behavioral effects refer to temporary and permanent changes in exhibited behavior (e.g., startle and avoidance behavior). Physiological effects involve temporary and permanent primary and secondary stress responses, such as changes in levels of enzymes and proteins. Pathological effects involve lethal and temporary or permanent sub-lethal injury. The three categories of effects are interrelated in complex ways. For example, it is possible that certain physiological and behavioral changes could potentially lead to an ultimate pathological effect on individuals (i.e., mortality). Hastings and Popper (2005), Popper (2009), and Popper and Hastings (2009a,b) provided recent critical reviews of the known effects of sound on fish, which are summarized below.

Behavioral effects include changes in the distribution, migration, mating, and "catchability" of fish populations. Fish often react to sounds, especially strong and/or intermittent low-frequency sounds. Short-duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. Hart Crowser et al. (2009) and Houghton et al. (2010) exposed caged juvenile coho salmon to sounds from vibratory pile driving with maximum peak SPLs of 177 to 195 dB re 1 µPa and SELs of 174.8 to 190.6 dB re 1 µPa. They reported no mortalities or behavioral abnormalities; pile driving did not affect the feeding ability of the juvenile coho salmon. Similarly, coho salmon exposed to impact pile driving with peak source levels of 208 dB re 1 µPa and SEL of 207 re 1 $\mu Pa^{2} \cdot s$ showed some minor startle responses, but feeding behavior was not affected, and no mortalities were observed (Ruggerone et al. 2008). Nedwell et al. (2006) reported little reaction of caged brown trout to pile driving sounds. In contrast, cod and sole held in net pens showed significant movement responses to playbacks of pile-driving noise at received peak SPLs as low as 140 dB re 1 µPa (Thomsen et al. 2012). Both species showed movement away from the sound source, but there was a decrease in response with multiple exposures.

The specific received sound levels at which permanent adverse effects to fish potentially could occur are little studied and largely unknown. However, there are currently interim physiological injury onset criteria in place for pile driving projects on the U.S. west coast (Woodbury and Stadler 2008; Stadler and Woodbury 2009). The potential for pathological damage to hearing structures in fish depends on the energy level of the received sound and the physiology and hearing capability of the species in question. For a given sound to result in hearing loss, the sound must exceed the hearing threshold of the fish for that sound (see Hastings and Popper 2005). The consequences of temporary or permanent hearing loss in individual fish on a fish population are unknown; however, they likely depend on the number of individuals affected and whether critical behaviors involving sound (e.g., predator avoidance, prey capture, orientation and navigation, reproduction, etc.) are adversely affected.

There have been some reports of fish kills during pile driving operations (e.g., Abbott and Bing-Sawyer 2002; Caltrans 2004). In a laboratory setting, Halvorsen et al. (2011) documented that pile driving signals caused tissue damage and/or death of exposed juvenile Chinook salmon. Tissue damage was not reported for studies conducted by Ruggerone et al. (2008) or Houghton et al. (2010), but Halvorsen et al. (2011) noted that these studies did not allow fish to fill their swim bladders before exposure; thus, they are not applicable to fish in the wild. A study on juvenile steelhead trout also showed no tissue damage when fish were exposed to cumulative SEL as high as 194 re 1 $\mu Pa^2 \cdot s$ or peak SPLs as high as 188 dB re 1 µPa (Oestman and Earle 2012). McCauley et al. (2003) found that exposure to airgun sound caused observable anatomical damage to the auditory maculae of "pink snapper." This damage in the ears had not been repaired in fish sacrificed and examined almost two months after exposure. On the other hand, only TTS was documented in northern pike and lake chub when exposed to seismic sounds (Popper et al. 2005), in rainbow trout after exposure to high-intensity, low-frequency active sonar sound (Popper et al. 2007), and in juvenile Chinook salmon exposed to noise in barge holding tanks (Halvorsen et al. 2009). No pathologies were observed in caged rainbow trout exposed to low- and mid-frequency sonar at received peak levels of 193 and 210 dB re 1 μPa_{rms}, respectively (Kane et al. 2010). In general, any adverse effects on fish behavior from blasting noise will likely depend on the species in question. It may also depend on the age of the fish, its motivational state, its size, and numerous other factors that are difficult, if not impossible, to quantify at this point. Mitigation strategies such as blasting only during low water and ceasing blasting activities during peak periods of spawning and migration periods will reduce the likelihood of fish experiencing negative effects from blasting noise.

The Fisheries Hydroacoustic Working Group (FHWG), composed of state and federal organizations, set an underwater injury threshold for impulse sounds (i.e., pile driving, blasting) as 206 dB SPL_{peak} and 187 dB $SEL_{cumulative}$ for fish weighing ≥0.07 ounces (oz; 1.98 grams [g]). Fish weighing <0.07 oz (1.98g) had an injury threshold set to 206 dB SPL_{peak} and 183 dB $SEL_{cumulative}$ (Stadler and Woodbury 2009).

There is increasing interest in assessing the possible direct and indirect effects of noise on invertebrate behavior, particularly in relation to the consequences for fisheries. Changes in behavior could potentially affect such aspects as reproductive success, distribution, susceptibility to predation, and catchability by fisheries. There are a few studies investigating the possible behavioral effects of exposure to impulse sounds on crustaceans and cephalopods, including those from airguns. Literature reviews of the effects of seismic sound on invertebrates were

provided by Moriyasu et al. (2004) and Payne et al. (2008). In some cases, invertebrates exhibited startle responses when exposed to seismic sounds (e.g., squid in McCauley et al. 2000a,b). In other cases, no behavioral impacts were noted (e.g., crustaceans in Christian et al. 2003, 2004; DFO 2004). There have been anecdotal reports of reduced catch rates of shrimp shortly after exposure to seismic surveys; however, other studies have not observed any significant changes in shrimp catch rate (Andriguetto-Filho et al. 2005). Similarly, Parry and Gason (2006) did not find any evidence that lobster catch rates were affected by seismic surveys. Any adverse effects on crustacean and cephalopod behavior or fisheries attributable to seismic survey sound depend on the species in question and the nature of the fishery (season, duration, fishing method).

Lethal and sub-lethal injury to organisms exposed to noise appears to depend on at least two features of the sound source: 1) the received peak pressure, and 2) the time required for the pressure to rise and decay. Generally, as received pressure increases, the period for the pressure to rise and decay decreases, and the chance of acute pathological effects increases. For the type activities planned, the pathological (mortality) zone for invertebrates is expected to be within a few meters of the sound source, at most; however, very few specific data are available on levels of sound that might damage these animals. Restricting blasting activities to low-water periods will mitigate the effects of blasting noise on invertebrates.

Mitigation of noise produced by blasting

Although the possibility cannot be entirely excluded, it is unlikely that the project would result in any cases of temporary or permanent hearing impairment to CIBW, any significant non-auditory physical or physiological effects, or any acoustic effects to CIBW prey, particularly if the following monitoring and mitigation measures are implemented (see Appendix 3 for more details):

- Blast and fill activities will not occur during those times of years that CIBW are most likely to be in the project area (April–early June, and August–October). The April–early June closure period is already covered by the March 1–June 30 closure period designed to protect migrating fish.

- Blasting activities will be limited to low-water periods, in 3-hour blocks of time centered on the low tide (i.e., 1.5 hours before and after low tide). Because there are two low tides per 24-hour day, there is the potential for two workable low-tide windows per day if low tides occur during daylight hours. No blasting will occur at or below the intertidal zone.

    - Although CIBW may occur in the Windy Corner Project Area at any tidal stage, at low tide they are more likely to be found farther east at the mouth of Turnagain Arm and in Chickaloon Bay.

    - Low tide will result in a greater distance between the blasting activities and the water and any CIBW that happen to be in the area. For example, the cove around Gorilla Rock becomes dry or almost dry during low tide (the extent of drying depends on the lunar phase).

  - Sound will not travel as far in water during low tide because more sound will be absorbed by the dewatered mudflats and because sound doesn't travel as far in shallow water**.**

- Blasting activities will only take place when PSOs are on duty.

- Blasting activities will cease if a CIBW or other marine mammal is seen within the 4,921 ft (1,500 m) safety zone.

Effects of noise produced by vessel use of the rescue-craft ramp

The construction of the rescue-craft ramp may lead to an increase in watercraft in the project area, which in turn would create noise. Small vessels have been reported to produce sound in the 250-1,000 Hz frequency range, at source levels of 151 dB re 1 µPa at 1 m (Richardson et al. 1995). Beluga responses to vessels are quite variable ranging from tolerance to extreme sensitivity, depending on the whale's activity and experience, its habitat, and boat type and behavior (Fraker 1978; Richardson et al. 1995). Although belugas in the St. Lawrence River occasionally show positive reactions to ecotourism boats by approaching and investigating these boats, one study found that belugas surface less frequently, swim faster, and group together more in the presence of boats (Blane and Jaakson 1994). The degree of disturbance varied with the number and speeds of the approaching vessels, the activity and age of the whale (young belugas were less likely to respond than adults), and location (Blane 1990; Blane and Jaakson 1994). Feeding or traveling belugas were less likely to react, but when they did, responses were typically stronger; the fact that they use high traffic areas should not be interpreted as a lack of disturbance effects (Blane 1990). Caron and Sergeant (1988) noted that a decrease in beluga numbers coincided with an increase in boat activity in one part of the St. Lawrence River, but no causative relationship could be established. Declines in abundance and possibly reduced reproductive success have been reported for dolphins disturbed by tourism vessels (Bejder 2005; Bejder et al. 2006a,b). Lerczak et al. (2000) reported that vessel pursuits and tagging of belugas only caused short-term disturbance, and that whales did not leave the immediate study area even when harassed. Lesage et al. (1999) examined the effect of vessel noise on belugas in the SLE Québec. They used controlled experiments to record the surface behavior and vocalizations of beluga whales before, during, and after the passing of two different types of boats—an outboard motorboat moving rapidly and erratically on an unpredictable course, and a ferry moving regularly and slowly through the study area on a predictable route. Beluga whales changed their vocalizations in response to both vessels, and changes included the use of higher-frequency vocalizations, a greater redundancy in vocalizations (more calls emitted in a series), and a lower calling rate. The lower calling rate persisted for longer during exposure to the ferry than to the motorboat. Scheifele et al. (2005) also found that beluga whales changed the intensity of their vocalizations with increased noise levels in the St. Lawrence River.

Small crafts operating in Cook Inlet are not regulated by NMFS, although NMFS guidelines recommend that vessels maintain a minimum distance of 100 yd (91.4 m) from all marine mammals and federal law prohibits the pursuit of marine mammals (http://alaskafisheries.noaa.gov/protectedresources/mmv/guide.htmcite). Vessels needing to approach CIBW at closer distances for research are required to have an MMPA/ESA Scientific Research permit with a limited number of takes by approach. Sanctioned use of the Windy

Corner ramp for search-and-rescue operations is anticipated to be very rare and limited to emergencies in the ice-free season.

The creation of the rescue-craft ramp could aid in the stranding response to live or dead stranded CIBW in this section of Turnagain Arm by allowing NMFS stranding responders increased access to stranded marine mammals.

Mitigation of noise produced by vessel use of the rescue-craft ramp

The effects of noise produced by the use of the rescue-craft ramp will be mitigated by controlling access to and appropriate use of the rescue-craft ramp.

- Access to the rescue-craft ramp will be controlled via a locked gate or locked posts preventing access and use by the general public.

- Signs will be posted at the ramp to inform the public that the ramp is for emergency rescue-craft use only.

- NMFS-approved signs will be posted with the NMFS Office of Law Enforcement hotline number for the public to report illegal harassment of CIBW or other marine mammals.

- NMFS-approved signs will be posted with the NMFS Marine Mammal Stranding Network hotline numbers for the public to report live or dead strandings of CIBW or other marine mammals.

6. Direct and indirect effects of Windy Corner Project from illegal harassment

The Windy Corner Project is not anticipated to lead directly to an increase in any illegal harassment. There may be an indirect effect however if the construction of the rescue-craft ramp leads to an increase in unsanctioned (i.e., recreational) watercraft in the project area. This includes an increase in boats, jet skis, paddle boarders, windsurfers, or kayakers. This could result in increased noise, as well as increased risk of beluga injury or mortality from collision. Beluga reactions to vessels are quite variable, but small vessels that travel at high speeds and frequently change course increase the danger of ship-strike for CIBW (NMFS 2008a). In addition, the creation of parking and wildlife viewing areas for the Windy Corner Project may lead to an increase in beluga watching and illegal harassment from shore.

Mitigation of effects from illegal harassment

- Access to the rescue-craft ramp will be controlled via a locked gate or locked posts preventing access and use by the general public.

- Signs will be posted at the ramp to inform the public that the ramp is for emergency rescue-craft use only.

- NMFS-approved signs will be posted at the rescue-craft ramp and at beluga viewing areas with the NMFS Office of Law Enforcement hotline number for the public to report illegal harassment of CIBW or other marine mammals.

- NMFS-approved signs will be posted at the rescue-craft ramp and at beluga viewing areas with the NMFS Marine Mammal Stranding Network hotline numbers for the public to report live or dead strandings of CIBW or other marine mammals.

7. Direct and indirect effects of Windy Corner Project from injury or mortality

The potential for CIBW injury or mortality from blasting noise is described above in the noise section, along with the mitigation measures that will be implemented to prevent this from happening.

There is also a remote possibility that CIBW could be injured or killed from rock falling into the water during blasting or fill placement. There is practically no likelihood of this happening however due to the construction methods used and the mitigation measures employed on the Windy Corner project. With respect to non-noise related injury from blasting, only the amount of explosives necessary to break the rock will be used in each hole. The remaining portion of each hole will be backfilled with cuttings from the drilling operation. A large drill rig (land-based) is used to bore a large hole down into the rock. This drilling process creates a pile of 'overburden' or material generated by drilling the hole. This material will be used to backfill the hole after the necessary amount of explosives are placed, to ensure that the hole is capped off. The combination of drilling and capping will reduce the possibility of rock flying into the water. The purpose of the blasting is to crack the rock, not "blow it up." After each blast, the Contractor's blaster shall observe the area of the blast for five minutes to guard against injury or damage to the construction crew due to rockfall. The blaster shall then inspect the blast area to determine that all explosive charges were detonated. After this inspection, the blaster will sound an audible horn as an all-clear signal to alert all personnel that the area is safe for entry. Blasting must occur during daylight hours to permit the blast site to be inspected after the blast to verify that the area is safe. Because the rock generated from the blasts can only be placed when the mudflats are free of ice, and due to the lack of material staging space in the project area, blasting can only occur during the ice-free season.

As with any earth-moving activities along the waterline, such as at the Port of Anchorage (Figure 10), there is the possibly that a CIBW moving along the shoreline could be struck as fill material is being placed. Seasonal and tidal limitations on fill activities will reduce the probability of CIBW being in the Windy Corner Area, and all fill activities will be monitored by PSOs who will immediately call for a shutdown if a beluga or other marine mammals is seen within 4,921 ft (1,500 m) of fill activities. During monitoring of CIBW during fill activities at the Port of Anchorage in 2006, 80% of CIBW sightings were within 1,640 ft (500 m) of in-water construction activities yet no incidents of debris falling on CIBW were reported, although at times individual belugas approached within meters of filling activities (Markowitz and McGuire 2007).

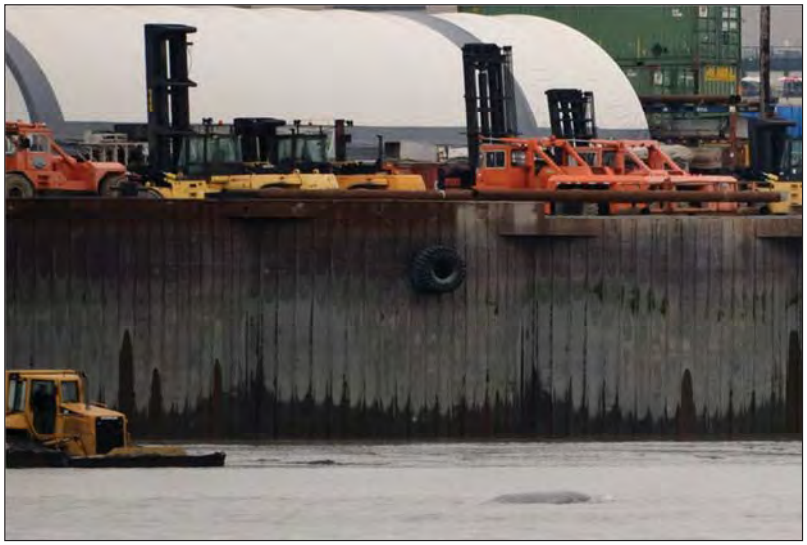


Figure 36: Beluga whales around earth-moving activity at the Port of Anchorage (photo: T.McGuire, NMFS MMPA/ESA permit #18016).

Mitigation of injury or mortality

See Appendix 3 for a detailed mitigation and monitoring plan.

- Blast and fill activities will not occur during those times of years that CIBW are most likely to be in the project area (April–early June, and August–October). The April–early June closure period is already covered by the March 1-June 30 closure period designed to protect migrating fish.

- Blasting and fill activities will be limited to low-water periods, in 3-hour blocks of time centered on the low tide (i.e., 1.5 hours before and after low tide). Because there are two low tides per 24-hour day, there is the potential for two workable low-tide windows per day if low tides occur during daylight hours.

- No blasting will occur at or below the intertidal zone.

- Blasting and fill activities will only take place when Protected Species Observers (PSOs) are on duty.

- Blasting and fill activities will cease if a CIBW or other marine mammal is seen within the 4,921 ft (1,500 m) safety zone.

C. Direct and Indirect Effects of the Windy Corner Project on CIBW Critical Habitat

The potential direct and indirect effects of the Windy Corner Project on CIBW Critical Habitat are considered with respect to each of the five PCEs of critical habitat.

PCE 1: Intertidal and subtidal waters of Cook Inlet with depths <30 feet (MLLW) and within 5 miles of high and medium flow anadromous fish streams.

Anadromous fish streams do not exist within the Windy Corner Project Action Area, therefore this component of CIBW critical habitat will not be directly affected. The project does have the potential to indirectly affect nearby anadromous streams via increased turbidity, sedimentation, pollution, or noise; however, these effects will be reduced through the mitigation measures presented in previous sections.

PCE 2: Primary prey species consisting of four species of Pacific salmon (Chinook, sockeye, chum, and coho), Pacific eulachon, Pacific cod, walleye pollock, saffron cod, and yellowfin sole.

Adult fish use Turnagain Arm as a primary migration route, returning to spawning streams outside of the project area, such as Rabbit Creek, Potter Creek, Indian Creek, the Twentymile River, and Bird Creek. The proposed project is not anticipated to negatively impact fish passage within Turnagain Arm. The project has the potential to affect primary prey species via habitat alteration, pollution, noise, and injury/mortality; however, these will be reduced through the mitigation measures presented in previously. Potential adverse effects during construction would primarily be related to increased turbidity of Turnagain Arm waters adjacent to embankment construction, and net loss of habitat. Given that anadromous fish passage in Turnagain Arm will not be blocked by the project, and that critical marine fish species have not been documented in the area, DOT&PF assumes that adverse effects to EFH will not be significant. DOT&PF stated during the March 2013 TAG meeting that NOAA had relayed it had no concerns about EFH in the Windy Corner Project Action Area.

PCE3: Waters free of toxins or other agents of a type and amount harmful to CIBW.

The project has the potential to affect CIBW and their prey primary prey species via pollution during fill placement; however, this will be reduced through the mitigation measures presented in previous section.

PCE4: Unrestricted passage within or between the critical habitat areas.

Because fill activities for the Windy Corner Project will take place along the length of the existing shoreline and not perpendicular to the shoreline or jutting out into Turnagain Arm, the habitat alteration from the Windy Corner Project is not anticipated to negatively impact CIBW passage within Turnagain Arm. Noise generated by blasting activities has the potential to temporarily restrict passage of CIBW through the project area, however this will be reduced through the mitigation measures presented in previous sections.

PCE5: Waters with in-water noise below levels resulting in the abandonment of critical habitat areas by CIBW.

Noise will be generated by the Windy Corner Project. Although the noise introduced to Turnagain Arm waters from the Windy Corner Project might be limited in distance travelled and numbers of days generated, it will enter a CIBW soundscape that is already quite full of noise from other human activities in Cook Inlet. Therefore, when considered in isolation, the noise from a single project might not have significant effects, but when combined with the noise from other sound-producing projects in Cook Inlet, it might collectively contribute to a chronically noisy environment with non-auditory physiological effects that are quite significant overall.

Monitoring and mitigation will reduce the exposure of CIBW to noise, thus minimizing the likelihood that CIBW abandon this area of critical habitat. See Appendix 3 for details.

D. Cumulative Effects of the Windy Corner Project on CIBW and Their Critical Habitat

Cumulative effects – As defined in the ESA, cumulative effects are future state, tribal, local, or private activities, not involving federal activities, which are reasonably certain to occur within the action area of the proposed action.

In addition to the Windy Corner Project, DOT&PF in conjunction with FHWA is planning improvements along several sections of the Seward Highway along Turnagain Arm over the next few of years (Figure 11). The proposed projects are being designed and permitted as separate projects, and will address safety concerns and other improvements along the Seward Highway. The majority of these projects will not involve in-water work and those projects would not impact CIBW. The proposed highway improvement projects along the Turnagain Arm include:

Seward Highway MPs 99-105 Improvements

This proposed project involves rehabilitating the pavement structural section of the roadway. No work below MHW would occur in Turnagain Arm.

Seward Highway: MP 75-90 Road and Bridge Rehabilitation.

In-water work, including pile driving, within Turnagain Arm is proposed for this project and a Biological Assessment is being prepared.

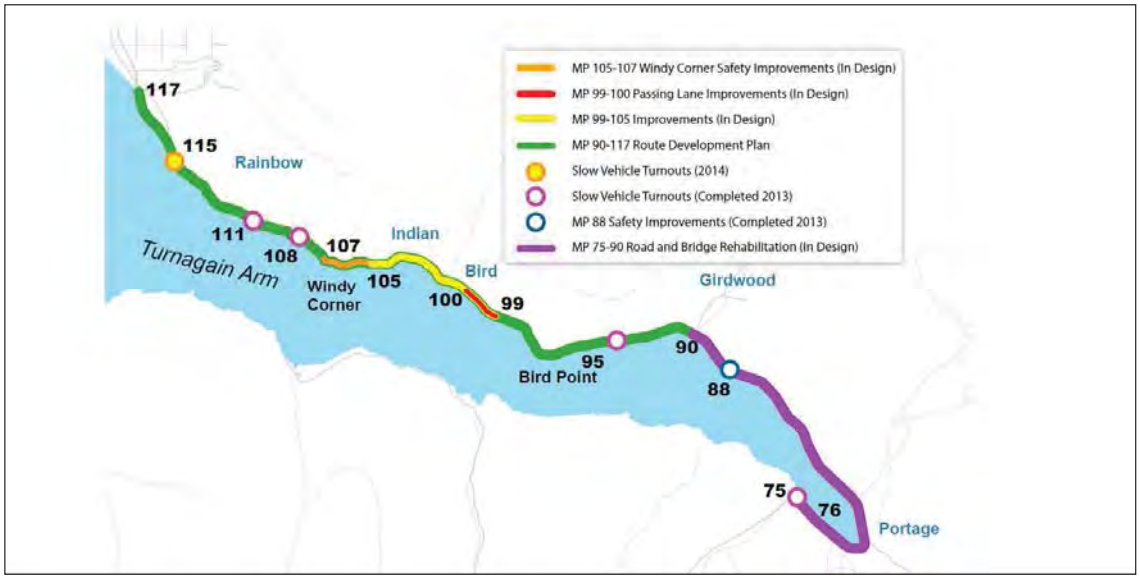


Figure 37: Current and proposed DOT&PF projects along the Seward Highway Corridor.

Concerns about the total number of acres of wetland filled and cumulative hydrological changes (e.g., channel movements, current velocity) brought about by the sum of the many Seward Highway improvements projects was expressed in 2004 by the US Army Corps of Engineers and the USFWS (DOT&PF 2004), however it should be noted that this was with respect to the NEPA definition of cumulative effects. The National Environmental Policy Act (NEPA) defines cumulative effects as "the incremental impact of the action when added to other past, present, and reasonably forseeable future actions regardless of what agency or person undertakes such actions" (40 CFR Part 1508, Sec 7). The definition of cumulative effects used by the ESA and required in this BA do not take the effects of multiple Seward Highway projects into account, because this ESA definition of cumulative effects is restricted to effects within the project action area involving "future state, tribal, local, or private activities, not involving federal activities, which are reasonably certain to occur within the action area of the proposed action." In addition, the involvement of FHWA means that these DOT&PF projects involve federal activities and do not fall under the ESA definition of cumulative effects.

Aside from the Windy Corner Project, to DOT&PF's knowledge there are no other future state, tribal, local, or private activities that are reasonably certain to occur within the Windy Corner Project Action Area, therefore there are no cumulative effects of this project to consider in the BA.

E. Summary of Effects of the Action

Table 13 summarizes the information in the preceding sections regarding the possible effects of the Windy Corner Project with respect to CIBW and their critical habitat.

Table 13. Possible effects to Cook Inlet beluga whales and their critical habitat resulting from the Windy Corner Projects, including location, project activity, project phase, and relative duration of effect.

Effects	Type of effect	Location	Activity	Phase of activity	Relative duration of effect (short-term <1 year)
Habitat alteration	• direct	• onshore • intertidal	• blasting • fill	• construction • operation	• short-term • long-term
Pollution	• direct	• water • air	• fill	• construction	• short-term
Reduction in availability or quality of prey species	• indirect	• intertidal • off shore	• blasting • fill	• construction • operation	• short-term • long-term
Noise	• direct • indirect	• onshore • intertidal • offshore	• blasting • construction equipment • use of rescue-craft ramp	• construction • operation	• short-term • long-term
Illegal harassment	• indirect	• offshore	• use of rescue-craft ramp	• operation	• long-term
Injury or mortality	• direct	• intertidal • off shore	• blasting • fill • use of rescue-craft ramp	• construction • operation	• short-term • long-term

VI. DETERMINATION OF EFFECT

For each species, there are three possible determinations of effects, as defined by the ESA:

1. **No effect** – The proposed action or interrelated or interdependent actions will not affect (positively or negatively) listed species or their habitat.

2. **May affect, not likely to adversely affect** – The proposed action or interrelated or interdependent actions may affect listed species or their habitat, but the effects are expected to be insignificant, discountable, or entirely beneficial. *Insignificant effects* relate to the size of the impact and should never reach the scale where a take will occur. *Discountable effects* are those that are extremely unlikely to occur. Based on best judgment, one would not 1) be able to meaningfully measure, detect, or evaluate insignificant effects; or 2) expect discountable effects to occur. *Beneficial effects* are contemporaneous positive effects with no adverse effects to listed species.

3. **May affect, likely to adversely affect** – The proposed action or interrelated or interdependent actions may have measurable or significant adverse effects on listed species or their habitat. Such a determination requires formal ESA Section 7 consultation.

DOTP&F concludes that the proposed Windy Corner Project, and the various actions associated with it; Table 14) ***may affect, but is not likely to adversely affect, the CIBW***. Mitigation measures (Section V and Appendix 3) will be implemented throughout the project to reduce CIBW exposure to the effects of these actions.

Table 14. Windy Corner Project actions, potential effects, and determination of effects on CIBW and critical habitat.

Action	Potential effect	Mitigation measures proposed?	Determination
Fill	• habitat alteration • pollution • reduction in availability or quality of prey species • injury or mortality • noise	yes	May affect, not likely to adversely affect
Blasting	• habitat alteration • reduction in availability or quality of prey species • noise • injury or mortality	yes	May affect, not likely to adversely affect
Vessel use of rescue-craft ramp	• noise • illegal harassment • injury or mortality	yes	May affect, not likely to adversely affect

A. Destruction or Adverse Modification Standard for Critical Habitat

For critical habitat, NMFS relies upon the statutory provisions of the ESA to complete the analysis of effect of an action with respect to critical habitat. NMFS will evaluate "destruction or adverse modification" of critical habitat by determining *if the action reduces the value of critical habitat for the conservation of the species.*

The proposed Windy Corner Project is not likely to destroy or adversely modify CIBW critical habitat to the extent that the critical habitat will no longer remain functional or able to serve its intended conservation role for CIBW. Therefore, DOT&PF concludes the ***project may affect, but is not likely to adversely affect CIBW critical habitat*** within the action area (Table 15).

Table 15. Determination of the effects of the Windy Corner Project on CIBW and its critical habitat.

Species/DPS	Listing status	Determination
Cook Inlet beluga whale	Endangered	***May affect, not likely to adversely affect***
Cook Inlet beluga whale critical habitat	Designated	***May affect, not likely to adversely affect***

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APPENDIX 1. AMBIENT UNDERWATER SOUND LEVELS MEASURED AT WINDY CORNER, TURNAGAIN ARM, ALASKA (GREENERIDGE SCIENCES, INC.)

APPENDIX 2. ACOUSTIC MODELING SEWARD HIGHWAY, MP105-107, WINDY CORNER (HEAT, LIGHT, AND SOUND RESEARCH)

APPENDIX 3. MONITORING AND MITIGATION PLAN

The "will affect, not likely to adversely affect" CIBW determination made by DOT&PF with respect to the Windy Corner Project is based on monitoring and mitigation. The overall purpose of the monitoring and mitigation efforts is to reduce exposure of the CIBW to Windy Corner Project activities by reducing the spatial and temporal overlap of project activities and CIBW occurrence. As discussed in Section V, those activities that are of greatest concern with respect to CIBW are blasting and filling. The following provides detailed information about the monitoring and mitigation measures that are an integral part of the Windy Corner Project.

1. Design Modification

The current design was selected from over ten possible project designs considered by DOT&PF. It was selected in part because it minimized the amount of total acres of mudflats that would have to be filled, resulting not only in reduced habitat loss but also a lower potential for disturbance from in-water construction activities. Because less fill material is required, this design also reduces the amount of blasting required. DOT&PF has conducted multiple resource agency technical advisory group (TAG) meetings, with one result being that DOT&PF shifted the proposed highway and railroad realignments to be much closer to shore to minimize impacts to Turnagain Arm and the CIBW.

2. Seasonal Restrictions

In-water construction activities (e.g., blasting and filling) that have the potential to injure or harass marine mammals will be scheduled to coincide with seasons when CIBW are least-likely to be within or near the project area. Seasonal patterns of CIBW occurrence in the Windy Corner Project Action Area were summarized in Section III. Blasting and fill activities will not occur April-early June, or August-October. These activities will be restricted to June, July, and possibly November, December, January, and February.

3. Tidal Restrictions

In-water construction activities (e.g., blasting and filling) which have the potential to injure or harass marine mammals will be scheduled to coincide with tidal stages when CIBW are least-likely to be within or near the project area. Tidal patterns of CIBW occurrence in the Windy Corner Project Action Area were discussed in Section III. Blasting and fill activities will not occur during high, falling, or rising tidal stages. These activities will be limited to low-water periods, in 3-hour blocks of time centered on the low tide (i.e., 1.5 hours before and after low tide). Because there are two low tides per 24-hour day, there is the potential for two workable low-tide windows per day if low tides occur during daylight hours.

4. Acoustic Modelling to Determine Appropriate Safety Zones

Acoustic modelling was used to determine appropriate safety and disturbance zones for CIBW and other marine mammals around Windy Corner Project blasting activities. DOT&PF commissioned Heat, Light, and Sound Research (HLS) to conduct an analysis of the sound that would be produced by land-based blasting activities from the Windy Corner Project. HLS used models to predict the levels of sound produced by blasting and how far this sound would travel

through the water. Results of the HLS models are presented in Appendix 2 and summarized in Figure. The distance from the sound source to the 180 dB contour (i.e., threshold for injury to CIBW from impulsive sound) is less than 0.2 mi (0.4 km) from the center of each blast site, and the distance to the 160 dB contour (i.e., threshold for CIBW harassment) is less than 0.9 mi (1.5 km) from the center of blast site. The Windy Corner ambient aquatic sound levels across all tidal stages in August 2014 were measured at 74-108 dB re 1 µPa (Burgess 2014, Appendix 1), therefore masking of blasting noise by ambient aquatic background noise will not occur, and 0.9 mi (1.5 km) will be used as a minimum safety zone for all marine mammals.

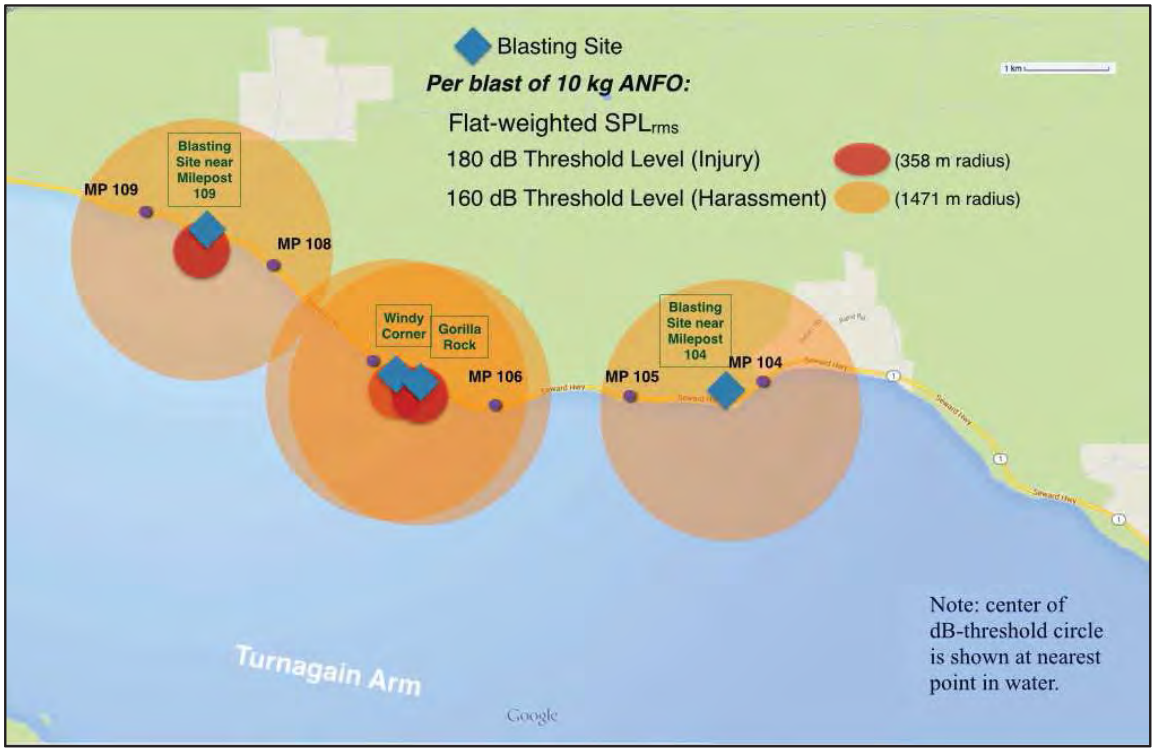


Figure A1. Windy Corner Project summary of maximum harassment zones per 10 kg blast of ANFO. Note there is no 180-dB contour on the farthest east site (near milepost 104: HLS 2014).

1. Monitoring of Activities with Potential to Injure or Disturb

Land-based Visual Monitoring

Land-based visual monitoring for CIBW and other marine mammals will be conducted during all blasting and fill activities associated with the Windy Corner Project. Land-based observation stations will be established to monitor safety zones during all blasting and fill activities. Observation stations will be located at shore-sites MS1, MS6, Windy Corner, and Gorilla Rock

(Figure A1). Although protected species observers (PSOs) will focus on the 1.5 km safety zone around each blast site, they will also monitor to the 1.9 mi (3 km) average detection distance previously estimated for this general location (Markowitz et al. 2007) to allow the PSOs to observe marine mammals that may be approaching the project area from the north or south. Methods used by PSOs to record marine mammal observations and environmental conditions will be the same as those used during other recent land-based studies (Funk et al. 2005; Nemeth et al. 2007; Prevel-Ramos et al. 2008, Markowitz et al. 2007, Markowitz and McGuire 2007, McGuire and Bourdon 2009, McGuire et al. 2011). PSOs will scan the area with a combination of the unaided eye, 7x50 binoculars equipped with an internal compass, and a 20 x 60 spotting scope. All PSOs will have prior experience observing marine mammals and will also undergo project-specific training. Observations will be limited to daylight hours and will cease if environmental conditions limit the PSOs' ability to detect whales in the 3-km zone (i.e., fog, heavy rain, snow, strong winds, whitecaps). Basic sighting information collected at each observation station will include date, time, species and number of marine mammals sighted, primary and secondary behavior, swimming formation, and environmental conditions. Locations of marine mammals within the surveyed area will be determined using the compass bearing in the binoculars to place animals in 1 km^2 grid cells overlaid onto a map of the project area. Distance between marine mammals and Windy Corner Project activities will be noted. All PSOs will have direct communication (via two-way radio) with each other and with the on-duty Windy Corner Project construction managers to initiate shut-down procedures if necessary. The exact protocols for PSOs will be further developed in consultation with NMFS as the details of the Windy Corner construction plan and schedule are finalized.

Ramp-Up Procedures

A trained PSO will be on watch at each active blast or fill site for 30 minutes prior to blasting or fill activity. Blasting or fill activities will not commence if marine mammals are seen in the 3 km monitoring zone during the 30-minute ramp-up period. PSOs will give the all-clear to construction crews after 30 minutes of observations without marine mammals.

Shut-Down Procedures

The monitoring and safety zones will be monitored throughout all blasting and filling activities. If a marine mammal is observed entering or about to enter these zones, operations will be suspended until the animal is clear of the zone. Monitoring of the zone will continue for 30 minutes following the completion of blasting or filling.

Team Briefing

In the weeks preceding seasonal construction activities likely to affect belugas (i.e., blasting and fill), Windy Corner project managers, construction supervisors, and the PSO team will attend a briefing to clearly define the responsibilities of each party, discuss the objectives of the marine mammal monitoring and mitigation program, define the chains of command and points of contact, and review operational procedures. NMFS will be invited to participate in the meeting.

2. Reporting

DOT&PF will formally notify the NMFS Alaska Region prior to the seasonal commencement of blasting and fill activities for the Windy Corner Project.

During construction, brief monthly progress reports of activities, including marine mammal and monitoring work, and other pertinent information will be provided to NMFS. Any significant observations concerning impacts to marine mammals will be transmitted to NMFS immediately or as soon as possible. A preliminary report on activities and results of the monitoring and mitigation program will be submitted to NMFS within 90 days after the termination of the construction season. The report will provide summaries of the dates and locations of construction operations and details of marine mammal sightings (dates, times, locations, activities, and associated construction activities). All technical reports will provide full documentation of methods, results, and interpretation of all monitoring tasks. The draft final report may be subject to a review process by NMFS. All progress and final reports will be made publically available on the Windy Corner Project Website and on the NMFS Alaska Region Cook Inlet Beluga Website.

3. Stranding and Harassment Response Plans

Windy Corner PSOs will immediately notify NMFS and the Alaska Marine Mammal Stranding Network of any stranded marine mammals are observed. If requested/authorized by NMFS, PSOs would render assistance with any stranding response. In the event of a stranding in the Windy Corner Project Action Area, all project activities will cease until NMFS is consulted.

Windy Corner PSOs will immediately notify the NMFS Office of Law Enforcement if they witness any marine mammal harassment, such as from sightseeing planes, paddle boarders, boaters, hunters, etc.

4. Coordination

PSOs with the Windy Corner Project will coordinate with CIBW research projects that may be occurring in the areas, such as NMFS aerial surveys and the LGL CIBW Photo-ID Project. This coordination will be to share results and to minimize potential conflicts so that activities of one effort do not negatively impact efforts of the other (e.g., coordinate activities so blasting doesn't occur on a day that NMFS is flying an aerial survey of Turnagain Arm). PSOs will also coordinate with any other monitoring efforts going on in the area. For example, if PSOs for the Seward Highway Milepost 75-90 project are monitoring during the same time, observers on the two projects could alert each other when CIBW were traveling up or down the Arm between monitoring areas.

Attempts will be made to coordinate activities on various DOT&PF projects in Turnagain Arm to minimize cumulative impacts associated with each other (e.g., blasting at Windy Corner and pile driving MP 75-90) and with development projects at other locations in Cook Inlet.

APPENDIX H

Essential Fish Habitat Consultation

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Boydston, Mark A (DOT)

From: Matthew Eagleton - NOAA Federal <matthew.eagleton@noaa.gov>
Sent: Thursday, February 14, 2013 3:59 PM
To: Boydston, Mark A (DOT)
Cc: Barbara Mahoney - NOAA Federal
Subject: Re: Seward Highway Milepost 105 to 107 Saftey Improvements at Windy Corner / Preliminary material site and geotechnical investigations

Mark,

No EFH concerns; please check with our beluga whale experts (cc'd). As a reminder, potential impacts on EFH and any adverse effect EFH determination rests with your agency or the federal action agency, not with NOAA.

Matt

On Thu, Feb 14, 2013 at 1:58 PM, Boydston, Mark A (DOT) <mark.boydston@alaska.gov> wrote:

To: Matt Eagleton, EFH specialist

NOAA Fisheries Alaska

Matt,

In connection with the proposed Seward Highway Milepost 105 to 107 Safety Improvements at Windy Corner project, we are requesting your approval, subject to all required environmental permits and special provisions, to commence subsurface geotechnical soil investigation along the highway and off-shore between June 1 and September 30, 2013.

Please see the attached documents which explain the scope for the proposed geotechnical investigations and anticipated potential impacts to Essential Fish Habitat in the proposed project area. The purpose of this email is to determine what permits and clearances you would require for the proposed work so we can make the appropriate permit applications and adjust our planning accordingly.

We are also sending similar emails to the Army Corps of Engineers, Department of Fish and Game, U.S. Fish and Wildlife Service, and Chugach State Park. If you have questions or need more information please contact me at 269-0524 or by email.

Mark Boydston, Environmental Impact Analyst II

Alaska Dept. of Transportation and Public Facilities

Preliminary Design and Environmental Section
P.O. Box 196900, Anchorage, Alaska 99519-6900

Phone 907.269.0524| Fax 907.243.6927

APPENDIX I

Public Involvement Materials

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ALASKA
DEPARTMENT OF TRANSPORTATION
AND PUBLIC FACILITIES

TITLE VI REPORT

Section: Highway Design **Region**: Central

Prepared/Facilitated by: _Brooks & Associates_____

Meeting Location: Girdwood Community Center **Date**: 04/24/2014 **Time**: 6-8 pm

Project No. (Federal/State): 56631/NH-0A3-1(34)

Project Name: Seward Highway: MP 105-107 Windy Corner

Purpose (check all that apply):

_X__ Public Meeting ____ EIS ____ *CAG (Citizen's Advisory Group)

____ Project Scope ____ EA ____ Other: _____

Method of advertisement: Advertising: *Anchorage Daily News*, 4/16/14 (attached); *Peninsula Clarion* 4/13/14 (attached); *Turnagain Times* 4/17/14 (attached); public service announcement requests sent to radio stations KWHL-FM, KBBO-FM, KEUL-FM, KNBA-FM, and to GCI Cable TV; constant contact email 4/10/14 and 4/23/14; ADOT&PF online notice and online calendar 4/10/14; website home page notice 4/9/14. Other: Postcard mailer sent to 1470 individuals, elected officials, regulatory and government agencies (postcard attached, mailing list on file); email notice sent by the Anchorage Federation of Community Councils 4/20/14; *Anchorage Daily News* online calendar 4/10/14; Facebook update 4/10/2014; Facebook advertisement campaign 4/15/14 to 4/24/14.

Attach meeting announcement/advertisement(s)

Number of people present at the public meeting: 29 people signed in (attach copy of sign-in sheet)

Number of Minority present: __1_____ Number of Women present: 8_____

Was an interpreter required? **No**

If **yes**, for what language(s) _____

- Describe Title VI issues (potential disparate impact(s)), if any.

_____

_____

_____

- If applicable, were Title VI issues addressed in the meeting? How?

- If applicable, were Title VI issues resolved? If not, please explain.

- Other Comments:

***Total number of citizens on CAG**: _____

***CAG Breakdown**

Caucasian		Black		Hispanic		Ak. Native		Am. Indian		Asian	
M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**

Pacific Islander		Other	
M	**F**	**M**	**F**

*This information is **voluntary**. Its purpose is to ensure fair and equal representation by the public in all projects and programs administered by the Alaska Department of Transportation and Public Facilities.

ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

PUBLIC MEETING

SIGN IN SHEET

Project Name: **Seward Highway: MP 105-107 Windy Corner,** Project No. 56631/NH-0A3-1(34) Date: **Thursday, April 24, 2014**

NAME (PLEASE PRINT)	ADDRESS/EMAIL (to receive project notices, you MUST provide)	PHONE	*GENDER (M/F)	*RACE (W, AN, N, B, H, A, P, O)
DAVID EVANS	6010 AUSTRIA DR ANCHORAGE AK 99516 DAVID_EVANS@GCI.NET	3498373	M	W
Rick Mason	P.O. box 110888 Anch 99511 rmason@alaska.com	349-3064	M	W
Diana Livingston	PO Box 580 Girdwood 99587	7832128	F	W
Lynne Doran	ldoran@arcalaska.net	783 0771	F	W
Richard Parry	Box 105 Girdwood AK 99587	441-1613	M	W
Anne Brooks	on file		F	W

***RACE CATEGORIES: WHITE (W), ALASKA NATIVE (AN), NATIVE AMERICAN (N), BLACK (B), HISPANIC (H), ASIAN (A), PACIFIC ISLANDER (P), and OTHER (O)**

revised: March 2005

*This information is **voluntary**. Its purpose is to ensure fair and equal representation by the public in all projects and programs administered by the Alaska Department of Transportation and Public Facilities.

Project Name: **Seward Highway: MP 105-107 Windy Corner,** Project No. 56631/NH-0A3-1(34) Date: **Thursday, April 24, 2014**

NAME (PLEASE PRINT)	ADDRESS/EMAIL (to receive project notices, you MUST provide)	PHONE	*GENDER (M/F)	*RACE (W, AN, N, B, H, A, P, O)
Kristen Hansen	4040 B St. Anchorage, AK 9952	562-20	F	W
Bill Evans	3036 Kingfisher Pr Anch AK 99502	223-2396	M	W
John	G. Creek AK		M	A
Alan Dwyer	PO Box 348 Girdwood	783-22662	M	
Michael Montague	P.O. Box 371 Girdwood, Ak 99587	783 2086	M	W
George Stewart	4431 Edinburgh Dr Anchorage 99502	522-1062	M	W
Konrad Mittelstadt	170 Old Johns Rd Indian, AK 99540	—	M	
Aaron Jungemele	ADOT/PF		M	W
Tom Carpenter	Granite PO Box 1017 Girdwood		M	W
David Griffin	david.griffin@alaska.gov	269-8696	M	W

***RACE CATEGORIES: WHITE (W), ALASKA NATIVE (AN), NATIVE AMERICAN (N), BLACK (B), HISPANIC (H), ASIAN (A), PACIFIC ISLANDER (P), and OTHER (O)**

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Project Name: **Seward Highway: MP 105-107 Windy Corner,** Project No. 56631/NH-0A3-1(34) Date: **Thursday, April 24, 2014**

NAME (PLEASE PRINT)	ADDRESS/EMAIL (to receive project notices, you MUST provide)	PHONE	*GENDER (M/F)	*RACE (W, AN, N, B, H, A, P, O)
DAVE + CAMILLA SEIFERT	P.O. Box 116 GIRDWOOD 99587	783-2870	M+F	W
JODY LIDDICOAT	Box 749, Girdwood	830-5607	F	W
William Chadwick	Box 915, Girdwood	783-2511	M	W
CeCe Mendonsa	Box 3 Gird	0300	F	W
Mike Opelka	P.O. Box 198 Girdwood	783-2464	M	W
Sue Liebner	Po Box 565 Girdwood	783-0950	F	W
Larry Petersen	PO Box 565, Girdwood	783-0950	M	W
Tom Meacham	9500 Prospect Dr. Anchorage 99507	346-1077	M	W
HANK HOSFORD	P.O.B. 1511 GIRDWOOD	317-9909		
Steve Noble	4041 B St. Anch. AK 99503	562-2000	M	W

*RACE CATEGORIES: WHITE (W), ALASKA NATIVE (AN), NATIVE AMERICAN (N), BLACK (B), HISPANIC (H), ASIAN (A), PACIFIC ISLANDER (P), and OTHER (O)

*This information is **voluntary**. Its purpose is to ensure fair and equal representation by the public in all projects and programs administered by the Alaska Department of Transportation and Public Facilities.

Project Name: **Seward Highway: MP 105-107 Windy Corner,** Project No. 56631/NH-0A3-1(34) Date: **Thursday, April 24, 2014**

NAME (PLEASE PRINT)	**ADDRESS/EMAIL** (to receive project notices, you MUST provide)	**PHONE**	***GENDER (M/F)**	***RACE (W, AN, N, B, H, A, P, O)**
Kevin Opalka	Kopalka@gmail.com			
Dan Kiland	dkiland@gci.net			

***RACE CATEGORIES: WHITE (W), ALASKA NATIVE (AN), NATIVE AMERICAN (N), BLACK (B), HISPANIC (H), ASIAN (A), PACIFIC ISLANDER (P), and OTHER (O)**

PUBLISHER'S AFFIDAVIT

UNITED STATES OF AMERICA,
STATE OF ALASKA } **ss:**

Becky Thomas being first duly sworn, on oath deposes and says:

That I am and was at all times here in this affidavit mentions, Supervisor of Legals of the Peninsula Clarion, a newspaper of general circulation and published at Kenai, Alaska, that the

Open House

a printed copy of which is hereto annexed was published in said paper one each and every day for one successive and consecutive day in the issues on the following dates:

April 13, 2014

x Becky Thomas

SUBSCRIBED AND SWORN to me before this 16th day of April, 2014

Jane Russell

NOTARY PUBLIC in favor for the State of Alaska.

My Commission expires 27-Aug-16

JANE RUSSELL NOTARY PUBLIC STATE OF ALASKA



SEWARD HIGHWAY
MP 105-107

Windy Corner

Open House
Thursday, April 24, 2014
6 to 8 p.m., Presentation at 6:15 p.m.
Girdwood Community Center
250 Egloff Drive, Girdwood

The Alaska Department of Transportation and Public Facilities (DOT&PF) invites you to a second public meeting on the Seward Highway MP 105-107 (Windy Corner) project. At this meeting, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March. If you are unable to attend the meeting, the team will post the meeting materials on the project web site on or before April 22, 2014.

For more information contact:
Anne Brooks, Public Involvement Coordinator
Brooks & Associates, Toll free: 866-535-1877
Email: windycorner@dowlhkm.com

The DOT&PF operates Federal Programs without regard to race, color, national origin, sex, age, or disability. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi_statement.shtml. To file a complaint go to: dot.alaska.gov/cvlrts/titlevi.shtml.

www.dowlhkm.com/projects/windycorner

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AFFIDAVIT OF PUBLICATION

STATE OF ALASKA
THIRD JUDICIAL DISTRICT

Joleesa Stepetin
being first duly sworn on oath deposes and says that he is a representative of the Anchorage Daily News, a daily newspaper. That said newspaper has been approved by the Third Judicial Court, Anchorage, Alaska, and it now and has been published in the English language continually as a daily newspaper in Anchorage, Alaska, and it is now and during all said time was printed in an office maintained at the aforesaid place of publication of said newspaper. That the annexed is a copy of an advertisement as it was published in regular issues (and not in supplemental form) of said newspaper on

April 16, 2014

and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is not in excess of the rate charged private individuals.

Signed Joleesa Stepetin

Subscribed and sworn to before me
this 16th day of April, 2014
Britney Thompson

Notary Public in and for
The State of Alaska.
Third Division
Anchorage, Alaska
MY COMMISSION EXPIRES
05/18/15





Brooks and Associates
1704 Rogers Park Court
Anchorage, AK 99508

Affidavit of Publication

State of Alaska
Third Judicial District

Ken Smith, being first duly sworn on oath deposes and says that he/she is a representative of the Turnagain times, a semi-monthly newspaper. That said newspaper has been approved by the Third Judicial Court, Anchorage, Alaska, and it now and has been published in the English language continually as a semi-monthly newspaper in Anchorage, Alaska, and it is now and during all said time was printed in an office maintained at the aforesaid place of publication of said newspaper.

That the annexed is a copy of an advertisement as it was published in regular issues (and not in supplemental form) of said newspaper on April 17, 2014, and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is not in excess of the rate charged private individuals.

Signed,

X _____

Subscribed and sworn to before me this 22nd day of April 2014

X _____

Notary public in and for the State of Alaska. Third Judicial District, Anchorage, Alaska

My commission expires: 02/14/16

NOTARY PUBLIC
SARAH MACK
STATE OF ALASKA

SEWARD HIGHWAY
MP 105-107
Windy Corner

Open House

Thursday, April 24, 2014

6 to 8 p.m., Presentation at 6:15 p.m.

Girdwood Community Center
250 Egloff Drive, Girdwood

You're Invited!

The Alaska Department of Transportation and Public Facilities (DOT&PF) invites you to a second public meeting on the Seward Highway MP 105-107 (Windy Corner) project.

At this meeting, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March.

If you are unable to attend the meeting, the team will post the meeting materials on the project web site on or before April 22, 2014.

For more information contact:

Anne Brooks, Public Involvement Coordinator
Brooks & Associates, Toll free: 866-535-1877
Email: windycorner@dowlhkm.com

www.windycorner.info

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Brooks & Associates
1704 Rogers Park Court
Anchorage, AK 99508

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SEWARD HIGHWAY
MP 105-107
Windy Corner

House Public Meeting
Thursday, April 24, 2014

Gmail by Google

Camden Yehle <camden.brooksalaska@gmail.com>

Reminder: Windy Corner Open House Invitation - Thursday April 24th, 2014

Anne Brooks <comments.brooksalaska@gmail.com> Wed, Apr 23, 2014 at 8:03 AM
Reply-To: comments.brooksalaska@gmail.com
To: camden.brooksalaska@gmail.com

Seward Highway, MP 105-107, Windy Corner

State Project No. 56631/Federal Project No. NH-0A3-1(34)

The Alaska Department of Transportation and Public Facilities (DOT&PF) invites you to a second public meeting on the Seward Highway MP 105-107 (Windy Corner) project.

Public Open House

When: Thursday, April 24th, 2014
Where: Girdwood Community Center,
250 Egloff Dr, Girdwood
Time: Stop by any time between 6 and 8 PM
Presentation at 6:15 PM

At this meeting, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March.

If you are unable to attend the meeting, the team will post the meeting materials on the project web site on or before April 22, 2014.

Visit the project website www.windycorner.info to learn more about the project and schedule.

For additional information contact:
Anne Brooks, Public Involvement Coordinator
Brooks & Associates
Toll free: 1-866-535-1877
Email: windycorner@dowlhkm.com

Like us on Facebook

The DOT&PF operates Federal Programs without regard to race, color, national origin, sex, age, or disability. Full Title VI Nondiscrimination Policy: dot.alaska.gov/tvi_statement.shtml. To file a complaint go to: dot.alaska.gov/cvlrts/titlevi.shtml.

Gmail by Google

Camden Yehle <camden.brooksalaska@gmail.com>

Windy Corner Open House - Meeting Materials and Presentation

Anne Brooks <comments.brooksalaska@gmail.com> Fri, Apr 25, 2014 at 4:39 PM
Reply-To: comments.brooksalaska@gmail.com
To: camden.brooksalaska@gmail.com

Seward Highway, MP 105-107, Windy Corner

State Project No. 56631/Federal Project No. NH-0A3-1(34)

Thank you to all who attended the open house meeting on April 24. All of the meeting materials are now on the website, including the presentation. Meeting notes will be available online within two weeks.

www.windycorner.info

For additional information contact:
Anne Brooks, Public Involvement Coordinator
Brooks & Associates
Toll free: 1-866-535-1877
Email: windycorner@dowlhkm.com
Website: www.windycorner.info

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Brooks and Associates | 1704 Rogers Park Court | Anchorage | AK | 99508

Gmail by Google

Camden Yehle <camden.brooksalaska@gmail.com>

PUBLIC MEETING Seward Highway MP105-107 Windy Corner - 4/24/14

Community Councils Center <info@communitycouncils.org> Sun, Apr 20, 2014 at 2:03 PM
Reply-To: info@communitycouncils.org
To: camden.brooksalaska@gmail.com

Seward Highway MP 105-107 "Windy Corner" Project

Public Meeting

- Thursday April 24, 2014 -

Seward Highway, MP 105-107, Windy Corner

State Project No. 56631/Federal Project No. NH-0A3-1(34)

The Alaska Department of Transportation and Public Facilities (DOT&PF) invites you to a second public meeting on the Seward Highway MP 105-107 (Windy Corner) project.

PUBLIC OPEN HOUSE

When: Thursday, April 24th, 2014
Where: Girdwood Community Center,
250 Egloff Dr, Girdwood
Time: Stop by any time between 6 and 8 PM

Presentation at 6:15 PM

At this meeting, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March.

If you are unable to attend the meeting, the team will post the meeting materials on the project web site on or before April 22, 2014.

CLICK HERE to visit the project website to learn more about the project and schedule.

For additional information contact:
Anne Brooks, Public Involvement Coordinator
Brooks & Associates
Toll free: 1-866-535-1877
Email: windycorner@dowlhkm.com

This communication is being sent by the Federation of Community Councils, Inc. for the Alaska Department of Transportation and Public Facilities. The contents of the communication are the responsibility of the Alaska Department of Transportation and Public Facilities, not the Federation of Community Councils, Inc.

Community Councils Center
www.communitycouncils.org
info@communitycouncils.org
277-1977

Forward email

Public Meeting Notice: Seward Highway Milepost 105 to 107, Windy Corner

The Alaska Department of Transportation and Public Facilities (DOT&PF) invites you to a second public meeting on the proposed Seward Highway MP 105-107 (Windy Corner) project.

At this meeting, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March.

If you are unable to attend the meeting, the team will post the meeting materials on the project web site on or before April 22, 2014.

For more information contact:

Anne Brooks, Public Involvement Coordinator

Toll free: 1-866-535-1877

Email: windycorner@dowlhkm.com

http://www.dowlhkm.com/projects/windycorner/index.html

It is the policy of the DOT&PF that no person shall be excluded from participation in, or be denied benefits of any and all programs or activities we provide based on race, religion, color, gender, age, marital status, ability, or national origin, regardless of the funding source including Federal Transit Administration, Federal Aviation Administration, Federal Highway Administration and State of Alaska Funds.

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Attachments, History, Details

Attachments
None

Revision History

Created 4/10/2014 1:01:59 PM by mlbyrd
Modified 4/10/2014 2:34:45 PM by mlbyrd

Details

Department:	Transportation and Public Facilities
Category:	Public Notices
Sub-Category:	
Location(s):	Central Region
Project/Regulation #:	#56631
Publish Date:	4/10/2014
Archive Date:	5/15/2014
Events/Deadlines:	Public meeting on the proposed Seward Highway MP 1 4/24/2014 6:00pm - 8:00am View on Map

Seward Highway MP 105-107 Windy Corner - Open House

Thursday, Apr 24 6:00p to 8:00p

Girdwood Community Center
Anchorage, AK

The Alaska Department of Transportation and Public Facilities (DOT&PF) invites you to a second public meeting on the Seward Highway MP 105-107 (Windy Corner) project.

At this meeting, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March.

Add a Performer to this Event



Want to add an image?

Event website
Phone 1-866-535-1877
Price Free
Age Suitability All Ages
Category Civic/Government
Tags road project windy corner windy point seward highway

Created by Camden | Manage editors

location & nearby info

Girdwood Community Center
Egloff Dr
Anchorage, AK 99587

Show nearby:
Bars Restaurants Hotels

For Immediate Release
Contact: Anne Brooks, Public Involvement Coordinator
Toll Free Telephone: 1-866-535-1877
Email: comments.brooksalaska@gmail.com

PUBLIC SERVICE ANNOUNCEMENT

SEWARD HIGHWAY MP 105-107 WINDY CORNER OPEN HOUSE

GIRDWOOD, ALASKA

30 SECOND SPOT

(Girdwood, Alaska) – The Alaska Department of Transportation and Public Facilities invites you to an open house for the Seward Highway milepost 105-107 Windy Corner project on Thursday, April 24th, between 6 and 8 p.m. with a presentation at 6:15 p.m. The meeting will be held at the Girdwood Community Center. At the open house, the project team will share the preliminary design for the project and seek your input. The team continues work on environmental documentation and crews began geotechnical investigations in the corridor in March. For more information call Anne Brooks toll free at 866-535-1877.

###

The Alaska Department of Transportation and Public Facilities oversees 254 airports, 11 ferries serving 35 communities, 5,619 miles of highway and 720 public facilities throughout the state of Alaska. The mission of the department is to "*Keep Alaska Moving through service and infrastructure*."

Facebook Posts:

To be posted 4/10/2014 on the Windy Corner Facebook page:

The project team has been working with agencies and doing geotechnical investigations and it is time to get YOUR feedback on the current design. There will be an open house on Thursday, April 24 at the Girdwood Community Center. Stop by any time between 6 and 8 pm, but there will be a presentation at 6:15 pm. Click here for more info about the project
http://www.dowlhkm.com/projects/windycorner/index.html

Use the postcard as a photo

To be posted 4/24/14:
Don’t miss the open house tonight at the Girdwood Community Center. Stop by any time between 6 and 8 pm; there will be a presentation at 6:15 pm. Click here for more info about the project
http://www.dowlhkm.com/projects/windycorner/index.html



Alaska Department of Transportation & Public Facilities

Seward Highway Milepost 105-107, Windy Corner

Public Meeting, April 24, 2014

Central Region

Welcome and Introductions

- Tom Schmid
  DOT&PF, Project Manager
- Steve Noble
  DOWL HKM, Project Manager
- Project Team Leads
  - Aaron Christie, Project Engineer
  - Mark Boydston, DOT&PF Environmental Analyst
  - Anne Brooks, Public Involvement



Purpose of Tonight's Meeting

- Briefly review
  - project history
  - purpose and need
- Present current design
- Collect public input on current design
- Discuss environmental study process and project schedule
- Listen

Project Area





Purpose

Primary Objectives

Safety improvements

Realign and divide highway between MP 105-107 to meet current design standards

- 2-lane highway
- Realign Alaska Railroad Corporation (ARRC) tracks

Other improvements

- New/expanded pullouts for parking and recreational access
- Acceleration and deceleration lanes to improve access to pullouts
- Emergency water access

Need

- Average daily traffic ~10,000 vehicles
- Peak summer traffic >22,000 vehicles
- Road geometry doesn't meet current standards
- Safety
  - Elevated rate of fatal/major injury crashes
  - Wildlife viewing contributes to elevated crash rate
  - Separate modes/corridor uses

Corridor Qualities and Resources

- Important Designations
  - National Highway Route
  - All-American Road
  - Alaska Scenic Byway
  - USDA National Forest Scenic Byway
  - Safety Corridor
- Key Uses
  - Wildlife habitat and viewing
  - Recreation access
  - Rail
  - Road
  - Non-motorized use
  - Commerce

Seward Highway All American Road
scenic natural historic recreational cultural

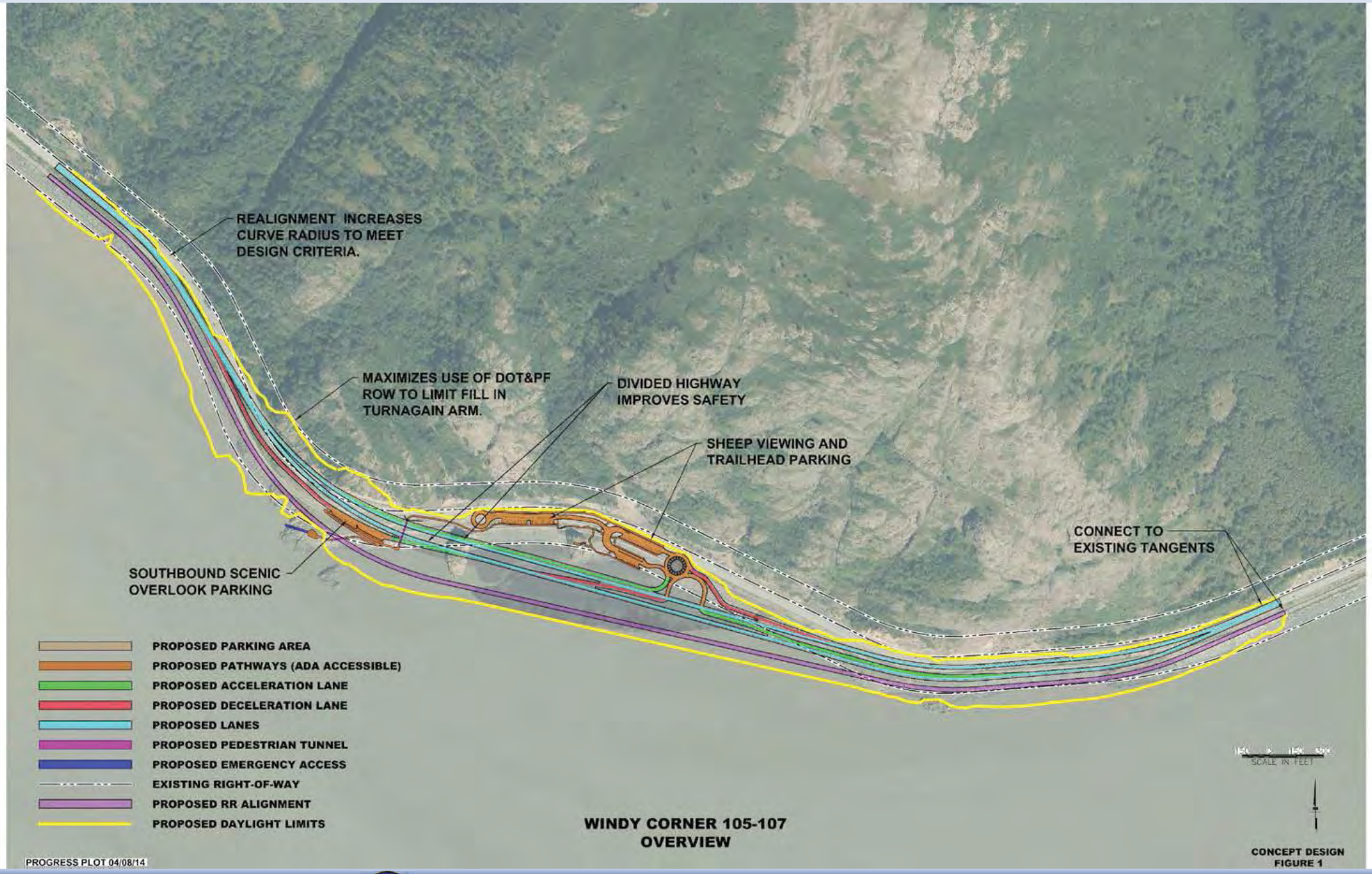
Design Coordination

- Technical Advisory Group

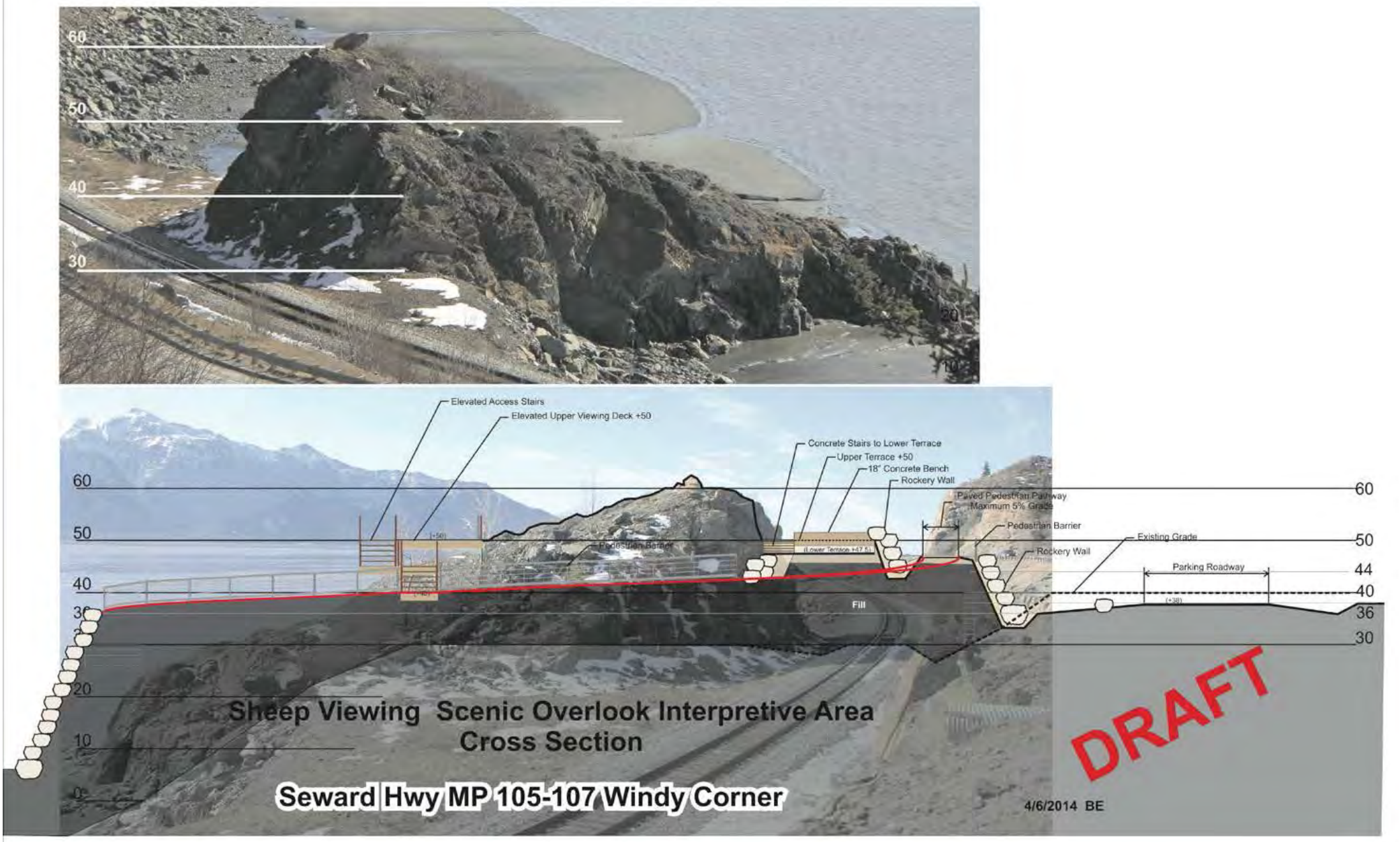
  (4 meetings convened to date to provide input on the design in progress)

  - Alaska Department of Fish and Game
  - Alaska Department of Natural Resources
  - Alaska Railroad Corporation
  - Municipality of Anchorage
  - National Marine Fisheries Service
  - US Army Corps of Engineers

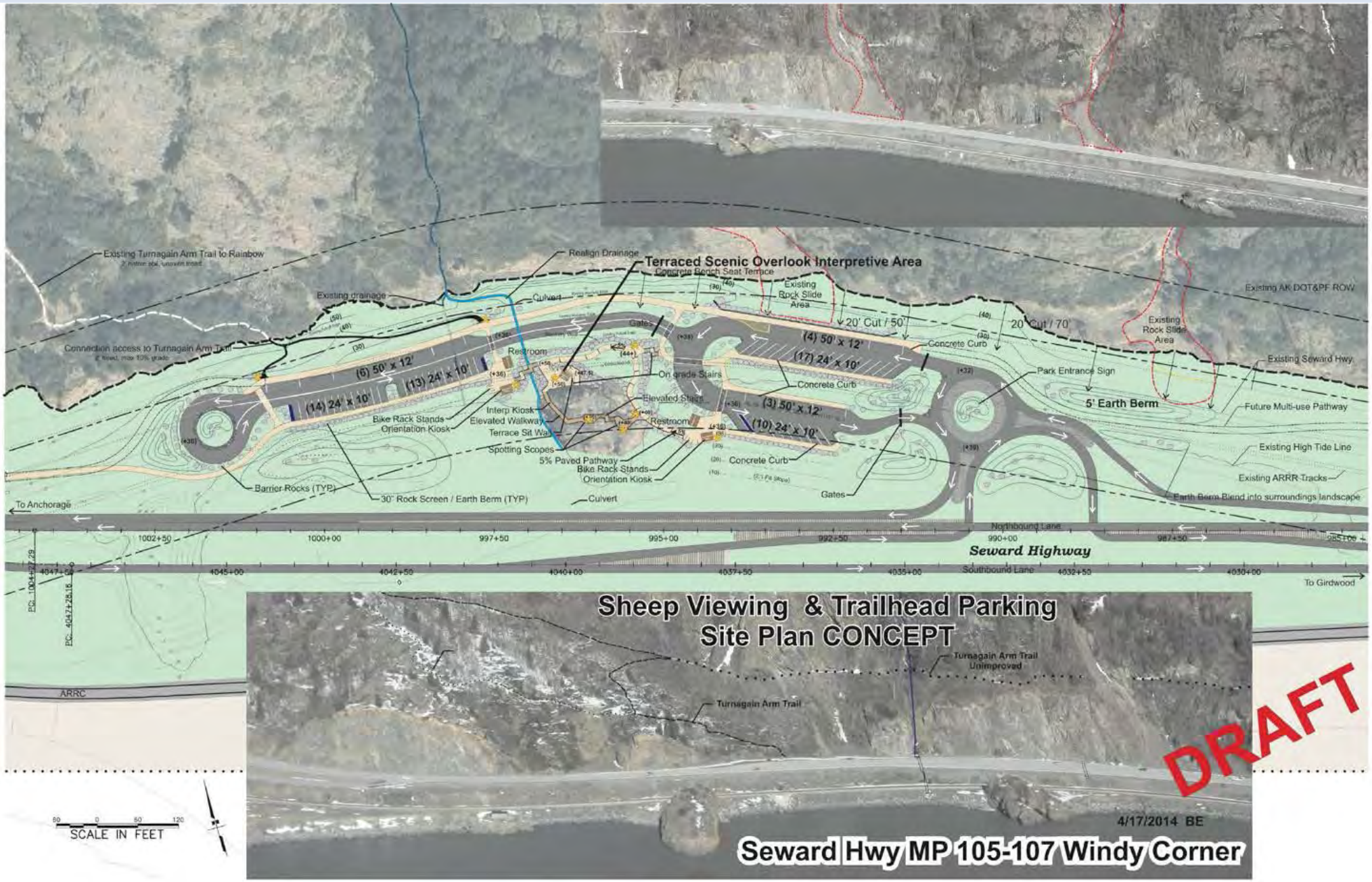
Current Design



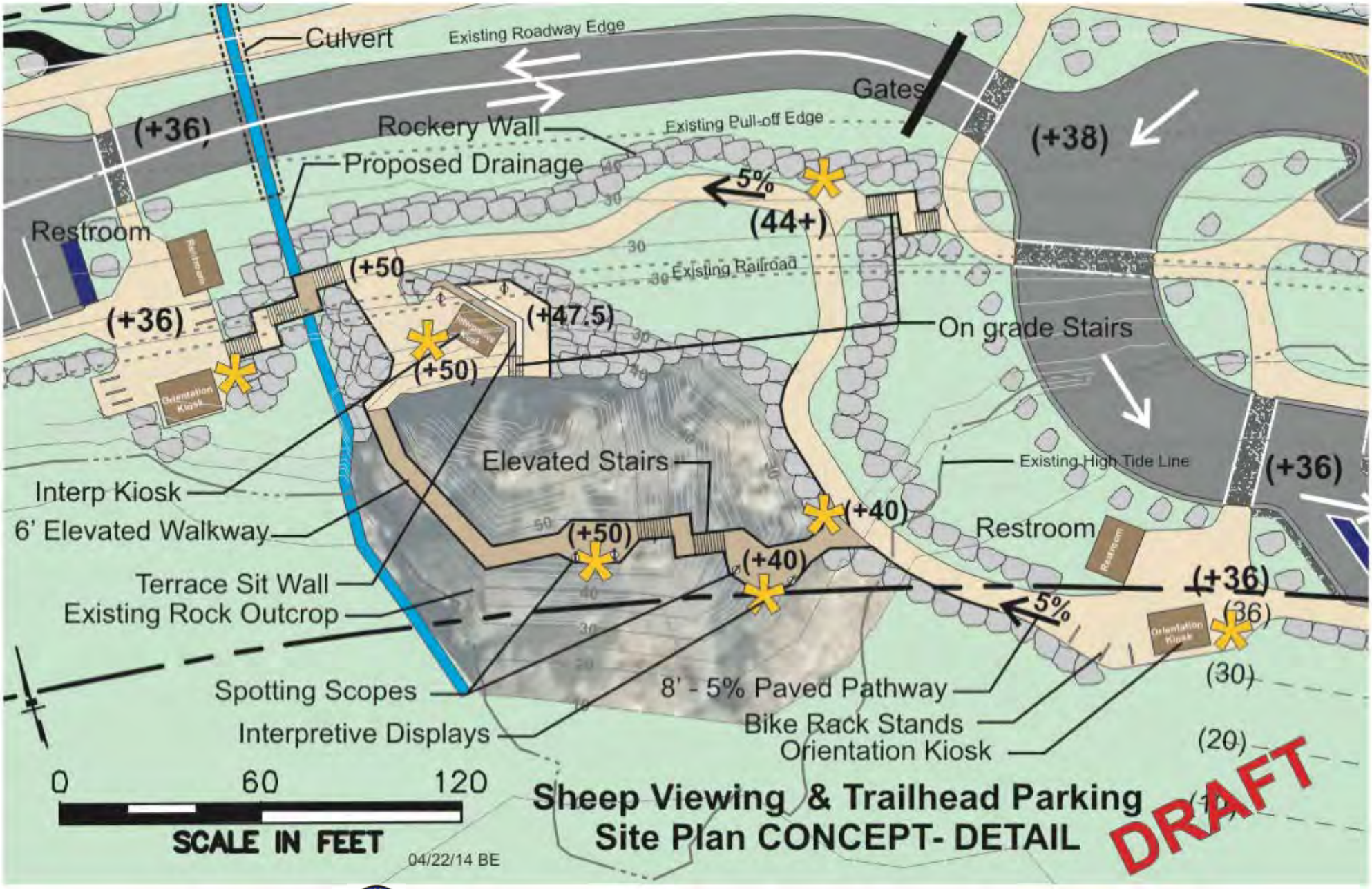
Cross Section



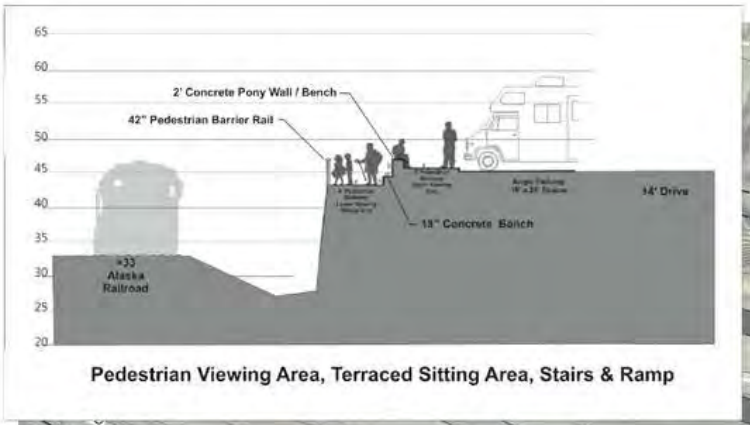
Sheep Viewing & Trailhead Parking



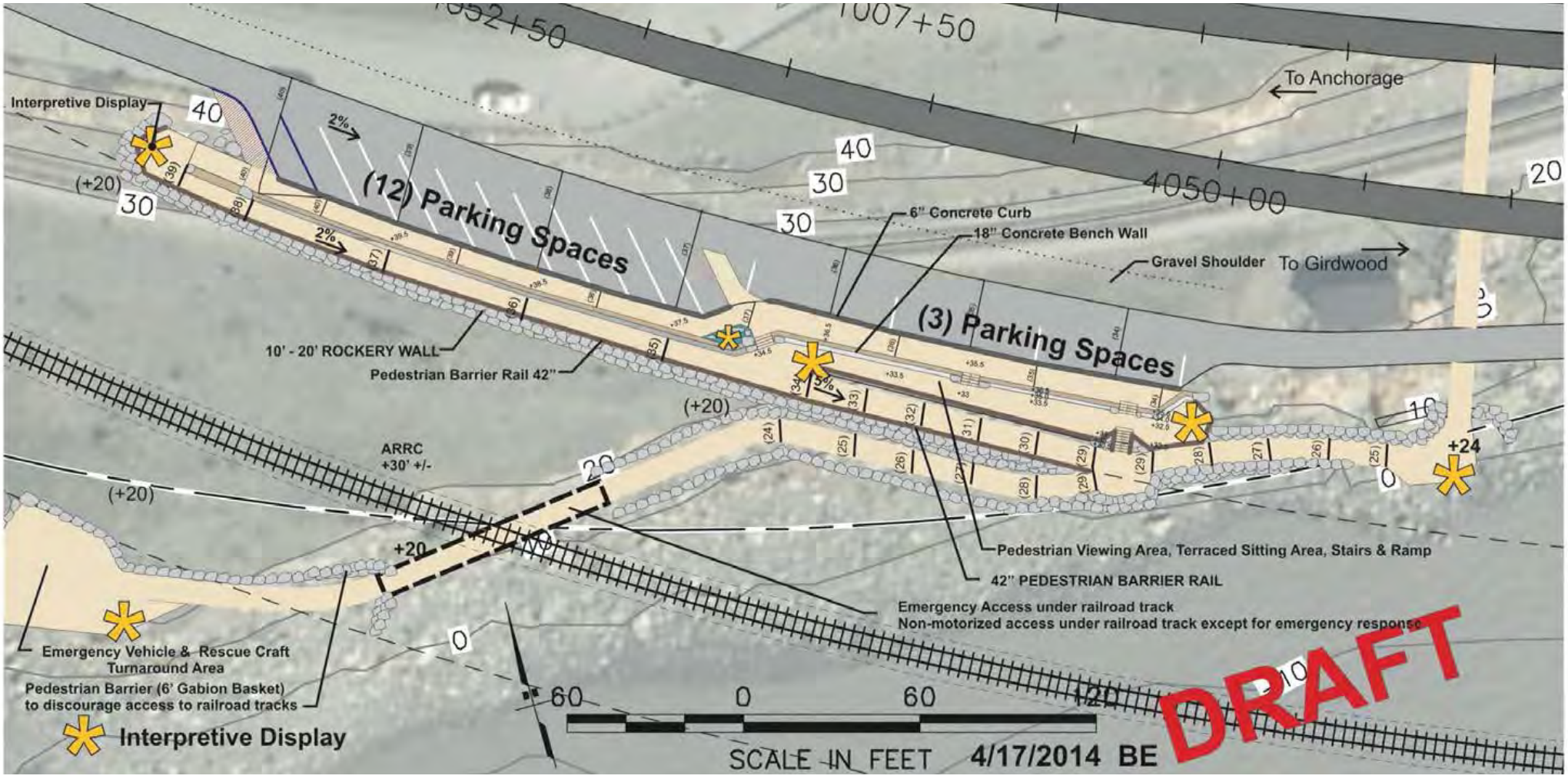
Details


Culvert
Existing Roadway Edge
Gates
(+36)
Rockery Wall
Existing Pull-off Edge
(+38)
Proposed Drainage
5%
(44+)
Restroom
(+50
Existing Railroad
(+36)
(+47.5)
On grade Stairs
(+50)
Elevated Stairs
Existing High Tide Line
(+36)
Interp Kiosk
6' Elevated Walkway
(+40)
(+50)
Restroom
Terrace Sit Wall
(+40)
(+36)
Existing Rock Outcrop
5%
(36)
(30)
Spotting Scopes
8' - 5% Paved Pathway
Interpretive Displays
Bike Rack Stands
Orientation Kiosk
(20)
0
60
120
SCALE IN FEET
04/22/14 BE
Sheep Viewing & Trailhead Parking
Site Plan CONCEPT- DETAIL
DRAFT

Scenic Overlook



Southbound Overlook Parking



Sheep Viewing, Trailheads & Parking

- Site plan concepts represent full build-out of roadside amenities
- Operations and Maintenance of these amenities will require:
  - Operating agreement between Alaska Department of Transportation and Public Facilities and the Alaska Department of Natural Resources/Chugach State Park
  - Sufficient funding to operate and maintain
- May be gated and closed during winter months

Public Input Included in Design

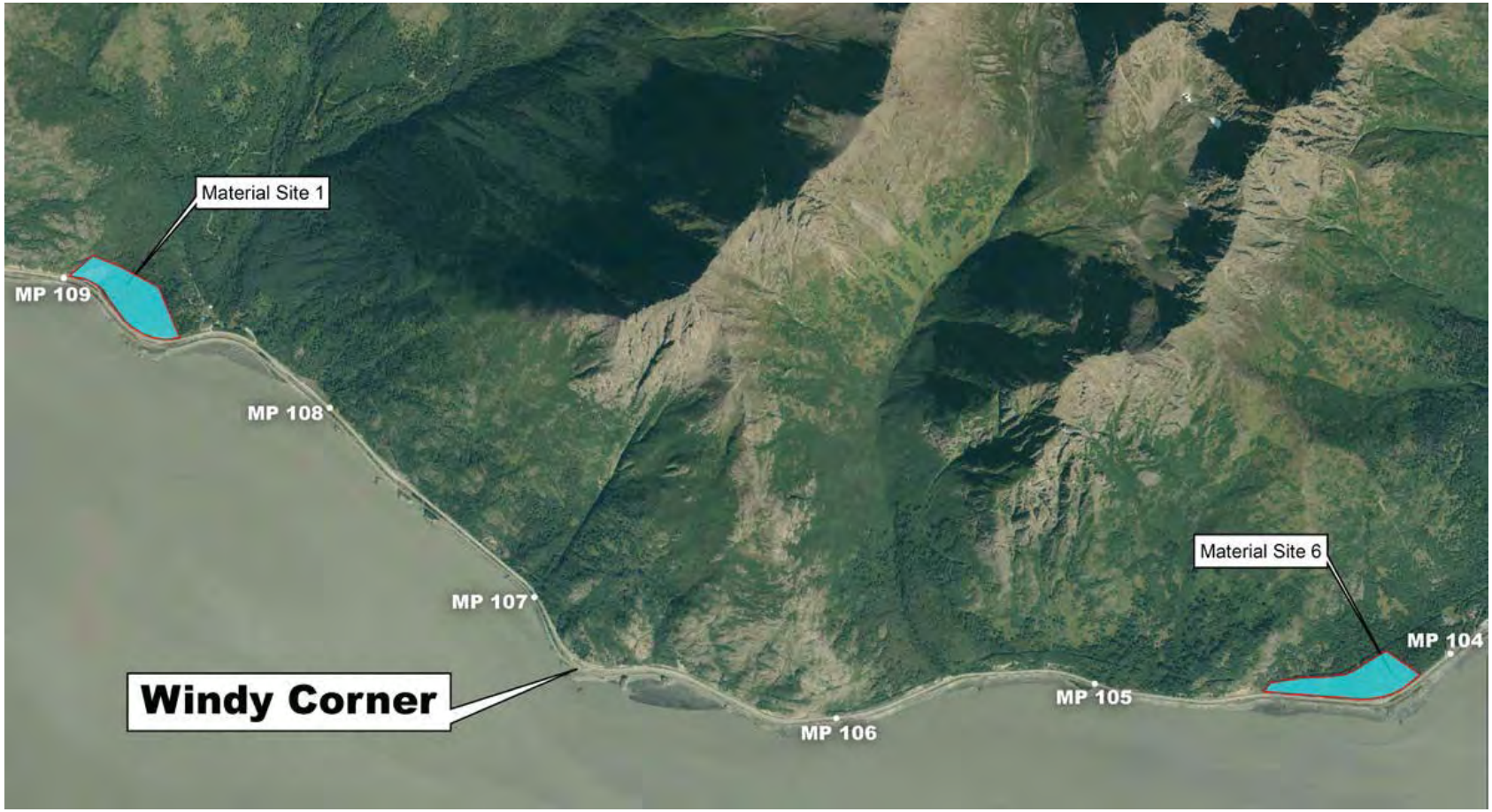
- Access to Turnagain Arm for emergency responders and recreational users
- Parking/pullouts for recreational access
- Preservation of land forms
- U-turn capabilities
- Bike/multi-use pathway or accommodation for a future pathway
- Balance cut and fill material needs
- Protect Beluga whales and other wildlife

Comments Unable to Include

- Falls Creek trailhead parking expansion
- Highway lighting
- Construction of 4-lanes
- Passing lanes
- Trail/pathway extension from Indian

Potential Material Sites

- An estimated 1-2 million cubic yards of material is needed
- Rock cut planned at Windy Corner
- Additional sources will be needed outside the project area
- Areas 1 & 6 are potential in-corridor material sources



Funding

- Funding identified through 2012-2015 Statewide Transportation Improvement Program (STIP)
- Combination of state and federal funds
- Current estimates:

  ~ $50 million



Project Schedule

- **January 2013 — Summer 2014**
  - Preliminary Engineering and Environmental Documentation
- **January 2013 — Spring 2014**
  - Design Study and Preliminary Design
- **Spring 2014 — Spring 2016**
  - Plans, Specifications & Estimates
- **Summer 2014 — Spring 2016**
  - Final Plans, Specifications & Estimates
  - Right-Of-Way Acquisition
- **2016 — 2017**
  - Construction

Next Steps

- Continue engineering design and environmental documentation
- Collect public/agency input
- Acquire Permits
- Secure right-of-way
- Construction

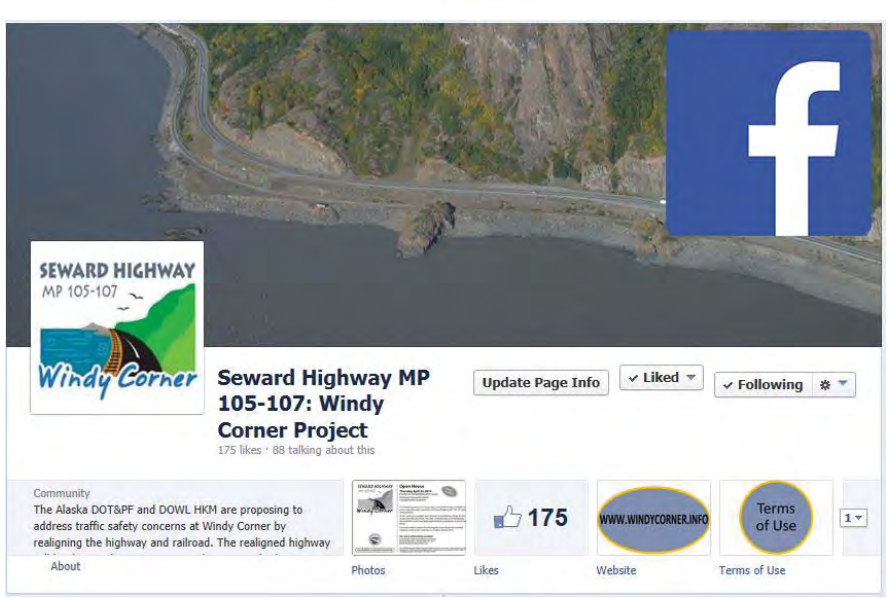


We Want Your Input

- Please comment on the current design
- Please comment on the potential replacement parcels for conversion of parkland
- All comments will be considered
- Fill out a comment form or talk to team members
- Provide contact information to receive future project information

Keep Up To Date On The Project

- www.windycorner.info
  - Features information on:
    - Schedule
    - Meetings/Public Input Opportunities
    - Documents, Photos & Maps
    - Project Team
    - Contacts
- Facebook
  - Like us!



Seward Highway: MP 105-107 Windy Corner

Project No. 56631/NH-0A3-1(34)

MEETING NOTES

SUBJECT:	Seward Highway: MP 105-107 Windy Corner
PROJECT NO.:	DOT&PF: 56631/NH-0A3-1(34)
GROUP:	Public
DATE:	Thursday, April 24, 2014
TIME:	6 pm to 8 pm, presentation at 6:15 pm
LOCATION:	Girdwood Community Room
MEETING OUTREACH:	See Table 1. Meeting Outreach
MEETING ATTENDANCE:	29 people signed in
MEETING MATERIALS:	Aerial photo with proposed project overlay, comment sheets, fact sheets, crash statistics posters, cut and fill posters, overall Seward Highway improvement schedule poster, presentation
STAFF PRESENT:	*DOT&PF*: Tom Schmid, Quinten Arndt
	DOWL HKM: Steve Noble, Aaron Christie, Rachel Steer, Kristen Hanson, Bill Evans
	Brooks & Associates: Anne Brooks

MEETING INFORMATION:

Attendees were greeted at the door, asked to sign-in, and briefed on the meeting format, location of materials, and availability of project staff to answer their questions. An overview of the current status of the project was given in presentation format. Questions were taken before, during and after the presentation.

The following feedback was submitted on comment sheets. Any emphasis was the commenters own.

Prompt: Does the current design meet your expectations for this important safety project?

- I would encourage the project group to reconsider the bike path inclusion.
- Passing lanes key. Year-round parking/year-round access to trail.
- The Seward Highway along the Turnagain Arm is lacking enough passing lanes. It is a huge safety issue. People passing when they shouldn't and cars not pulling out of the way when they drive too slow cause accidents.
- Nice design to this project = I understand the multiuse "busy" area but a passing lane should be added North of this project! 20 miles of no passing lane is dangerous! I drive this road daily and see people pass in dangerous areas taking chances with their life and mine! Please consider a passing lane closer to Potter Marsh so people may pass safely.

- Thanks so much to the Project Team for your presentation to us in Girdwood on April 24th. I appreciate the opportunity to comment. I commend you for your progress since your presentation last year. Your plan is achieving the primary objective of a safer highway. Incorporating the input from last as to provide recreational access to both the mountain and water sides along with the emergency rescue access is much appreciated.

  We all recognize this project will come at a high impact in terms of the high cost, area for the roadway; cutouts to the mountain for fill source rock, and encroachment out into the waterway and to the marine system.

  To reduce the extent of these impacts a proposal to the plan is:

  1) Utilize the existing 2 lane roadway for the northbound roadway. It can provide a thru lane with turn/acceleration lanes for the North bound traffic.

  2) Keep the railroad where it is now.

  3) Route the southbound traffic over the railroad to the water side and straighten it to achieve the desired curve radiuses.

  All the benefits of access to both sides and parking achieved by the current plan can be provided. Although the existing curve radius will still exist for the Northbound lane it will be as safe or safer than the existing plan with the extra lane and separation from oncoming traffic. And even though it will require crossings on each end over railway for the Southbound roadway this plan could be achieved with much reduced rock fill mining and excavation resulting in 1) reduced impact to t he mountainside, 2) reduced impact out into the water, 3) reduced impact to the marine system, and 4} lower overall cost ($$$$).

The following comments were submitted within two weeks of the public meeting. Team responses are shown in *italics*.

These comments combine my personal observations as well as being representative of priorities expressed by the Girdwood 2020 Seward/Highway Safety Task Force.

1. Safety is the topmost priority.
2. Within the project, roadway and trail alignments requiring any direct crossing of active traffic lanes defeats the purpose of the project. I thought I saw at least one place where turning vehicular traffic crosses oncoming traffic.
3. Keep access to restrooms open in the winter, as is being done in the Bird Creek parking area.
4. Prohibit access to tidal flats to avoid people being stuck in the mud or stranded by tidal inflows. This access should only be available to emergency vehicles.
5. Provide safe access to Turnagain Arm waters for sport use only in areas where users do not have to cross on the mud flats.

Thank you for this opportunity to comment.

I just learned of the Windy Corner realignment project and meetings in Girdwood. Why is there not a meeting in Anchorage?

To whom it may concern:

I am completely opposed to this project.

Here's why.

1. Improved vehicle safety systems, such as (Google "vehicle safety technology"):

   - Adaptive cruise control,
   - Departure lane warning,
   - Blind-spot and collision warning
   - Rollover prevention

   will, reduce traffic accidents along the entire highway to an extent that will dwarf any effect that physical changes in the roadway over only 2 miles is going to do. Note that only 12% of "Major Injury Crashes" and 11% of fatalities from Girdwood to Potter Marsh occurred in the 2-mile project zone; see Figure 1 from last year's AK DOT presentation. I would also note that the accidents/fatalities at mile 105-17 are not particularly worse than the surrounding 2-mile sections.

   Put these undeniable technology improvements that are probably going to fix most of the problem together with the fact that the project fixes 2 miles that is responsible for only 12% of the problem at a cost of about $70 million, and the project makes absolutely no sense. You can save a lot more lives with $70 million directed somewhere else.

2. I see from a source on the web (DOWL HKM) that the proposed construction project intends to use material from the sites shown in Figure 2 below. Figure 3 shows what one of these sites looks like (Bird Creek parking area) after the materials have been removed. In my opinion it is as about as ugly as you can get. The highway is currently a National Forest Scenic Byway, an Alaska Scenic Byway and All-American Road.

   I don't want Turnagain Arm scarred in this way for no good reason.

Thank you for the opportunity to comment on this proposal.

I was unable to attend the Open House last night in Girdwood and I am interested in the Windy corner upgrade project. I tried the website www.dowlhkm.com/projects/windycorner and it will not give me access to the page.

Could you please send me the correct link to the project or fix the link. Thanks. *Sorry about that!*

Please try this shortened link: www.windycorner.info. Let me know if you have any problems.

The Seward Highway Safety Task Force is having our annual meeting in Girdwood the day before the Windy Corner meeting.

If you haven't already received an e-mail - the meeting starts at 10 AM on the 23rd in the Community Center. Hope to see you there. *Thanks for the heads up Hank. I'll be there.*

We've decided to postpone the Highway Safety meeting scheduled for the 23rd. I'll look for at your meeting on the 24th. *Thanks for letting me know. We hope to see committee members at the meeting Thursday and get your thoughts on the current design of the Seward Highway between milepost 105 and 107.*

The one addition that I have is to encourage the use of the mile 104 as a borrow site (it's in the plan) to enhance the sightline safety of that corner as a result of this project. And to take advantage of that work to improve the dangerous condition at Mile 104 at the same time.

I just learned of the Windy Corner realignment project and meetings in Girdwood. Why is there not a meeting in Anchorage?

Preserve the current wildlife habitat as it is, add parking on the west side, along with spotting scopes and 45 mph speed limit section through this area.

Comment Sheet Survey. The comment sheet asked commenters to rank amenities. The comment sheet prompt stated: "The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you." The following is a compilation of the responses.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks		✔	✔✔✔	✔✔	
Emergency/Search and Rescue Water Access	✔✔	✔	✔✔	✔	
Interpretive Displays		✔✔	✔✔✔	✔	✔
Kiosks		✔✔	✔✔	✔	
Non-motorized Public Access to Turnagain Arm	✔✔ ✔ Prohibit except for sport use	✔	✔		
Parking	✔✔✔✔	✔✔			
Parking for oversize vehicles	✔✔	✔✔	✔	✔	
Restrooms	✔✔✔	✔	✔	✔	
Separated multi-use pathway	✔	✔✔✔✔		✔	
Spotting Scopes		✔✔✔	✔	✔	✔
Trailhead access to Turnagain Arm Trail	✔✔	✔✔✔		✔	
Trash Cans	✔✔	✔✔✔	✔		
Other (add your own):	✔(Passing lanes)				

Table 1. Meeting Outreach

Date	Outreach method	Description
4/09/14	Meeting notification on project website	Meeting notice on home page http://www.dowlhkm.com/projects/windycorner/index.html
4/16/14	Display advertising in *Anchorage Daily News*	Inviting the public to the open house
4/13/14	Display advertising in *Peninsula Clarion*	Inviting the public to the open house
4/17/14	Display advertising in *Turnagain Times*	Inviting the public to the open house
4/16/14	Public service announcement request sent to: KBBO-FM, KNBA-FM, KWHL-FM, KEUL-FM, GCI Cable	Sent with request to broadcast announcement inviting public to meeting
4/14/14	Postcard	Approximately 1,470 postcard invitations mailed to local businesses, residents, and agencies
4/10/14	State of Alaska Online Notice	Inviting the public to the open house
4/10/14	DOT&PF online calendar	Meeting listed on the DOT&PF online public meeting calendar http://dot.alaska.gov/creg/calendar.shtml
4/10/14 and 4/23/14	Constant Contact email and reminder	Provide email invitation to the meeting to project stakeholders
4/10/14	Facebook Update	Post about the meeting on the project Facebook page https://www.facebook.com/pages/Seward-Highway-MP-105-107-Windy-Corner-Project/450234331728338
4/15/14	Facebook ad campaign	Sponsored Facebook posts to invite people to the meeting and drive up likes for the project Facebook page
4/20/14	Federation of Community Councils notification	The Federation of Community Councils sent a meeting notification to their subscriber list

Related documents on file:

Sign-in Sheets
Handouts (Comment Sheet, Fact Sheet)
Comment Sheets received at meeting
Postcard Mailer
Public Service Announcements and Advertising
Presentation

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name: Lynne Doran	
Street Address or PO Box: POB 10264	
City, State, Zip: Girdwood AK 99587	
Email: doran@acsalaska.net	Phone: 783-0771

Does the current design meet your expectations for this important safety project?
☐Yes ☒No Please explain why?

The Seward Hwy along the Turnagain Arm is lacking enough passing lanes. It is a huge safety issue. People passing when they shouldn't & cars not pulling out of the way when they drive too slow cause accidents

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks			X		
Emergency/Search and Rescue Water Access		X			
Interpretive Displays		X			
Kiosks		X			
Non-motorized Public Access to Turnagain Arm	X				
Parking	X				
Parking for oversize vehicles	X				
Restrooms	X				
Separated multi-use pathway		X			
Spotting Scopes		X			
Trailhead access to Turnagain Arm Trail		X			
Trash Cans		X			
Other (add your own):					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140424cs Doran 1/1

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name: Howard Earl	
Street Address or PO Box: PO Box 388	
City, State, Zip: Girdwood, AK 99587	
Email: howard@resdat.com	Phone: 907-783-5432

Does the current design meet your expectations for this important safety project?
☐Yes ☒No Please explain why?

- Passing lanes key
- Year-round parking / year-round access to trail

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks			X		
Emergency/Search and Rescue Water Access			X		
Interpretive Displays		X			
Kiosks		X			
Non-motorized Public Access to Turnagain Arm			X		
Parking	X				
Parking for oversize vehicles			X		
Restrooms		X			
Separated multi-use pathway		X			
Spotting Scopes		X			
Trailhead access to Turnagain Arm Trail	X				
Trash Cans		X			
Other (add your own): Passing lanes	X				

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140424cs Earl 1/1

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name	DAVID EVANS
Street Address or PO Box	6010 AUSTRIA DRIVE
City, State, Zip	ANCHORAGE
Email DAVID_EVANS@GCI.NET	Phone 9073498373

Does the current design meet your expectations for this important safety project?
☐Yes ☒No Please explain why?

SEE ATTACHED

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks					
Emergency/Search and Rescue Water Access					
Interpretive Displays					
Kiosks					
Non-motorized Public Access to Turnagain Arm					
Parking					
Parking for oversize vehicles					
Restrooms					
Separated multi-use pathway					
Spotting Scopes					
Trailhead access to Turnagain Arm Trail					
Trash Cans					
Other (add your own):					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140424cs Evans 1/4

Re: Proposed construction at Windy Point, Turnagain Arm, AK.

To whom it may concern:

I am completely opposed to this project.

Here's why.

1. Improved vehicle safety systems, such as (Google "vehicle safety technology"):
    - Adaptive cruise control,
    - Departure lane warning,
    - Blind-spot and collision warning
    - Rollover prevention

    will, reduce traffic accidents along the entire highway to an extent that will dwarf any effect that physical changes in the roadway over only 2 miles is going to do. Note that only 12% of "Major Injury Crashes" and 11% of fatalities from Girdwood to Potter Marsh occurred in the 2-mile project zone ; see Figure 1 from last year's AK DOT presentation. I would also note that the accidents /fatalities at mile 105-17 are not particularly worse than the surrounding 2-mile sections.

    Put these undeniable technology improvenments that are probably going to fix most of the probblem together with the fact that the project fixes 2 miles that is responsible for only 12% of the problem at a cost of about $70 million, and the project makes absolutely no sense. You can save a lot more lives with $70 million directed somewhere else.

2. I see from a source on the web (DOWL HKM) that the proposed construction project intends to use material from the sites shown in Figure 2 below. Figure 3 shows what one of these sites looks like (Bird Creek parking area) after the materials have been removed. In my opinion it is as about as ugly as you can get. The highway is currently a National Forest Scenic Byway, an Alaska Scenic Byway and All-American Road.

    I don't want Turnagain Arm scarred in this way for no good reason .

Thank you for the opportunity to comment on this porposal.

Comments submitted on 4/24/2014 by:
David Evans
6010 Austria Drive
Anchorage, AK 99516

20140424 cs Evans 3/4

FIGURE 1: Crashes and fatalisites along the Arm

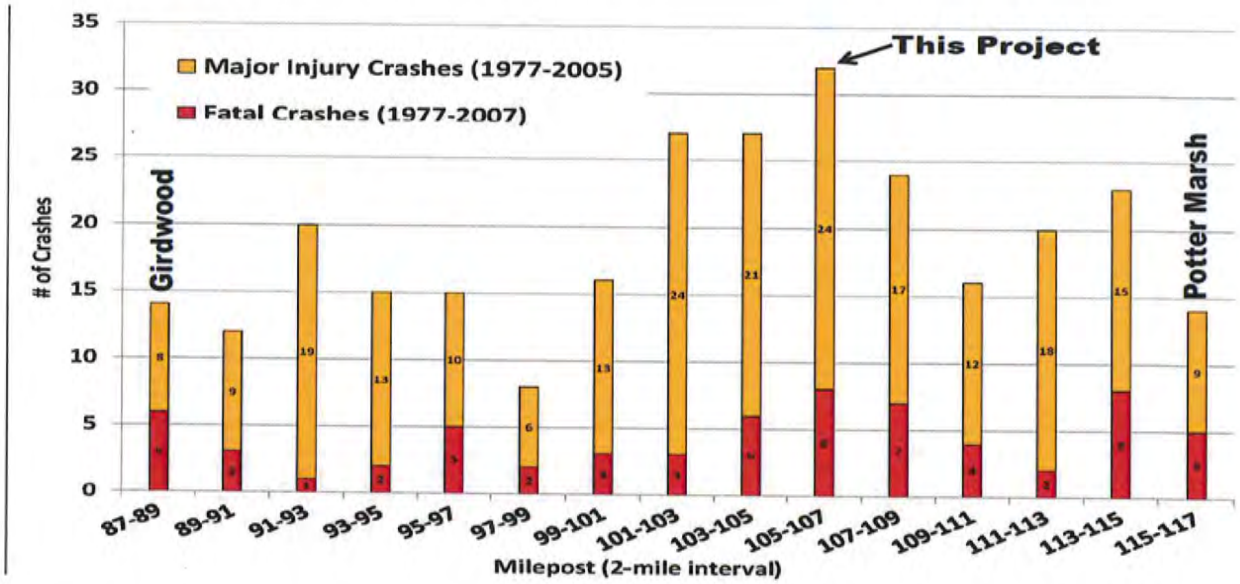
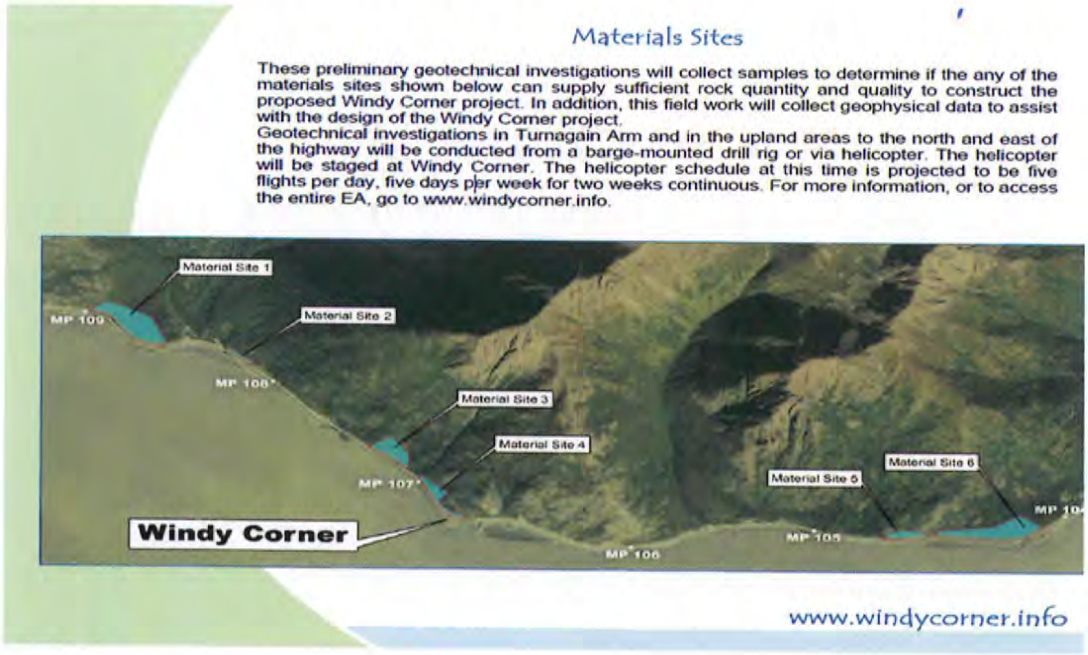


FIGURE 2: Material Sites for proposed project

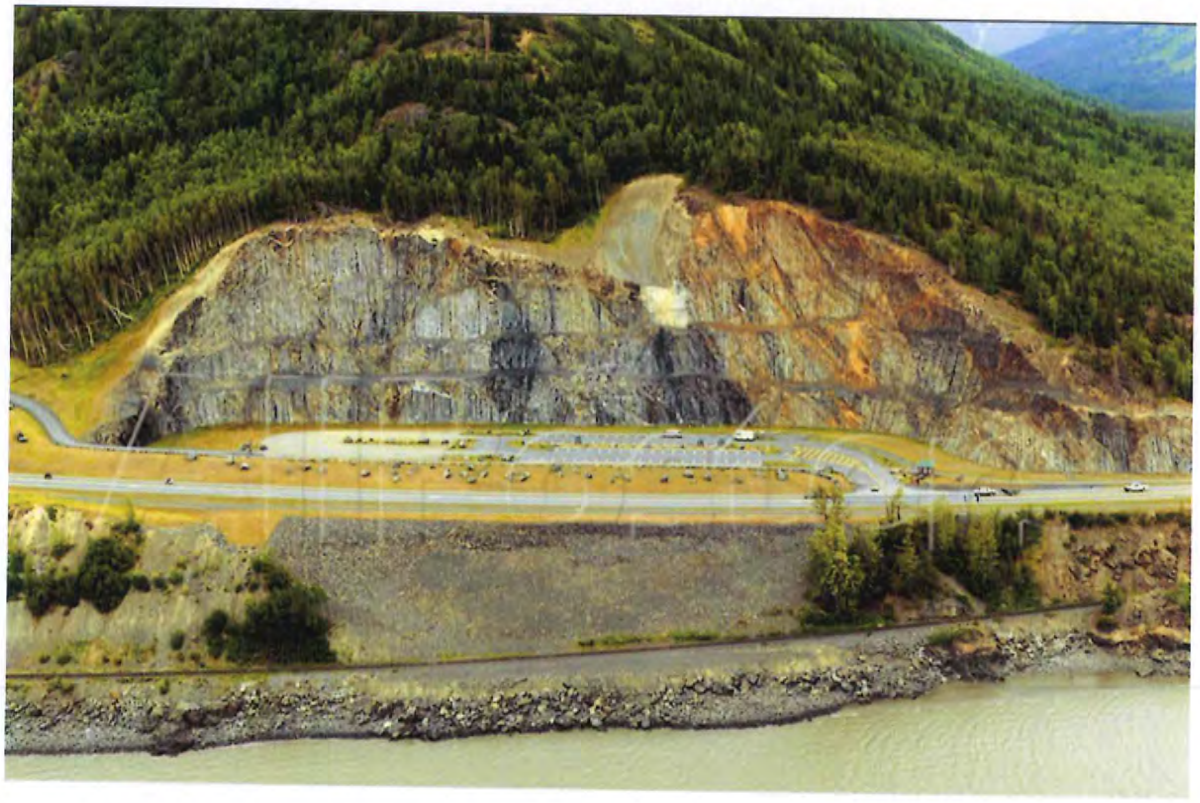


rd Highway
dy Corner

OWL HKM
41 B Street
ge, Alaska 99503

20140424cs Evans 3/4

FIGURE 3: What a material site look s like after it's all said and done



20140424 cs Evans 4/4

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name Sue Liebner	
Street Address or PO Box PO Box 565	
City, State, Zip Girdwood, AK 99587	
Email sliebner@clearwire.net	Phone 907-223-9921

Does the current design meet your expectations for this important safety project?
☐Yes ☐No Please explain why?

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks		✓			
Emergency/Search and Rescue Water Access			✓		
Interpretive Displays			✓		
Kiosks			✓		
Non-motorized Public Access to Turnagain Arm	✓				
Parking		✓			
Parking for oversize vehicles		✓			
Restrooms	✓				
Separated multi-use pathway	✓				
Spotting Scopes			✓		
Trailhead access to Turnagain Arm Trail		✓			
Trash Cans	✓				
Other (add your own):					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140424cs Liebner 1/2

Brooks &Associates
1704 Rogers Park Court
Anchorage, AK 99508

Stamp

Brooks & Associates
Attn: Seward Highway: MP 105-107 Windy Corner
1704 Rogers Park Court
Anchorage, AK 99508

(To mail, fold here, tape lower edge, and affix first class stamp)

Comments continued: Nice design to this project — I understand the multiuse "busy" area but a passing lane should be added North of this project! 20 miles of no passing lane is dangerous! I drive this road daily & see people pass in dangerous areas taking chances w/ their life & mine! Please consider a passing lane closer to Potter Marsh so people may pass safely!

Email windycorner@dowlhkm.com

Call Alaska Relay
TTY 800-770-8973 or
Toll Free: 1-866-535-1877

20140424cs Liebner 2/2

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name Camilla Seifert	
Street Address or PO Box 157 LAKE TAHOE RD – ~~BOX~~ 116	
City, State, Zip GIRDWOOD AK	
Email seifert@acsalaska.net	Phone 783-2870

Does the current design meet your expectations for this important safety project?
☐Yes ☐No Please explain why?

I would encourage the project group to reconsider the bike path inclusion.

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks					
Emergency/Search and Rescue Water Access					
Interpretive Displays					
Kiosks					
Non-motorized Public Access to Turnagain Arm					
Parking					
Parking for oversize vehicles					
Restrooms					
Separated multi-use pathway					
Spotting Scopes					
Trailhead access to Turnagain Arm Trail					
Trash Cans					
Other (add your own):					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140424cs Seifert 1/1

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name	Diana Stone Livingston / Girdwood 2020
Street Address or PO Box	PO Box 580
City, State, Zip	Girdwood AK 99587
Email dstonelivelivingstonalaska.com	Phone 907 783 2128

Does the current design meet your expectations for this important safety project?
☐Yes ☐No Please explain why?

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks				X	
Emergency/Search and Rescue Water Access	X				
Interpretive Displays				X	
Kiosks				X	
Non-motorized Public Access to Turnagain Arm	Prohibit except for Sportuse				
Parking	X				
Parking for oversize vehicles	X				
Restrooms	X				
Separated multi-use pathway		X			
Spotting Scopes					X
Trailhead access to Turnagain Arm Trail				X	
Trash Cans	X				
Other (add your own): See Letter					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140428cs Livingston 1/1

SEWARD HIGHWAY
MP 105-107
Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name Daniel Kiland	
Street Address or PO Box PO Box 1023	
City, State, Zip Girdwood, AK 99587	
Email dkiland@gci.net	Phone 783-9394

Does the current design meet your expectations for this important safety project?
☑Yes ☑No Please explain why?
See attached comments

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks				✓	
Emergency/Search and Rescue Water Access	✓				
Interpretive Displays			✓		
Kiosks			✓		
Non-motorized Public Access to Turnagain Arm	✓				
Parking	✓				
Parking for oversize vehicles		✓			
Restrooms			✓		
Separated multi-use pathway		✓			
Spotting Scopes				✓	
Trailhead access to Turnagain Arm Trail	✓				
Trash Cans		✓			
Other (add your own):					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

April 28, 2014

Windy Point Project

Thanks so much to the Project Team for your presentation to us in Girdwood on April 24th. I appreciate the opportunity to comment. I commend you for your progress since your presentation last year. Your plan is achieving the primary objective of a safer highway. Incorporating the input from last as to provide recreational access to both the mountain and water sides along with the emergency rescue access is much appreciated.

We all recognize this project will come at a high impact in terms of the high cost, area for the roadway, cutouts to the mountain for fill source rock, and encroachment out into the waterway and to the marine system.
To reduce the extent of these impacts a proposal to the plan is:
1) Utilize the existing 2 lane roadway for the northbound roadway. It can provide a thru lane with turn/acceleration lanes for the North bound traffic.
2) Keep the railroad where it is now.
3) Route the southbound traffic over the railroad to the water side and straighten it to achieve the desired curve radiuses.

All the benefits of access to both sides and parking achieved by the current plan can be provided. Although the existing curve radius will still exist for the Northbound lane it will be as safe or safer than the existing plan with the extra lane and separation from oncoming traffic. And even though it will require crossings on each end over railway for the Southbound roadway this plan could be achieved with much reduced rock fill mining and excavation resulting in 1) reduced impact to the mountainside, 2) reduced impact out into the water, 3) reduced impact to the marine system, and 4) lower overall cost ($$$$).

Sincerely,

Daniel Kiland

Daniel Kiland

Brooks &Associates
1704 Rogers Park Court
Anchorage, AK 99508

Stamp

Brooks & Associates
Attn: Seward Highway: MP 105-107 Windy Corner
1704 Rogers Park Court
Anchorage, AK 99508

(To mail, fold here, tape lower edge, and affix first class stamp)

Comments continued:

Larry Daniels added comments to Girdwood 2020 letter—

Email windycorner@dowlhkm.com

Call Alaska Relay
TTY 800-770-8973 or
Toll Free: 1-866-535-1877

20140502 LS Daniels (Girdwood)

1/2

The one addition that I have is to encourage the use of mile 104 as a borrow site (it's in the plan) to enhance the sightline safety of that corner as a result of this project. And to take advantage of that work to improve the dangerous condition at Mile 104 at the same time.

Larry Daniels
VP
Kikiktagruk Inupiat Corporation
Business-907.277.7884
Direct -907.433.5201
Mobile -907-229-2550

20140508 Daniels (Kiana) 2/2

SEWARD HIGHWAY
MP 105-107

Windy Corner

Your comments please...

Please use this comment sheet to provide your observations and thoughts on the design to the project team.

Project No. 56631/NH-0A3-1(34)

Name	Donna S Jefferson
Street Address or PO Box	PO Box 313
City, State, Zip	Girdwood, AK 99587
Email: Djefferson@gci.net	Phone: 907 301 8207

Does the current design meet your expectations for this important safety project?
☐Yes ☒No Please explain why?

The design identifies amenities for viewing wildlife, access to trails, parking and interpretive kiosks, etc. Alaska Department of Transportation and Public Facilities (DOT&PF) and Alaska Department of Natural Resources (ADNR) may not obtain sufficient funds to operate and maintain all these features. Please rank these features in order of importance to you.

Feature	Most Important 1	Somewhat Important 2	Neutral 3	Less Important 4	Least Important 5
Bicycle Racks			✓		
Emergency/Search and Rescue Water Access				✓	
Interpretive Displays			✓		✓
Kiosks					
Non-motorized Public Access to Turnagain Arm		✓			
Parking		✓			
Parking for oversize vehicles				✓	
Restrooms				✓	
Separated multi-use pathway				✓	
Spotting Scopes		✓			
Trailhead access to Turnagain Arm Trail		✓			→ We already have!
Trash Cans			✓		
Other (add your own): preserve the current wildlife habitat as it is, add parking on the west side, along with spotting scopes 45 mph speed limit section through this area.					

If you need more space, continue your comment on the back of the page

Project website: www.windycorner.info

20140516 cs Jefferson 1/1

From: "Steer, Rachel" <rsteer@dowlhkm.com>
Subject: Kenai Mtns./Turnagain Arm National Heritage Area
Date: May 20, 2014 at 3:52:51 PM AKDT
To: "kaylene.johnson@gmail.com" <kaylene.johnson@gmail.com>
Cc: "Anne Brooks (anne.brooks.alaska@gmail.com)" <anne.brooks.alaska@gmail.com>

Kaylene-
Thanks for the call today about the Kenai Mountains-Turnagain Arm National Heritage Area signage you are working on. As I mentioned, it would be very helpful if you could send us a quick email describing the MP 107.5 monument sign and permitting process that the Heritage Area group is working on so that we can discuss with our DOT&PF Windy Corner project manager.

Thanks,
Rachel

Rachel Steer
Public Involvement Manager

Seward Highway, MP 105-107, Windy Corner Improvements:

Appendix I, Part 2: LWCF Environmental Assessment Public Review Comments and Responses

Anchorage, Alaska

March 2018

ACRONYMS AND ABBREVIATIONS

ADF&G..... Alaska Department of Fish & Game

CIBW..... Cook Inlet Beluga Whale

CSP .....Chugach State Park

DNR ..... Alaska Department of Natural Resources

DOT&PF..... State of Alaska Department of Transportation and Public Facilities

EA ..... Environmental Assessment

FHWA .....Federal Highway Administration

LOS ..... Level of service

LWCF .....Land and Water Conservation Fund

MP .....Milepost

NEPA.....National Environmental Policy Act

NMFS.....National Marine Fishery Service

NPS.....National Park Service

Notice of Availability Land and Water Conservation Act Section 6(f) Environmental Assessment Seward Highway Mileposts 105-107, Windy Corner

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is proposing improvements to the Seward Highway between Mileposts (MP) 105 and 107. This portion of the highway is located within a right-of-way that is within Chugach State Park boundary. Chugach State Park is protected in its entirety under the federal Land and Water Conservation Fund Act, Section 6(f)(3), Public Law 108-198.

DOT&PF proposes to remove 39.56 acres Chugach State Park property from federal protection by converting it from public recreation lands to a transportation use. The proposed conversion would provide right-of-way and material sites to construct proposed highway improvements between MP 105 and MP 107. The Seward Highway from Anchorage to Girdwood is a designated safety corridor because of its elevated rate of high-severity motor vehicle crashes.

DOT&PF has prepared an Environmental Assessment (EA) that identifies anticipated environmental impacts associated with the proposed conversion. Pursuant to statute, DOT&PF will offer equal valued lands to compensate for the proposed conversion of Chugach State Park lands.

The Draft EA is available for review at the DOT&PF Central Region office, located at 4111 Aviation Avenue in Anchorage, Alaska and on the DOT&PF website at: www.windycorner.info (see Documents). If you have questions or require additional information, please contact Tom Schmid, DOT&PF Project Manager, at (907) 269-0543, or via email at tom.schmid@alaska.gov. Comments will be accepted until February 10, 2016 and can be submitted by email to brain.elliott@alaska.gov or mailed to:

Brian Elliott, Regional Environmental Manager
DOT&PF, Preliminary Design & Environmental
PO Box 196900
Anchorage, AK 99519-6900

Department of Transportation & Public Facilities (DOT&PF) policy is no person shall be excluded from participation in, or be denied benefits of any and all programs or activities we provide based on race, religion, color, gender, age, marital status, ability, or national origin, regardless of the funding source including Federal Transit Administration, Federal Aviation Administration, Federal Highway Administration and State of Alaska Funds.

DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to comment should contact Anne Brooks at (907) 272-1877. Individuals with a hearing impairment can contact DOT&PF via the Telephone Device for the Deaf (TDD) at (907) 269-0473.

Attachments, History, Details

Attachments
None

Revision History
Created 1/10/2017 3:17:56 PM by mlbyrd

Details

Department:	Transportation and Public Facilities
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Sub-Category:	
Location(s):	Central Region
Project/Regulation #:	
Publish Date:	1/10/2017
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Events/Deadlines:

Newspaper Clipping

Publication:	*Alaska Dispatch News*
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B&A Project No.	3929.07
Project Name:	***Seward Highway MP 105-107, Windy Corner Project 0A31034/Z566310000***



getting in the way.

3151 PALMER WASILLA, AK • 376.8100

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NOTICE OF INTENT TO CONTINUE ENGINEERING AND ENVIRONMENTAL STUDIES

Seward Highway: MP 105-107, Windy Corner Safety Improvements Project No. 0A3134/Z566310000

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is soliciting comments and information on continuing engineering and environmental studies for a proposal to construct safety and other improvements between Milepost (MP) 105 and MP 107 of the Seward Highway. This Notice of Intent is for a new environmental document for the proposed project. The proposed project is located on the Seward Highway between Rainbow and Indian, within the Municipality of Anchorage, Alaska. The proposed work would include:

- Realignment of Seward Highway between MP 105 and 107.5
- Construction of two through travel lanes, and two auxiliary lanes
- South bound left turn pocket will constructed for access to scenic turnout
- Construction of a new major scenic turnout with elements located on both sides of the highway connected by a pedestrian pathway and underpass
- Construction of a new emergency response access ramp
- Supporting features including improved drainage, rockfall ditches, utilities, and lighting
- Realignment of the Alaska Railroad
- Material site development within Chugach State Park

Additional project information can be found at the following location:

http://www.dowlhkm.com/projects/windycorner/index.html

This proposed project will comply with Section 106 of the National Historic Preservation Act; Executive Orders: 11990 (Wetlands Protection), 11988 (Floodplain Protection), 12898 (Environmental Justice); the Clean Air Act, Clean Water Act, Fish and Wildlife Coordination Act, and U.S. DOT Act Section 4(f).

Construction for the proposed project is anticipated to begin in Summer 2018. To ensure that all possible factors are considered, please provide written comments to the following address by May 13th, 2017.

Brian Elliott, Regional Environmental Manager
DOT&PF Preliminary Design & Environmental
P.O. Box 196900
Anchorage, Alaska 99519-6900

If you have any questions or require additional information, please contact Tom Schmid, P.E., Project Manager, at 269-0543 or Mark Boydston, Environmental Impact Analyst, at 269-0524.

It is the policy of the Alaska Department of Transportation & Public Facilities (DOT&PF) that no person shall be excluded from participation in, or be denied benefits of any and all programs or activities we provide based on race, religion, color, gender, age, marital status, ability, or national origin, regardless of the funding source including Federal Transit Administration, Federal Aviation Administration, Federal Highway Administration and State of Alaska Funds.

268714
#1398179
$900.00

AFFIDAVIT OF PUBLICATION

STATE OF ALASKA
THIRD JUDICIAL DISTRICT

Lisa Robinson
being first duly sworn on oath deposes and says that she is a representative of the Alaska Dispatch News, a daily newspaper. That said newspaper has been approved by the Third Judicial Court, Anchorage, Alaska, and it now and has been published in the English language continually as a daily newspaper in Anchorage, Alaska, and it is now and during all said time was printed in an office maintained at the aforesaid place of publication of said newspaper. That the annexed is a copy of an advertisement as it was published in regular issues (and not in supplemental form) of said newspaper on

January 8th, 2017

and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is not in excess of the rate charged private individuals.

Signed Lisa Robinson

Subscribed and sworn to before me this 10 day of April 20 17

Britney Thompson

Notary Public in and for
The State of Alaska.
Third Division
Anchorage, Alaska

MY COMMISSION EXPIRES
2/23/2019

Notary Public
BRITNEY L. THOMPSON
State of Alaska
My Commission Expires Feb 23, 2019



SEWARD HIGHWAY
MP 105-107
Windy Corner

Notice of Availability
Land and Water Conservation Act Section 6(f)
Environmental Assessment
Seward Highway Mileposts 105-107
Windy Corner
Project No. NH-0A3-134/Z566310000

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is proposing improvements to the Seward Highway between Mileposts (MP) 105 and 107. This portion of the highway is located within a right-of-way that is within Chugach State Park boundary. Chugach State Park is protected in its entirety under the federal Land and Water Conservation Fund Act, Section 6(f)(3), Public Law 108-198.

DOT&PF proposes to remove 39.56 acres Chugach State Park property from federal protection by converting it from public recreation lands to a transportation use. The proposed conversion would provide right-of-way and material sites to construct proposed highway improvements between MP 105 and MP 107. The Seward Highway from Anchorage to Girdwood is a designated safety corridor because of its elevated rate of high-severity motor vehicle crashes.

DOT&PF has prepared an Environmental Assessment (EA) that identifies anticipated environmental impacts associated with the proposed conversion. Pursuant to statute, DOT&PF will offer equal valued lands to compensate for the proposed conversion of Chugach State Park lands.

The Draft EA is available for review at the DOT&PF Central Region office, located at 4111 Aviation Avenue in Anchorage, Alaska and on the DOT&PF website at: www.windycorner.info (see Documents). If you have questions or require additional information, please contact Tom Schmid, DOT&PF Project Manager, at (907) 269-0543, or via email at tom.schmid@alaska.gov. Comments will be accepted until to close of business, February 20, 2017 and can be submitted by email to brian.elliott@alaska.gov or mailed to:

Brian Elliott, Regional Environmental Manager
DOT&PF, Preliminary Design & Environmental
PO Box 196900, Anchorage, AK 99519-6900

Department of Transportation & Public Facilities (DOT&PF) policy is no person shall be excluded from participation in, or be denied benefits of any and all programs or activities we provide based on race, religion, color, gender, age, marital status, ability, or national origin, regardless of the funding source including Federal Transit Administration, Federal Aviation Administration, Federal Highway Administration and State of Alaska Funds. DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to comment should contact Anne Brooks at (907) 272-1877. Individuals with a hearing impairment can contact DOT&PF via the Telephone Device for the Deaf (TDD) at (907) 269-0473.

PUBLISHER'S AFFIDAVIT

UNITED STATES OF AMERICA,
STATE OF ALASKA } SS:

Elizabeth A. Ulricksen being first duly sworn, on oath deposes and says:

That I am and was at all times here in this affidavit mentions, Supervisor of Legals of the Morris Publishing Group/Peninsula Clarion, a newspaper of general circulation and published at Kenai, Alaska, that the

Legal Notice: Windy Corner

a printed copy of which is hereto annexed was published in said paper once each and every day for 1 successive and consecutive day in the issues on the following dates:

January 8th, 2017

X _____

SUBSCRIBED AND SWORN to me before this 10 day of April, 2017.

_____

NOTARY PUBLIC in favor for the State of Alaska.

Notary Public
J. HAMLIN
State of Alaska
My Commission Expires May 6, 2019

My commission expires May 6, 2019.

Orca that killed trainer dies at SeaWorld Orlando

By MIKE SCHNEIDER and JENNIFER KAY
Associated Press

ORLANDO, Fla. — Tilikum the orca has died after more than two decades at SeaWorld Orlando, where he gained notoriety for killing a trainer in 2010 and was later profiled in a documentary that helped sway popular opinion against keeping killer whales in captivity.

He will not be replaced. He was the first of SeaWorld's orcas to die since the company announced the end of its orca breeding program in March 2016.

In a statement announcing Tilikum's death early Friday, SeaWorld officials said he had serious health issues including a persistent and complicated bacterial lung infection. Tilikum was estimated to be 36 years old. A necropsy will determine the cause of death.

The 2010 death of SeaWorld trainer Dawn Brancheau during a performance with Tilikum after a "Dine with Shamu" show shocked the public and changed the future of orcas at SeaWorld parks.

Brancheau was interacting with Tilikum before a live audience at SeaWorld Orlando when he pulled her from a platform by her arm and held her underwater.

An autopsy report said Brancheau drowned but also suffered severe trauma, including multiple fractures.

Former SeaWorld orca trainer John Hargrove said Tilikum's death offered some closure in the violent death of his friend and colleague. But he said Tilikum also finally found relief.

"Tilikum has been sick, very sick, for so long, and after everything he's had to endure, this is to me like he's free," said Hargrove, who left SeaWorld in 2012 and was featured in the documentary "Blackfish."

"He lived a tortured existence in captivity. I think all the whales do, but if you had to pinpoint one of them, hands down I would say Tilikum."

Animal rights advocates who want orcas and other marine mammals at SeaWorld parks released into sea pens or coastal sanctuaries said Tilikum was snared in a business model that led only to tragedy. Lisa Lange, senior vice president for the group People for the Ethical Treatment of Animals, urged SeaWorld to release its remaining orcas and marine mammals to "spend the rest of their lives in as natural a setting as possible."

SeaWorld supporters found something worthwhile in Tilikum's time at the park.

"His story is a complicated one, but I also think he represented his species well," said Grey Stafford, president of the International Marine Trainers' Association. He's also a former SeaWorld employee, though he never worked with Tilikum. "In retrospect, there are a lot positives to say."

SeaWorld President and CEO Joel Manby said, "Tilikum had, and will continue to have, a special place in the hearts of the SeaWorld family, as well as the millions of people all over the world that he inspired."

According to National Oceanic and Atmospheric Administration figures, male killer whales in the wild typically live about 30 years and females typically live about 50 years. Institutions displaying marine mammals and their critics disagree over whether orcas' life expectancy in captivity differs from their life span in the wild.

Tilikum had been SeaWorld's most prolific male orca, siring 14 calves since his arrival at the park about 25 years ago. He was noticeable for his size at more than 22 feet and 11,800 pounds.

He was born off the waters of Iceland and brought to Sealand of the Pacific in Canada after being captured. While at Sealand in 1991, Tilikum and two female orcas were responsible for the death of a part-time trainer who fell into their pool and was submerged by them.

Tilikum was moved to SeaWorld Orlando in 1992, and Sealand later closed.

SeaWorld's decision to end the breeding program and phase out the theme parks' traditional orca performances came three years after the release of the documentary, "Blackfish," which chronicled Tilikum's life and Brancheau's death.

Her death was not the only one linked to Tilikum at SeaWorld. In 1999, a naked man who had eluded security and sneaked into SeaWorld at night was found dead the next morning draped over Tilikum in a breeding tank in the back of Shamu Stadium.

"Blackfish" argued that killer whales in captivity become more aggressive toward humans and each other. Because of it, several entertainers pulled out of planned performances at SeaWorld parks and animal rights activists increased their demonstrations outside the parks.

SeaWorld attendance dipped, company profits fell and Southwest Airlines ended its 25-year relationship with the theme park company.

Gabriela Cowperthwaite, who directed "Blackfish," said in an email that it's time to focus on other whales in captivity. "He lived a horrible life, he caused unspeakable pain, so at least his chapter is over," she said.

In March, SeaWorld's CEO acknowledged that the public's attitude had changed about keeping killer whales captive.

"We needed to move where society was moving," Manby said.

Tilikum's death was another blow for SeaWorld employees already reeling from job cuts announced last month across SeaWorld Entertainment Inc's 12-park system, Stafford said. He worried the loss of employees trained to care for marine mammals may inadvertently weaken other conservation efforts, such as a captive breeding program proposed for endangered porpoises called vaquitas in the waters off Mexico.

"That human experience isn't likely to be replaced," Stafford said.

Kay contributed to this report from Miami Beach, Florida.



AP Photo/Ryan M. Eberhardt, File

In this March 7, 2011 file photo orca whale Tilikum, right, watches as SeaWorld Orlando trainers take a break during a training session at the theme park's Shamu Stadium in Orlando, Fla. Tilikum, an orca that killed a trainer at SeaWorld Orlando in 2010, has died. According to SeaWorld, the whale died Friday.

Several Trump picks' ethics reviews are incomplete

By MARY CLARE JALONICK
Associated Press

WASHINGTON — Several of President-elect Donald Trump's Cabinet choices have not completed a full review to avoid conflicts of interest, the government's ethics office says, even as Republican senators move quickly to hold at least nine confirmation hearings next week.

In a letter to Senate leaders, the director of the Office of Government Ethics described the current status of several nominees, some of whom are billionaires and millionaires, in the ethics process and expressed concern about the lack of ethics reviews just days from committee hearings.

The Associated Press obtained a copy of Walter Shaub's letter.

"During this presidential transition, not all of the nominees presently scheduled for hearings have completed the ethics review process. In fact, OGE has not received even initial draft financial disclosure reports for some of the nominees scheduled for hearings," Shaub wrote to Senate Minority Leader Chuck Schumer, D-N.Y., and Sen. Elizabeth Warren, D-Mass.

A copy of the letter also was provided to Senate Majority Leader Mitch McConnell, R-Ky.

Republicans are intent on getting as many of Trump's choices through the arduous confirmation process as quickly as possible so his team will be in place soon after Trump takes the oath of office on Jan. 20.

Democrats have complained that the GOP is moving too fast and that they lack information about some of the wealthiest Americans to serve a president.

Schumer said in a statement Saturday that the letter "makes crystal clear that the transition team's collusion with Senate Republicans to jam through these cabinet nominees before they've been thoroughly vetted is unprecedented."

The forms in question are financial disclosures certified by the ethics office and also written ethics agreements between the nominee and the office that identify potential conflicts of interest and the ways in which the nominee will resolve those conflicts.

They are required by the Ethics in Government Act of 1978, passed after the Watergate scandal.

One of the committees that hasn't yet received the forms is the Senate Health, Education, Labor and Pensions Committee, which has scheduled a hearing next week for Betsy DeVos, Trump's pick to lead the Education Department.

Committee aides said the panel held hearings for former Education Secretary Roderick Paige and former Labor Secretary Elaine Chao before they received the same forms in 2001, and that they received the documents days after each of those hearings. Both were confirmed to serve in President George W. Bush's Cabinet.

That committee's rules state that the committee cannot hold a vote on the nominee without the ethics form. In a statement, the committee chairman, Sen. Lamar Alexander, R-Tenn., said the committee is going to "follow the Golden Rule and use the same procedures for these nominees that we did in 2001 for President Bush's nominees and in 2009 for President Obama's nominees."

Aides to the Senate Judiciary and Foreign Relations committees said they had received the ethics forms for Sen. Jeff Sessions, Trump's pick for attorney general, and Rex Tillerson, Trump's choice for secretary of state.

A spokeswoman for the Commerce, Science and Transportation Committee said they had also received the forms for Chao, whom Trump has picked as his transportation secretary.

Shaub did not list which of Trump's Cabinet choices hadn't turned in their disclosures. But other confirmation hearings next week include Rep. Mike Pompeo, R-Kan., for director of the Central Intelligence Agency; retired Marine Gen. John Kelly for homeland security secretary; Ben Carson for housing secretary; Wilbur Ross for commerce secretary; and retired Gen. James Mattis for defense secretary.

Committees handling those nominations did not return a request for comment on the records.

In the letter, Shaub said the lack of disclosure has left some of the nominees "with potentially unknown or unresolved ethics issues" just before their scheduled hearings.

He said the intensive process of checking nominees and creating the agreements has been complicated by the packed Senate hearing schedule and Trump's announcements of his future nominees before consulting the office for evaluation of ethics issues. Traditionally, a president or president-elect's picks have not been announced until the office has already cleared the nominees, Shaub said.

"In the past, the ethics work was fully completed prior to the announcement of nominees in the overwhelming majority of cases," Shaub wrote.

Shaub was appointed by President Barack Obama to a five-year term in 2013 to lead the office, which is an independent agency within the government.

He had worked at the office for several years before that, including during the Republican Bush administration. The office attracted attention in November when it tweeted congratulations to Trump for a "total divestiture" that he had not promised.

Under divestiture, an incoming federal official can sell off massive investments, defer paying capital gains and house the proceeds in Treasury bonds or diversified mutual funds.

But Trump had not then confirmed — and still hasn't — that he will turn over any assets as part of a divestiture.

Trump is expected to discuss the future of his business at a news conference Wednesday, the same day as many of the confirmation hearings.

Today in History

Today is Sunday, Jan. 8, the eighth day of 2017. There are 357 days left in the year.

Today's Highlight in History:

On Jan. 8, 1867, the U.S. House of Representatives joined the Senate in overriding President Andrew Johnson's veto of the District of Columbia Suffrage Bill, giving black men in the nation's capital the right to vote.

On this date:

In 1642, astronomer Galileo Galilei died in Arcetri, Italy.

In 1790, President George Washington delivered his first State of the Union address to Congress in New York.

In 1815, the last major engagement of the War of 1812 came to an end as U.S. forces defeated the British in the Battle of New Orleans, not having gotten word of the signing of a peace treaty.

In 1918, President Woodrow Wilson outlined his Fourteen Points for lasting peace after World War I. Mississippi became the first state to ratify the 18th Amendment to the Constitution, which established Prohibition.

In 1935, rock-and-roll legend Elvis Presley was born in Tupelo, Mississippi.

In 1959, Charles de Gaulle was inaugurated as president of France's Fifth Republic.

In 1964, President Lyndon B. Johnson, in his State of the Union address, declared an "unconditional war on poverty in America."

In 1978, Chinese premier Zhou Enlai, 77, died in Beijing.

In 1982, American Telephone and Telegraph settled the Justice Department's antitrust lawsuit against it by agreeing to divest itself of the 22 Bell System companies.

In 1987, for the first time, the Dow Jones industrial average closed above 2,000, ending the day at 2,002.25.

In 1967, the state of Arkansas put three men to death in the second triple execution since capital punishment was reinstated in 1976. (The first also occurred in Arkansas, in 1994.)

In 2011, U.S. Rep. Gabrielle Giffords, D-Ariz., was shot and critically wounded when a gunman opened fire as the congresswoman met with constituents in Tucson; six people were killed, 12 others also wounded. (Gunman Jared Lee Loughner (LAWF'-nur) was sentenced in Nov. 2012 to seven consecutive life sentences, plus 140 years.)

Ten years ago: A Moroccan (Mounir el-Motassadeq) convicted of aiding three of the four suicide pilots who had committed the Sept. 11 attacks was sentenced by a German court to the maximum of 15 years in prison for his role in the terror plot. The Florida Gators won college football's national championship by defeating the Ohio State Buckeyes 41-14. Actress Yvonne De Carlo died in Woodland Hills, California, at age 84.

Five years ago: Bells rang in Tucson, Arizona, as residents paused to remember the six people killed in the shooting rampage a year earlier that left Congresswoman Gabrielle Giffords severely wounded; Giffords led a crowd in the Pledge of Allegiance during an evening vigil. Mitt Romney's Republican presidential rivals piled on the criticism during a morning debate, two days before the New Hampshire primary. The New York Giants ran all over Atlanta in a 24-2 rout of the Falcons in an NFC wild-card game. The Denver Broncos stunned the Pittsburgh Steelers 29-23 in overtime in the AFC wild-card game.

One year ago: Joaquin "El Chapo" Guzman, the world's most-wanted drug lord, was captured for a third time in a daring raid by Mexican marines, six months after walking through a tunnel to freedom from a maximum security prison in a made-for-Hollywood escape that deeply embarrassed the government and strained ties with the United States. Oakland Raiders defensive end and outside linebacker Khalil Mack made history, earning a selection at two positions on the 2015 Associated Press All-Pro Team, an NFL first. Hall of Fame rhythm and blues artist Otis Clay, 73, died in Chicago.

Today's Birthdays: Actor-comedian Larry Storch is 94. Broadcast journalist Sander Vanocur is 89. CBS newsman Charles Osgood is 84. Singer Shirley Bassey is 80. Game show host Bob Eubanks is 79. Country-gospel singer Cristy Lane is 77. Rhythm-and-blues singer Anthony Gourdine (Little Anthony and the Imperials) is 76. Actress Yvette Mimieux is 75. Physicist Stephen Hawking is 75. Singer Juanita Cowart Motley (The Marvelettes) is 73. Actress Kohlhaan Noore is 72. Rock musician Robby Krieger (The Doors) is 71. Movie director John McTiernan is 66. Actress Harriet Sansom Harris is 62. Singer-songwriter Ron Sexsmith is 53. Actress Maria Pitillo (pih-TIHL'-loh) is 52. Actress Michelle Forbes is 52. Singer R. Kelly is 50. Rock musician Jeff Abercrombie (Fuel) is 48. Actress Am. Dalenz is 48. Reggae singer Sean Paul is 44. Country singer Tift Merritt is 42. Actress-rock singer Jenny Lewis is 41. Actress Amber Benson is 40. Actor Scott Whyte is 39. Singer-songwriter Erin McCarley is 36. Actress Sarah Polley is 38. Actress Rachel Nichols is 37. Actress Gaby Hoffman is 36. Rock musician Disashi Lumumbo-Kasongo (dih-SAH'-shee LUHM'-uhm-boh kuh-SAHN'-goh) (Jimmy Class Heroes) is 34. Actor Freddie Stroma is 30.

Thought for Today: "No written law has ever been more binding than unwritten custom supported by popular opinion." — Carrie Chapman Catt, American suffrage leader (1859-1947).

Notice of Default and Need of Trust & Personal Property

Foreclosure Sale



Waterfront Fishing Lodge
485 Kattian St., Sitka, Alaska 99835

This waterfront lodge, "Fly-In Fish Inn," is located downtown in the community of Sitka, Alaska.

This property will be sold at auction, Tue January 24, 2017 at the Sitka State Courthouse, 304 Lake St., Sitka, Alaska.

PROPERTY FEATURES

Main Lodge (8,770 sq. ft)
- 3-story lodge with 10 guest suites, dining room, bar, commercial kitchen and 2 apartments

2-Story Duplex (3,840 sq. ft)
- Two 1 bedroom units that include Great Room and laundry room

2-Story Office/Apartment Building on Floats (3,645 sq ft)
- Lower unit is used as an on-site business and includes office area, dispatch area and waiting room.
- Upper level has two one-bedroom housing units.
- Float includes a fiberglass ramp, plank tie-down area and boat moorage.

Personal Property Subject to Foreclosure

All inventory, Accounts, Accounts Receivable, Equipment, Leases, Lease Rights/Rents, Per Paid Bookings, General Intangibles, all Fixtures, Furniture, Building Materials, Pumps, Piers, Specifications, and Drawings, all Floats, Ramps, Docks, Dolphins, the barge designated DV Reddie, Official No. 646531, including all body tackle, engine, machinery, furniture, fishing gear, electronic and navigational equipment all to the extent such items are in existence and located at, in or associated with Grantors operations on the Real Property as of the date of sale (the "Personal Property"). YOU ARE FINALLY NOW HAVE NOTICE AND ITS INTENT TO SELL THE PERSONAL PROPERTY IN CONJUNCTION WITH ANY ON THE SAME TERMS AS THE SALE OF THE REAL PROPERTY. TITLE TO THE PERSONAL PROPERTY WILL BE CONVEYED AS IS WHERE IS WITHOUT FAULTS AND WITHOUT ANY WARRANTY AS TO EXISTENCE, TITLE, CONDITION, POSSESSION, QUIET ENJOYMENT OR FREEDOM.

The amount owing as of $7,901,960.19 including, note balance, accrued interest, attorney fees and costs, as of 10/11/2016. Interest on note balance will accrue at 7% and additional costs of foreclosure will also be due as of 1/24/2017. Payment is due at the time of sale in cash or cashier's check.

More information is available by calling Jeremy Weber at First Bank, 907-226-4295.

SEWARD HIGHWAY
MP 105-107
Windy Corner

Notice of Availability
Land and Water Conservation Act Section 6(f)
Environmental Assessment
Seward Highway Mileposts 105-107
Windy Corner
Project No.NH-0A3-1341(56)31000

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), is proposing improvements to the Seward Highway between Mileposts (MP) 105 and 107. This portion of the highway is located within a right-of-way that is within Chugach State Park boundary. Chugach State Park is protected in its entirety under the federal Land and Water Conservation Fund Act, Section 6(f)(3), Public Law 108-198.

DOT&PF proposes to remove 39.56 acres Chugach State Park property from federal protection by converting it from public recreation lands to a transportation use. The proposed conversion would provide right-of-way and material sites to construct proposed highway improvements between MP 105 and MP 107. The Seward Highway from Anchorage to Girdwood is a designated safety corridor because of its elevated rate of high-severity motor vehicle crashes.

DOT&PF has prepared an Environmental Assessment (EA) that identifies anticipated environmental impacts associated with the proposed conversion. Pursuant to statute, DOT&PF will offer equal valued lands to compensate for the proposed conversion of Chugach State Park lands.

The Draft EA is available for review at the DOT&PF Central Region office, located at 4111 Aviation Avenue in Anchorage, Alaska and on the DOT&PF website at: www.windycorner.info (see Documents). If you have questions or require additional information, please contact Tom Schmid, DOT&PF Project Manager, at (907) 269-0543, or via email at tom.schmid@alaska.gov. Comments will be accepted until to close of business, February 28, 2017 and can be submitted by email to brian.elliott@alaska.gov or mailed to:

Brian Elliott, Regional Environmental Manager
DOT&PF, Preliminary Design & Environmental
PO Box 196900, Anchorage, AK 99519-6900

Department of Transportation & Public Facilities (DOT&PF) policy is no person shall be excluded from participation in, or be denied benefits of any and all programs or activities we provide based on race, religion, color, gender, age, marital status, ability, or national origin, regardless of the funding source including Federal Transit Administration, Federal Aviation Administration, Federal Highway Administration and State of Alaska Funds. DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with disabilities who may need auxiliary aids, services, and/or special modifications to comment should contact Anne Brooks at (907) 222-1429. Individuals with a hearing impairment can contact DOT&PF via the Telephone Device for the Deaf (TDD) at (907) 269-0473.

Responses to Frequent Comments

Following are a series of responses to comments frequently asked during the public review period. Each is assigned a letter to identify this response to the relevant comment as they occur in the series of comments received.

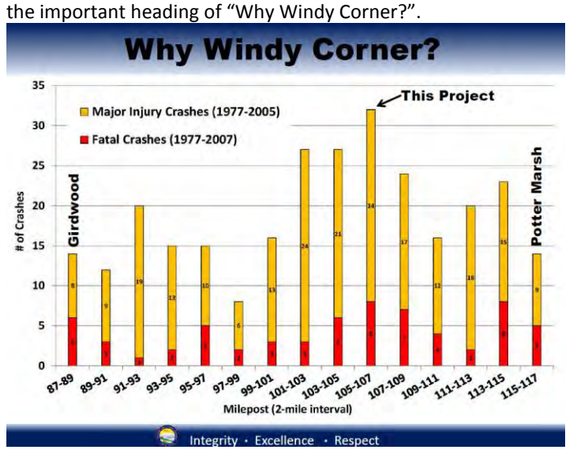
Subject/ Comment ID	Response
Project Cost and Funding (**A**)	The proposed highway improvements between Milepost (MP) 105 and MP107 would be funded through a combination of Federal and State funds. The proportion of Federal (FHWA) funds vs state funds has not yet been determined. Federal and state transportation planners evaluate proposed projects on need and transportation funds are generally allocated to the highest priority needs. Seward Highway's designation as a Safety Corridor elevates the importance of this corridor as a high priority need for Alaska. This need has been recognized by the Alaska Legislature in approving the funding for the project.
Sheep & Terrestrial Habitat (**B**)	State of Alaska, Department of Transportation and Public Facilities (DOT&PF) has coordinated with resource agencies throughout this process, including Alaska Department of Fish & Game (ADF&G). Dall sheep are not a protected species, however the Environmental Assessment (EA) recognizes that they are an iconic wildlife species in this area and a popular tourist attraction due to their frequent activity in close proximity to the road. Based on public and agency comments, DOT&PF has incorporated mitigation measures intended to reduce potential effects to sheep, including 1) aligning the proposed highway corridor further out into Turnagain Arm to avoid impacts to the high-value habitat area and 2) improving the turnouts to enhance the public's ability to safely view the wildlife. Habitat impacts for sheep, moose and other terrestrial fauna from quarrying and road construction are considered in the EA.
Use of State Parkland (**C**)	Any Federally-funded, proposed transportation use of State parkland, wildlife refuge, or historic site, is required to undergo a thorough analysis, based on Section 4(f) of the Department of Transportation Act, and in some cases under Section 6(f) of the Land and Water Conservation Fund (LWCF) Act (if LWCF funding was used to purchase and/or improve a facility). This EA is documenting the expected effects of removing the federal protection under Section 6(f) of the LWCF. A separate environmental assessment will be prepared on the proposed highway improvement project. The proposed uses are not precluded under these laws, but the 4(f) and 6(f) requirements contain very specific and high standards that must be demonstrated, and any impacts mitigated before approval will be granted.
Material site comparisons (**D**)	In response to early input on material options, DOT&PF commissioned an independent third-party material cost analysis, incorporating different material sources and different modes of material transport for the project. This study occurred following completion of the Draft EA. This information from the third-party analysis is included in the final EA, and is also available on the project website (http://projects.dowl.com/projects/windycorner/documents.html).
Aesthetics, National Scenic Byway, CSP (**E**)	As the only road route between Anchorage and communities to the south, Seward Highway is a heavily traveled route that must safely accommodate traffic demand. Constructing improvements to the highway will require scenic intrusions from some combination of excavation of the mountainside and/or fill on the oceanside of the highway/railway. Avoidance, minimization and mitigation measures will be implemented to reduce visual intrusions; however, some visual intrusions are unavoidable. It is estimated that the proposed MP109 material site would be visible from no more than 0.6 miles of the National Scenic Byway's 127-mile length. The proposed MP104 material site, in the unlikely event it becomes necessary, would be visible for approximately 0.8 miles, and partially visible for another 0.8 miles.
Rainbow community (**F**)	This EA covers the proposed conversion of specific parts of Chugach State Park, which must be conducted in accordance with Federal law because LWCF grants have been used in the park. This EA documents that there will be short-term noise and air quality effects during construction. The final EA clarifies that these effects are likely to be felt in the community of Rainbow. In addition, there will be a separate EA covering the proposed highway construction project, including the material site development. The forthcoming environmental document for the proposed construction project, will contain an analysis of effects, and will provide an opportunity for additional public review and comment.
Safety need – 'old' accident data (**G**)	The accident rate data has been updated for the Final EA. It now includes all data from 1977 – 2012, which incorporates available data following the Safety Corridor designation. Project design began in 2013. According to DOT&PF, 'Fatal and major injury crashes are a serious problem in the Safety Corridors. DOT&PF and Department of Public Safety are tasked by law with the responsibility of reducing these crashes. It is recognized that these roads are at or near traffic volume capacity. Long term, major road projects are needed to address traffic volume growth and safety' (http://www.dot.state.ak.us/highwaysafety/safety_corridors.shtml). The designation of Seward Highway as a 'Safety Corridor' provided state funding to implement "immediate term" cost-effective solutions to reduce severe crashes on the Seward Highway, while recognizing long-term major road projects are needed to address traffic volume growth. In addition, Seward Highway is the only north-south route connecting the Kenai Peninsula with the Alaska mainland and there are no other practical alternatives to accommodate increased traffic. Level of service (LOS) is an indicator of the extent or degree of service provided by a facility based on and related to the operational characteristics of the facility. The highway currently operates at LOS D under average daily peak-hour conditions; during the summer months, volumes exceeding 22,000 vehicles per day cause service to drop to LOS E and F.
Appraisal value (**H**)	The property appraisal process is established by the Uniform Appraisal Standards for Federal Land Acquisitions (2016), and is in compliance with Federal regulation 36 CFR 59.3(b)(2) of the LWCF. This appraisal was prepared by an independent, certified General Real Estate Appraiser, and was reviewed by an independent, certified review appraiser, each licensed in the State of Alaska.
CIBW impacts (**I**)	DOT&PF coordinated with resource agencies throughout this process, including the National Marine Fisheries Service (NMFS). As requested by NMFS, a Biological Assessment was conducted for the Cook Inlet beluga whale (CIBW) population, assessing potential impacts to this population and their habitat. NMFS concurred with the finding that the project 'May Affect', but is 'Not Likely to Adversely Affect' the CIBW population. The Biological Assessment, and NMFS concurrence, is provided as an appendix to both the draft and final EA.
P&N, 'No Action' Alternative (**J**)	The purpose and need for the proposed conversion are clearly stated in Chapter 1, and are in accordance with the National Environmental Policy Act (NEPA). NEPA also dictates that major Federal actions (project, funding, or other activity) be evaluated for potential environmental effects. A NEPA review requires project effects be compared to a No Action alternative and any other potential Action alternatives carried forward as a type of benchmark for being able to compare effects of various alternatives. It is not unusual, however, that project meetings focus on what is proposed and not on the No Action alternative, which is basically that the project does not happen.

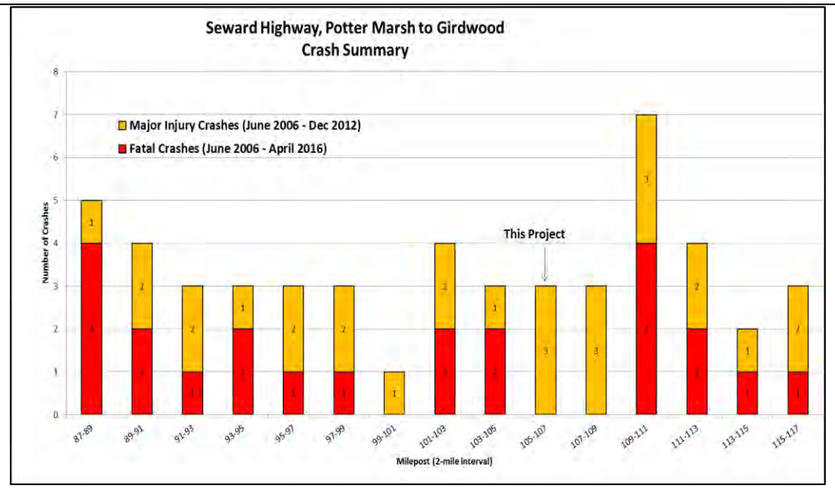
Recreational effects (**K**)	The EA indicates that there are likely to be effects on recreation, however these effects will be mitigated through the transfer of the relinquished highway parcel to Chugach State Park (CSP) and construction of recreational access improvements on that parcel. The highway improvements would be visible from a few stretches of Turnagain Arm Trail, just as they are today. The proposed material sites at MP109 and MP104 would not be visible from Turnagain Arm Trail. The MP109 material site is proposed as a future group use site in the CSP Management Plan (http://dnr.alaska.gov/parks/units/chugach/manageplanchug.htm; Chapter 6, Turnagain Arm Planning Unit). CSP provides for a variety of recreation experiences from wilderness areas to developed recreation sites, particularly along the Seward Highway. Some recreation values and uses may be adversely affected, but other recreation uses will benefit. The proposed project is consistent with park management goals and objectives.
PI – Anchorage (**L**)	DOT&PF conducted public outreach on this project in Anchorage and along Turnagain Arm as well as through a project website and other measures. Specifically, DOT&PF conducted project public meetings in Anchorage on April 19, 2016, at the Alaska Trails and Chugach Trail Committee at REI on April 18, 2016, and at the Anchorage Transportation Fairs in 2015, 2016, 2017, and 2018. There will be a separate EA prepared for the highway improvement project and additional opportunities to comment on that EA.

Comments Received

Comments received are listed by commenter. Responses may be found in the second column, following the comments.

Durschi, Shirley On Jan 8, 2017, at 9:44 PM, ShirleyDurtschi <skdurtschi@gmail.com> wrote: 1 | Poor use of Government Funds. 2 | You will diminish the Sheep habitat. Self absorbed project DOWL! Sent from my iPhone	Thank you for your comment. 1. Please see Response A, above. 2. Please see Response B, above.
Snyder, Gary Brian- These comments refer to the proposed action to convert Chugach State Park lands from public recreation to transportation and material use between Mile 105-107 of the Seward Highway. I am not opposed to converting land for the purpose of transportation, as there is a clear safety need for these improvements. However, I am opposed to converting land for material use. The material may be collected from a site that is not a public park. 1 The proposed quarry or "material site" is not an appropriate or necessary use of Chugach State Park lands. There are not many other options for re-routing the highway, but there are other options for getting materials. In particular, the Alaska Railroad could be used to bring materials from another site. The proposed material site would be an eyesore along a National and Scenic Highway. It would be dangerous for people, who explore any roadside pullout possible along Turnagin Arm. It would degrade the views from the Turnagin Arm trail, and it would be an eyesore from Hope and Rainbow Valley. The mission of Chugach State Park is not to provide fill for construction projects, nor should it be. The proposed material site is too steep and too large. It would degrade the amazing views along Turnagin Arm and would pose an eternal eyesore and safety hazard.	Thank you for your comment. 1. Please see Responses C and D on the conversion of CSP lands for material site use, above. Please see Responses E, F, and K regarding impacts on scenic values and recreation. Some of the proposed project elements may be visible from very specific points along Hope Highway, and from Hope. The cut at Windy Corner itself would likely be visible, as would development of the MP104 material site. The primary material site, at MP109, would be partially screened by the intact topographic and vegetated buffer. All excavation and fill would be between 3.7 and 5.5 miles from the aforementioned locations along Hope Highway and Hope; they would account for a very small overall portion of the viewscape from the opposite side of Turnagain Arm. Except possibly at very high vantage points, the proposed MP109 material site will not be visible at ground level from Rainbow, given the topography and vegetation. Public access to the proposed MP109 material site would be restricted during construction. Following construction, the MP109 site would be subject to reclamation and management by DNR, including likely access restrictions such as rock bollards across the entrance.

Hansen, Pat Dear Project Participants, I have attended some of the public meetings on the Windy Corner project. At each one, the bar chart below was presented under the important heading of "Why Windy Corner?".  This bar chart is the only justification given at the public meetings for choosing the Windy Corner section of the highway (milepost (MP) 105-107). The problem with the chart is that it is not using the correct data. • The chart uses data that is too old. Seward Highway MP 87-117 was designated a "Traffic Safety Corridor" (TSC) in May 2006 and there was a subsequent 36% decrease in fatalities and major injury crashes. When deciding what else needs to be done to improve the safety of the highway only crashes since the TSC designation should be used. An analysis that includes crashes before the designation is not valid; those crashes are clearly no longer relevant. • The chart does not include current data. The data stops in 2005 for major injury crashes and in 2007 for fatalities. The most recent data available needs to be included in the analysis. Only data from 2006 – 2016 should be used in determining the most dangerous stretch of highway. I obtained more recent data from Miles Brookes (Traffic Records Research Analyst in the AK DOT) and recreated the original chart (see below) with data starting in 2006, the year the TSC began.	Thank you for your comment. 1. The Purpose and Need of the project is stated in Chapter 1, in the first and second paragraphs. Please see Response G, above regarding safety data.



As you can see, Windy Corner (105-107 in the chart) has had NO fatalities since the TSC designation, and its non-fatal statistics fall right in the middle of the pack. The justification given for this project doesn't make any sense at all. Surely if, as a member of the public, I can access the current data to create the second, more relevant chart, the project team can also?
I see that the graphic on the Windy Corner project team's website has been updated to include data to 2012. I have two points to make about this update. First, all the public input the project team has received is predicated on the old graphic and so what does that input now mean? That input is tainted by a faulty representation of the facts. Second, the updated graphic is only marginally better. It still includes data back to 1977 and still doesn't use data to 2016.
I ask that the project team please respond to the following question:
Given the data presented in the second chart above, what exactly is the reason for picking Windy Corner?

Thank you.
Pat Hansen

Johnson, Jennifer (Representative, District 28) **Rep. Jennifer Johnston** <Rep.Jennifer.Johnston@akleg.gov> Wed, Jan 18, 2017 at 10:04 AM To: Pat Hansen <pat.hansen.ak@gmail.com>, "windycorner@dowl.com" <windycorner@dowl.com>, "Sen. Cathy Giessel" <Sen.Cathy.Giessel@akleg.gov>, "snoble@dowl.com" <snoble@dowl.com>, "achristie@dowl.com" <achristie@dowl.com>, "marc.luiken@alaska.gov" <marc.luiken@alaska.gov>, "david.kemp@alaska.gov" <david.kemp@alaska.gov>, "Tom J (DOT)" <tom.schmid@alaska.gov> Cc: "rickjsinnott@gmail.com" <rickjsinnott@gmail.com> Thank you make an important point. It is important for the department to use current data.	Thank you for your comment. Please see Response G, above. The Final EA has been updated to include accident data from 1977-2012.
Miner, Mark Good afternoon Quinten, 1 Please share with me, or provide me with a link, to the latest, updated data on vehicular accidents along the Seward Highway that will be impacted by the proposed Windy Corner project. I believe this is something like M.P. 106 to M.P. 110. Thank you in advance for your assistance. Mark Miner	Thank you for your comment. [The request for information has been addressed by DOT&PF personnel]. Please see Response G, above. The Final EA has been updated to include accident data as available from 1977-2012.

Meacham, Thomas Anne: I have several questions re Windy Corner. 1 | 1. Can I obtain from your office a hard copy of the 2016 Environmental assessment for LWCF? I find it difficult to scroll through the 486 pages of the digital copy, and quite onerous to print out a hard copy of this document for my use. 2 | 2. Somewhere I have seen dimensional drawings, profiles and volumes of the proposed Rainbow rock quarry at MP 109, but I can't easily locate them now. Can you provide these, or direct me to them? 3 | 3. We have been assured that the cost comparisons of materials for the Windy Corner project would include comparisons of the Rainbow quarry costs with off-site costs to mine and deliver materials to the project — including the cost of obtaining and barging materials from a tidewater quarry site in lower Cook Inlet. But the comparisons on page 7, Table 1 of the LWCF document do not include any comparison of the relative costs of barging the materials. Why not? 4 | 4. How many truck-loads of materials will be required to move all of the needed rock from the Rainbow quarry to Windy Corner? At a meeting between ADOTPF and the Anchorage Planning & Zoning Commission that I attended last summer, I wrote down the figure of 150,000 truckloads, but I do not know if that is accurate, or if I mis-heard. What is the correct figure? 5 | 5. ADOTPF proposes to value the 19.6 acres of land to be converted from CSP at Rainbow at $53,000, or $3,704 per acre. This is the "surface value" of the CSP land involved. Yet the gravel and rock to be extracted from that quarry for the project will have a value to ADOTPF of very considerably more than that, perhaps up to $5 million or more. ADOTPF proposes to pay no royalty to CSP for this material; yet the use of this CSP land for a rock quarry is proposed as its "highest and best use." Why wasn't the appraiser instructed to evaluate the 19.6 acres on this basis? Why isn't CSP to receive the benefit of the true value of its land proposed to be converted from Park to rock quarry? I would appreciate your prompt responses to each of these questions, since the deadline for giving comments to LWCF is February 27, 2017. Thank you. Tom Meacham	Thank you for your comment. 1. [This request has been addressed by DOT&PF personnel] 2. The proposed MP109 material site development plan is available on the project website (http://projects.dowl.com/projects/windycorner/documents.html). 3. Please see Response D. 4. This is correct; our estimate for the number of trips necessary to move the quantity of material required for the project is approximately 150,000 truckloads. 5. Please see Response H, above.
Miner, Mark As a follow up to Tom Meacham's questions I am requesting vehicular crash data for the Windy Corner area (M.P. 105- 107) Please make sure the data is up to date (i.e. up to 2016). At the open house for the proposed Windy Corner realignment project held several months ago the crash data provided stopped at 2007. Thank you in advance for this data. Mark Miner	Thank you for your comment. Please see Response G, above.
Graber, Mark 1) I respectfully request that a more detailed and up to date cost assessment, considering the present sources of off site Borrow materials, be completed. 2) In the alternative I respectfully request that the State of Alaska Dept. of Natural Resources (Parks and Outdoor Rec) recommend AGAINST the proposed conversion and replacement to the National Park Service and instead direct the AkDOT to source Borrow and armor rock for the Windy Corner project from the many available non-CSP private sources of material in central Alaska. 3) There is a long lead time for barge-berth permits that necessitates that they be obtained in advance of the job being bid out. I respectfully request that the AkDOT obtain, in advance, these barge-berth permits so that the bidding Contractors can make a fair value judgement on the most "feasible and prudent alternative" for Windy Corner materials sourcing.	Thank you for your comment. 1. Please see Response D, above. 2. Please see Response D, above. 3. Please see Response D, above.
Hatton, Elizabeth 1 | I have submitted comments previously on this project and my opinion has not changed. I think the project is overkill: a loss of a big chunk of the Chugach State Park, a lot of money, a noisy disruption to the Rainbow Valley homeowners, environmental damage to Turnagain Arm, and marine life disruption. . . .all so traffic can go even faster in spite of the speed limit. This is a scenic drive. Leave it that way. Elizabeth Hatton	Thank you for your comment. Please see Responses A, E, F and I, above. Up to 39.6 acres is a large area, although less than 0.01 percent of the 495,000-acre park, and this is not undertaken lightly. The proposed safety and capacity improvements are not so traffic can go even faster in spite of the speed limit; they are intended to address safety and capacity demands, particularly in combination with the frequent wildlife attractions in this area during peak traffic seasons.

Athey, Pat Mr. Elliott, I support the proposed conversion of Chugach State Park property to remove federal protection to reconstruct the Seward Highway between Milepost 105 and Milepost 107 (Windy Corner) to improve highway safety. The improvements to highway safety and enhancements to Park facilities at Windy Corner are desperately needed and very well designed. I am very happy to see the inclusion of land at Indian Point (mp 104) and Rainbow (mp 108) included as these are two of the most dangerous corners on the highway. I was a daily commuter for more than 20 years and had too many "white knuckle" close calls at those two corners. Sadly, a young man known in our small community lost his life at Indian Point a few years ago when another driver missed the corner, headed northbound, which seems to be a common problem due to lack of sight distance in that direction. Cutting down the hill at mp 104 and increasing the sight distance so northbound drivers can see there is a sharp curve ahead is critical to preventing further deaths and injuries at this corner. The proposed replacement lands are more than adequate to replace the land that is converted. In fact, the terrestrial habitats that will be gained under federal protection offer much greater ecological function and value as recreational lands for the Park than the converted lands. The enhancements to recreational facilities and visitor experience offered by the new Windy Corner design together should be adequate compensation to the Park, in my opinion, but I guess this regulation must be followed. Thanks for the opportunity to comment. Patrick Athey	Thank you for your comment on, and support of, the proposed highway improvements project.
Evans, David **To whom it may concern:** I am writing to comment on the Environmental Assessment (EA) associated with the Windy Corner project that is planned between mileposts 105 and 107 on the Seward Highway. Below are quotes from the EA document (A10_20160705.D61278_LWCF EA_Main.pdf, posted on the AKDOT website), followed by my questions and comments: **CHAPTER 1-PURPOSE AND NEED: Pages 5,6** "Over a 45-year span, between 1977 and 2012, this highway segment (MP 105 to MP 107) has had the highest number of fatal crashes and second-highest rate of major injury crashes of any segment between Potter Station and Girdwood (Figure 2)."	Thank you for your comment.

And :

"DOT&PF established a highway safety corridor and restricted speeds to 55 miles per hour (mph). This measure has only partially addressed the safety issues in the corridor and is considered to be an interim measure"

Questions/Comments:

1 a) The safety corridor was created in 2006, and over its 31-mile stretch produced a drop of 36% in fatalities and major injury crashes; the drop in the Windy Corner section was even greater. Why is the EA presenting an analysis that includes pre-safety corridor crash data? Most of it is irrelevant, and using it biases the results in favor of doing something.

2 b) It's stated that the safety corridor is temporary, no argument is given as why it would be temporary. Why would the DOT remove something that works and is cheap? The cost of maintaining this corridor must pale into insignificance compared to the cost of this project.

3 c) Stating that the safety corridor has only partially addressed the issue is misleading. Data from 2006 through 2016 shows zero fatal crashes in the section since the safety designation, and the major injury crashes are now no worse than other 2 mile sections, which begs the question: why pick this (very expensive) section to fix? Another factor that's never discussed is the recent avalanche of improvements in vehicle safety; ultimately driverless cars will be with us and an array of new safety features will, in the meantime, make all roads safer. (The CDC finds there has been a 31% reduction in motor vehicle death rate per capita in past 13 years in the US).

CHAPTER 1-PURPOSE AND NEED: Page 7

"Using alternative material sources would eliminate the need to remove federal protection from the CSP lands identified for material sites; however, it would financially preclude DOT&PF from constructing the highway safety improvements project."

Questions/Comments:

4 This statement comes under PURPOSE AND NEED. It's got nothing to do with why the project is proposed; it looks like a plug for the CSP material site.

CHAPTER 1-PURPOSE AND NEED: General

5 The arguments laid out in any PURPOSE AND NEED section are crucial. I don't believe the EA makes the case for doing anything in this section of the highway.

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 9

"Alternatives to the proposed LWCF conversion include the following:

- 'No Action' Alternative
- Proposed Conversion
- Partial Conversion"

Questions/Comments:

6 With respect to the 'No Action' alternative, I don't believe that the public was ever involved in the question: "Should we do anything at all?" At every meeting I've gone to about this project, I've had a feeling that the project was a 'fait accompli'. That's not public involvement.

1-3. Please see Response G, above. The safety corridor designation and the additional enforcement that accompanied this designation has been successful in improving safety. The measures completed to date are short term measures that will diminish over time and that require more intensive law enforcement to be effective. The highway geometry, natural distractions, and increasing demand on this primary highway require more permanent engineering measures to be effective in the longer term.

4-6. Please see Response J, above. This EA addresses the conversion of LWCF lands. The purpose and need for the LWCF conversion is clearly enunciated in the first two paragraphs of Chapter 1. The remainder of the chapter provides additional background information on the history, condition and situation of the highway.

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 9

"This segment of the highway would continue to have an elevated rate of high-severity injury crashes."

Questions/Comments:

7 Since establishment of the safety corridor, the segment no longer has an elevated rate of high severity injury crashes. See comments on PURPOSE AND NEED

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 15

"The replacement area will have greater recreation utility than the converted sites. The converted upland areas have no formal trails and low levels of recreation use."

Questions/Comments:

8 What's being done in this proposed swap is that a piece of land is not only being removed from the park, it's being destroyed, with all the negative aspects of that destruction levied on any visitor to the area. (Views of this quarry from above will be especially bad.) The mitigation that should be made here is not just replacement of an area, but also compensation for the mess that's going to made in the area taken. And in my view, the higher appraised value of the replacement site won't come close.

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 19

"The recreational opportunities provided by these sites are few or limited, and their usefulness for outdoor recreation areas is low."

Questions/Comments:

9 Again, what's missing here is what is left behind after the quarrying. People enjoy the areas in question because they form part of a beautiful landscape. Put a quarry in the middle of it and the whole vista is gone, not to mention habitat connectivity. This idea is just totally missing from the arguments presented in the EA that equate the parcels. So much is put forward about improved recreational opportunity with the new parcels and yet this project seeks to pretty much destroy part of exactly why people want to go there.

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 23

"The development and construction of the replacement parcel would result in a net positive benefit to the recreational opportunities and resources offered by CSP, by providing safe access and facilities for travelers to stop and enjoy the scenery"

Questions/Comments:

10 I disagree; the negative visual impact of the quarries will dwarf any positives from this project. I imagine the Bird Creek parking lot was also sold with this sort of language. That eyesore, also orchestrated by the DOT, is an appalling example of how not to do a project like this.

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 23

"Public involvement on the conversion proposal has been incorporated in the public involvement on the Seward Highway safety improvements project."

Questions/Comments:

11 See comment on public involvement above. Also, response from DOWL's public outreach section has been poor, with very slow or non-existent responses to emails.

7. Despite the recent reduction in crash rates associated with the Safety Corridor designation, this section of highway is still considered to have an elevated rate of high-severity crashes. Crashes on rural highways require long periods of time to establish trends that are statistically significant. Also see Response G.
8. Please see Responses E, H, and K, above.
9. Please see Response B and K, above. The proposed project, including the MP109 material site, would not affect connectivity in any meaningful way. The upland habitat affected is surrounded by thousands of acres of similar habitat. The project design was revised following input from ADF&G specifically to avoid affecting the mineral lick.
10. Again, please refer to Response E and K. Although many consider the Bird Creek parking lot to be visual impact, it is a well-used and popular recreation amenity.
11. Please see Response L, above. It is DOT&PF's policy to respond appropriately to all stakeholder communication in as timely a manner as possible, while ensuring that responses are factually accurate and consistent with project studies and other responses.

CHAPTER 4-ENVIRONMENTAL IMPACTS- Page 49 "Although this conversion would result in adverse effects on the aesthetics in these areas, the effect is minor in the context of the overall park and along the Scenic Byway." *Questions/Comments:* 12 This kind of statement shows to me a lack of respect of what Turnagain Arm is and of the entities and groups of citizens that created the CSP in the first place. There's a reason it's ALL protected; it's to stop outfits like the DOT and DOWL making a mess of it, and setting a precedent of the slippery slope. Thank you for giving me the opportunity to comment. David Evans	12. State law directs DOT&PF to provide for safe and efficient transportation of people and goods. DOT&PF and CSP have worked cooperatively for decades to coordinate needed highway improvements. Use of public recreation lands and LWCF lands are given particular attention and use of these areas is carefully scrutinized. Reasonable and prudent alternatives are chosen when available.
Jefferson, Donna 1 > In the homestretch of the LWCA EA public comment period, I am struck by how many people know so little about the proposed quarries (now, two that will dwarf all the old ones). Even in Turnagain Arm communities there has been such focus on the law enforcement issues that all else seems to pale. This is how irreversible things happen in the speed of modern societies, while we work, run after the kids, take part in our communities, or worry about drinking water.... Can it be considered to give some extra time for public to comment? Maybe February 28? > I appreciate your time. > > Donna Jefferson	Thank you for your comment. DOT&PF has determined that the 30-day comment period is sufficient and appropriate for this document. There will be a forthcoming environmental document for the highway improvements project itself, allowing another opportunity for public review and comment.
Pollock, George (Chugach State Park Citizens' Advisory Board) **The Board's preferred alternative is "Partial Conversion"** 1 It is the opinion of the Board that the "Partial Conversion" alternative is the most prudent alternative and the only legal option available (apart from the "no action alternative") under Section 4(f) of the Department of Transportation Act of 1966. Section 4(f) states that FHWA cannot approve the use of land from publicly owned parks unless there are no existing feasible and prudent alternatives to the use of the land. The "Partial Conversion" alternative represents a feasible and prudent alternative which still allows for safety improvements at Windy Corner. 2 The "Partial Conversion" alternative was erroneously excluded from consideration in the EA based on incomplete and flawed financial comparisons. We strongly recommend that this alternative be fully assessed under NEPA and that the material cost comparisons be revised based on current pricing and cost proposals specific to the Windy Corner project. The data provided in Table 1 (page 7) is confusing, misleading, and appears to be based on outdated values. Most importantly, we would argue that restricting the decision criteria strictly to financial comparisons sets a poor precedent for potential future projects. We are aware that this is not the first quarry that DOT&PF has created within CSP and likely not the last to be proposed. Material costs will never get cheaper outside the park and we are concerned that the southern boundary of CSP and the view from our National Scenic Byway will eventually become a scarred wall of loose stone at the expense of a straighter road.	Thank you for your comment. 1. DOT&PF has considered the Partial Conversion alternative; at present, it has been determined to not be prudent. Please see Response D for further information on material site evaluation. 2. Please see Responses D and E, above.

DOT&PF's "Proposed Action" Alternative

The Board has several concerns regarding the Proposed Action, should it be selected by the National Park Service as the preferred alternative. Our concerns are primarily with development of the proposed material sites and the valuation of the replacement property. Please note that we do not object to the highway safety improvements and we appreciate the proposed turnout and parking area to enhance wildlife viewing opportunities in a safe setting.

3 We are concerned about scenic values along the highway, which was included in the State Scenic Byway system in 1993 and became part of the National Scenic Byway program in 2000. The existing Bird Creek material site is a highly visible scar that significantly impacts scenic value. Previous design drawings suggested that "Material Site 6" (backup material site; milepost 109) would be developed in such a way to mitigate the effects on the viewshed and aesthetics through topographic screening. However, the only mention of this in the EA is on page 49. We encourage DOT&PF to use topographic screening to reduce the aesthetic impact of both material sites, should they be developed. Even with screening in front of the material site, the back wall of the site would remain visible at some distance from the site. For this reason, it is inaccurate to describe the impacts of the material sites on aesthetics as "minor" (also on page 49), particularly in comparison to the conversion of the mudflats and realignment of the railroad. We encourage DOT&PF to revise the document and accurately describe the potential impacts of these quarries on aesthetics as "major" in the context of the overall park and along the Scenic Byway.

4 Other public documents and the project website have described material site #6 as a "backup site" that is "not anticipated to be needed". The Board strongly encourages the DOT&PF to remove material site #6 from the proposal given that it is "not anticipated to be needed". If a single quarry is not large enough, the remaining material should come from offsite. It is clear that the DOT&PF is attempting to change the status of this very large "back up" quarry so that it can be used for material during the next Seward Highway project. This is a deceptive tactic and highlights a major short-coming of the EA: the document fails to address cumulative impacts from future quarries in CSP and highway development projects along Turnagain Arm. As mentioned above, the Board is particularly concerned with the cumulative impacts on aesthetics from multiple quarries that would line the southern boundary of CSP.

5 Under Section 6(f)(3) of the LWCF Act protected parkland that is converted to a use other than outdoor recreation must be replaced with property that is of reasonably equivalent usefulness and location and is at least equal in fair market value. The Board objects to the appraised value of the 35.4 acres of upland proposed to be converted to a quarry. The appraisal was based on potential development and did not consider the aesthetic value and ecological importance of unaltered parkland that is intended to be protected in perpetuity. We encourage DOT&PF to develop a more reasonable land exchange proposal that considers the value of the parkland as a public commodity and valuation of its ecological importance.

6 The previous Section 4(f) analysis for this project implied that only 11 acres of uplands would be required for the Windy Corner project and that those would be replaced by 47 acres of upland property transferred to Alaska State Parks. The Board does not believe that 17 acres is a fair replacement for 39 acres of land lost to the Windy Corner project, as is currently proposed. We encourage DOT&PF to propose a replacement parcel(s) that is equivalent or greater in size, value, and usefulness.

3. Again, please see Response E, above. Aesthetics are a primary concern with the proposed quarry, which is why the proposed design seeks to shield the quarry behind a vegetated topographic screen. Furthermore, this screened site would be visible for no more than 0.6 miles of the National Scenic Byway's 127-mile length, and only in the southbound direction. Due to its topography and geometry, the MP104 material site, if needed, could not be screened the same way.
4. DOT&PF does not want, nor will it retain future rights to, the MP104 material site 'for the next Seward Highway project'. There is nothing misleading nor disingenuous in this request; should DOT&PF ultimately not need material from MP104 for this project, it remains in DNR-Division of Parks & Outdoor Recreation administration, and there is no future right of use for DOT&PF.
5. Please see Response H and K, above.
6. Again, please see Response H, above. The regulations clearly stipulate how land exchanges under LWCF 6(f) are to be evaluated. This is Federal law, with which DOT&PF must comply.

7 We appreciate the inclusion of turnouts, parking areas, wildlife viewing platforms and other facilities that would become park assets. However, we note that these are not completely intended as park assets, but were also designed to reduce the public hazard of motorists slowing and pulling onto the highway shoulders to view wildlife. In addition, the Board is concerned that more facilities which require cleaning, maintenance, and patrol would further stretch CSP's very thin operating budget. We ask that DOT&PF work with CSP to find a solution to this potential problem. 8. In summary, the Board recommends a full analysis of the "partial conversion" alternative including updates to the cost comparison. It is the position of the Board that the proposed action is a violation of Section 4(f) of the Department of Transportation Act. Development of more large quarries along the Seward Highway within CSP diminishes the scenic value of the National Scenic Byway and is in opposition to the purposes of CSP as identified in State statute. The higher cost of an alternative does not necessarily mean the alternative is not feasible and prudent. Furthermore, the alternatives should include the option for mixed sources with the goal of minimizing the amount of material required from the park. Should the National Park Service, in opposition to the recommendations above, select the proposed action as their preferred alternative, the Board is strongly against inclusion of the "backup" material site (material site #6). Finally, the replacement parcels offered under the proposed action are not an equivalent exchange and the valuation of the material sites fails to consider their ecological value as intact and protected parkland. Thank you for the opportunity to comment on the Windy Corner project and the LWCF Act Section 6(f) EA. We look forward to working with DOT&PF and FHWA to find a way to improve safety along the Seward Highway without sacrificing large portions of our parkland. As a reminder, our Board meetings are open to the public and held every second Monday of the month. We would welcome a presentation and open dialogue with DOT&PF or their representatives. **Please contact CSP superintendent Tom Harrison** (tom.harrison@alaska.gov; 907-345-5014) to be added to our agenda. Sincerely, George Pollock Chair, Chugach State Park Citizen Advisory Board	7. The proposed visitor facilities do provide additional CSP amenities and reduce safety hazards. DOT&PF has been coordinating with DNR-Division of Parks & Outdoor Recreation and Chugach State Park personnel to ensure the facilities constructed fit with DNR's desired infrastructure and maintenance budget constraints. 8. See previous responses.
Greene, Grace 1 I wanted to pass along my thanks and recognition for the efforts your teams have put into the Windy Corner Project. As a Girdwood Resident, daily commuter, and leader in the Transportation Industry, this project has significant importance for the safety of those that transit along the highway – both for recreation, commuting and for transportation. Please let me know if I can be of any help throughout the process. Regards, Grace	Thank you for your comment on, and support of, the proposed highway improvements project.

Salmon, AlexAnna (Igiugig Tribal Village Council) Dear Mr. Elliott: 1 Cama'i! Our tribe is providing a public comment regarding the Windy Corner Environmental Assessment. The DOT&PF has proposed to mine the rock (upwards of 1.8 million CY) from Chugach State Park (CSP). The Alaska DOT&PF has not adequately vetted alternatives to the material sites in Chugach State Park. Our tribe is 90% owner of Iliaska Environmental, LLC a DBE certified small business enterprise, and owner of Diamond Point, a fully permitted rock quarry in Cook Inlet. Our region's economic livelihood depends in part, on *having the fair opportunity* to bid on projects requiring rock. An evaluation of alternative material sites that would barge materials directly to the project is not presented in the EA. Barging the material would alleviate much of the public opposition to damaging the CSP, and would eliminate much of the traffic congestion, highway damage, and safety issues associated with trucking 50,000 or more 50-ton truck loads of rock on the Seward Highway from the CSP material sites. We propose that there is a solution to these problems if the DOT&PF would fairly analyze alternatives, and are reaching out to you in hopes that you are in a position to influence them to take a closer look. A FINANCIAL "CONFLICT OF INTEREST" ISSUE: 2 The Windy Corner Environmental Assessment does not include any analysis for barging from off-park material sites to Windy Corner. Table 1 (page 7) provides estimated costs of placed rock from off-park material sites and for placed rock from material sites within CSP. The off-park costs are presented as being significantly higher than the CSP material site costs, but the comparison fails to consider the trucking costs of the rock from the CSP material sites. The other unfair part of this analysis is that the State plans to acquire the CSP quarrying property for the appraised surface value ($53,000.00) of the property and not pay any royalty to CSP for the valuable subsurface rock. They will then make the quarry rock available to the construction contractor at a price of around $21,000,000.00. This would do two things: 1) It creates an unfair advantage for the state by precluding contractors from using off-site quarries because the state is essentially undercutting all other quarries with their unreasonably low cost of quarry rock and; 2) it creates a mechanism for the state to make a large profit on the rock that they are, in all actuality, not having to pay for by purchasing the property from another government entity for the surface value of the property. LACK OF ADEQUATE REVIEW OF ALTERNATE ROCK SOURCES 3 Barging in of rock has been omitted from the EA and we expect that no efforts are being expended in advance to obtain permits for this method of rock delivery. There are significant lead times required for those permits; the lack of which will preclude any Contractors from considering Cook Inlet barged rock as an alternative to a CSP quarry at bid time. Diamond Point, LLC received a request from DOWL Engineering in September 2016 to provide information on Diamond Point rock and the cost to transport the rock associated with the Windy Corner Project. The request was quickly withdrawn within 24 hours, leaving us to wonder why they weren't following up on using us as an alternative rock source to the CSP material sites. This is additional evidence to us that the State is not interested in pursuing off-site alternative material sources that could be barged directly to the site.	Thank you for your comment. 1. Please see Response D, above. The revised EA includes cost comparisons from an independent, third-party contractor, and includes a range of material site sources and modes of material transport. 2. DOT&PF is not proposing to sell material to construction contractors; DOT&PF will not make any profit on the materials. DOT&PF, through this process, is trying to make the proposed material sites available for contractor use; they will not specify that a contractor must use the material from the proposed material sites. In addition, use of these sites for material extraction will require working with the limitations, minimization and mitigation measures stipulated for the project. The costs shown in Tables 1 and 2 of the Final EA indicate the total cost – material purchase, production, and transport – to get material to the construction site. 3. Again, please see Response D, above. The third-party analysis did evaluate barging material to the site. DOT&PF obtains required permits for a project but does not obtain permits for every potential material source that a contractor could choose. Permits that emerge based on a Contractor's decision or choice to use an alternative material source are the responsibility of the Contractor.

AESTHETIC AND SAFETY ISSUES:

The Seward Highway, an Alaska scenic byway, USDA National Forest Scenic Byway, and All-American Road provides access for wildlife viewing, subsistence activities, recreation access, and interstate commerce. Peak summer traffic on the highway is more than 22,000 vehicles. There have been many negative public comments on the use of CSP property as quarry sites for rock associated with the Windy Corner project. It is being compared to the aesthetic scar that was created by the Bird Creek quarrying project further north from Windy Corner on the Seward Highway. Review of comments from various documents on the Windy Corner website (*http://projects.dowl.com/projects/windycorner/index.html*) help to illustrate the concern for the aesthetic damage the quarrying will cause if completed on CSP property, as proposed.

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In addition to the unpleasant aesthetics that a CSP quarry will create, there are road damage, traffic congestion, and traffic safety issues that can be alleviated by supplying material for this road reconstruction with a barge. The 22,000 vehicles that normally travel this route during summer months will be competing for the roadway with 50,000 or more truckloads of rock being hauled to the reconstruction site. For a project that is supposed to improve the safety of the Seward Highway, this plan increases unsafe traffic patterns during the height of the tourist season. Landing a barge near the site with large batches of the required rock for the project will minimize the risks and damages associated with trucking material to the site in 50-ton batches.

PROPOSED ALTERNATIVE: DIAMOND POINT, A FEASIBLE MATERIAL SITE

In conclusion, we agree that the overarching project goal to reconstruct the Windy Corner portion of the Seward Highway is long overdue. However, as stated above, we are concerned that potential material sources for the project have not been adequately considered and analyzed; the State of Alaska is creating for themselves an unfair advantage to profit off of property acquired from another government entity, and there are safety and environmental issues associated with the current plan to use the CSP as a rock material source. If nothing else, will AK DOT obtain, "in-advance" the barging permits so that the eventual contractor is free to make a prudent and feasible decision on all available material alternatives at the time of bidding? Quyana for your time and consideration.

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4. Please see Response E, above. There would be fewer aesthetic effects in using material from a source not adjacent to the highway. There would also be fewer safety concerns if the material were barged to the site. Although other material sites and marine barging may have less aesthetic effects in the context of Chugach State Park and the Seward Highway, these were not deemed prudent. DOT&PF would require contractors to develop traffic plans to allow for safe transport of materials to the project site.
5. DOT&PF, Alaska Department of Natural Resources (DNR), and the National Park Service (NPS) acknowledge your opinion. The contractor ultimately determines the source of the material based on their determination of project costs, permits and the quality of the material. On projects where material sources are not readily available, DOT&PF will frequently choose to permit a material source and make it available to the contractor.

Sincerely, AlexAnna Salmon AlexAnna Salmon, President, Igiugig Village Council	
Livingston, Diana Safety on the Seward Highway has been an over-riding concern of Girdwood 2020, Girdwood residents, and of ours personally for many years. We are on the highway frequently during the week, all year, and all hours of the day and night. We have written many letters requesting highway rehab/redesign to overcome the challenges to safety and many users with multiple purposes. 1 As the numbers of visitors to Alaska increase, and as commercial/personal use by residents and businesses grows, the need to make this popular stopping place grows exponentially. We are fully in support of this project, especially as use of nearby materials will make it more fiscally sound. The safety of our beloved wild creatures will be enhanced by the design proposed and we are very glad for that. Sincerely, Diana Stone Livingston Philip K. Livingston Girdwood 2020 Board of Directors	Thank you for your comment on, and support of, the proposed highway improvements project.
Hansen, Pat From the EA document (A10_20160705.D61278_LWCF EA_Main.pdf, posted on the AKDOT website): **CHAPTER 1-PURPOSE AND NEED: Pages 5,6** "Over a 45-year span, between 1977 and 2012, this highway segment (MP 105 to MP 107) has had the highest number of fatal crashes and second-highest rate of major injury crashes of any segment between Potter Station and Girdwood (Figure 2)." *This analysis uses the wrong data, Windy Corner does NOT have the highest number of fatal crashes. See attached.* **CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 9** *The public was never presented with the 'No Action' alternative. At every meeting I've gone to about this project, the project was simply presented, public input was requested as to how it might proceed but whether it was going to proceed was never the question.* **CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Page 9** "This segment of the highway would continue to have an elevated rate of high-severity injury crashes." *Windy Corner does NOT have an elevated high-severity injury rate.*	Thank you for your comment. 1. Please see Response G, above. 2. Please see Response J, above. 3. Again, please see Response G, above. 4. Please see Responses B, E and K, above. 5. Again, please see Responses E and K, above.

CHAPTER 2-DESCRIPTION OF ALTERNATIVES: Pages 15,19 & 23 "The replacement area will have greater recreation utility than the converted sites. The converted upland areas have no formal trails and low levels of recreation use." "The recreational opportunities provided by these sites are few or limited, and their usefulness for outdoor recreation areas is low." "The development and construction of the replacement parcel would result in a net positive benefit to the recreational opportunities and resources offered by CSP, by providing safe access and facilities for travelers to stop and enjoy the scenery" *The area is so beautiful and people (and wildlife) enjoy it as a whole landscape. You cannot completely destroy one parcel with a quarry and add another parcel and call it even (or in your case a positive). Landscapes, both as scenery and ecosystems, do not work like that.* **CHAPTER 4-ENVIRONMENTAL IMPACTS- Page 49** "Although this conversion would result in adverse effects on the aesthetics in these areas, the effect is minor in the context of the overall park and along the Scenic Byway." *Who are you to make that statement? I could not disagree more strongly. I don't believe that is the public's opinion either.* Thank you for giving me the opportunity to comment. Pat Hansen	
Jefferson, Donna Dear Mr. Schmid, I am a resident of Turnagain Arm communities since 1990, and drive the Seward Highway, one of America's best National Scenic Byways, everyday, in every season. I enjoy driving immensely, and appreciate well thought out highway improvements that increase efficiency and safety, while intruding the least into the natural intrinsic features that we celebrate and utilize along these highways. I am an avid hiker and biker, and a tour guide of sorts, showing friends and visitors, special places in Chugach State Park and Chugach National Forest,not far off the beaten path around Turnagain Arm. The current ADOT Windy Corner EA document and process is/has been confusing and misleading. I have serious concerns about it's validity and potential impacts on Chugach State Park resources and values, surrounding communities, and the actual public process in shaping large, expensive infrastructure projects. The following are my concerns with ADOT's Windy Corner Preferred Alternative: 1.The size and scale of the proposed material site 1 at mi 109 (Rainbow) is prohibitively large(3X the size of the Bird Creek quarry), with a 270' back wall, 400' from one of the Municipality of Anchorage's most traveled and historical recreational trails, the Turnagain Arm/Johnson Trail, which runs from Potter Marsh to Indian(except Windy Corner to Falls Creek segment, washed out by rock fall), all within Chugach State Park. Although the EA says the site will have MINOR effects to the surrounding area, consider the small, but long historically (since early days of mining, road/trail/railroad construction) occupied valley of Rainbow. Having a permanent, working ADOT quarry, less than a 1000' away, will negatively effect life in Rainbow for certain, with noise, dust, and decreased property values. Also, unaddressed in the EA: How will such a deep hole near a busy recreational area be controlled? and by whom? Another MINOR effect, that these 22 acres at mi 109, include a hidden myriad of tiny, social trails through a park-like bench land, appealing to hiker's like me, and to the annual moose calves born near a small bog, surrounded by ancient trees. Material site 1, as proposed, will negatively effect the intrinsic recreational and ecological value of this park land. Definitely not minor effects. 2. Material site 6 at mi 104.5 (Indian) was not addressed properly in the development process or in this EA. Unclear in all earlier discussions, being called an 18.4 acre backup quarry site which probably wouldn't be needed and drawn on paper. There was no clarity on how the site would be developed, how it might appear along the highway, and how it would interface with Chugach State Park's, southern end of the Turnagain Arm Trail and also, it's long existing, small parking pullout at mi 104.5. The current EA simply states it is a low use trail. Another MINOR effected piece of parkland? This trail is a well trodden trail to Falls Creek, and also intersects with the trail that ascends up to Indian House Mountain, a local trail rivaling Bird Ridge, for its scenery, wildflowers, and sheep viewing. When the current EA appeared in January, BOTH material sites were surprisingly lumped together to be converted to the ADOT, site 6 quietly going into the conversion. This appears almost illegal to me, particularly given the EA inadequate address of material site 6 (Indian). I believe material site 6 at Indian should excluded in this conversion for these reasons.	Thank you for your comment. 1. Please see Responses B, E, and K, above. With regards to impacts to Rainbow, please see Response F, above. 2. The proposed MP104 material site is identified in the EA, and its attributes and potential effects discussed.

3. Cost comparisons for material sources in this EA were vague and confusing to me and many others. A small table of price per ton comparisons was on one page of the document ,but that was all, with the nearby material sites being the clear, low cost winner. When asked for more detail, we were told, by ADOT, that the project could not afford anything but the nearby material sources, and possibly, a mixed source of materials from other places. There are other feasible alternatives and more have been mentioned since early scoping but nothing included in the recent EA. From the recent EA, it appears that CSP quarry prospects are the best choice, probably because there appears to be no royalty for the "goldmine" of rock under a mere $53,000 parcel, complete with surface and mining rights. SHAMEFUL LACK OF FAIRNESS. This exchange of parkland would be equitable with the millions of dollars in mined material proceeds going to the Chugach State Park, instead of a small sum of cash and 17 acres of DOT right away. Sourcing alternative rock looks to be arranged to exclude competition at this point. *Another reason for the EA to provide more thorough and updated analysis for material. 4. The sum total of existing Bird Creek quarry and the proposed large quarries along this corridor will negatively effect the dynamic view shed of the surrounding communities in Turnagain Arm, Rainbow, Indian, Hope, Anchorage, and Girdwood. The view sheds from Hope town center, Hope's Porcupine campground, Gull Rock and Point Hope trails, the numerous scenic pullouts of the Hope highway will all have a constant reminder. And last, but not the least, some of the most prominent overlooks along the Turnagain Arm trail near Rainbow will look straight down into the proposed mi 109 Rainbow quarry. Just a MINOR effect. 5. ADOT Seward Highway Safety Corridor Accident data, which in part, was justification for the Windy Corner project, was also confusing to many. Statistics included MVA as far back as 1977, which skewed interpreting more recent data and the effects of the many safety improvements over the past 40 years. Looking closely at the data, one might conclude that Windy Corner is far from the most dangerous section of this corridor. Other sections, especially where speed limits are higher, have seen far more fatal crashes in the past decade. 6. ^s time goes on, I am wonder that perhaps, there may not be justification for highway improvement to be implemented at Windy Corner at this me. Though,not against the Windy Corner project per se, I am reticent about spending state AND federal funds in these most difficult fiscal mes without thorough and creative analysis. At this stage of the process I favor a full analysis of the Partial Conversion alternative, including pdated material sources with emphasis on utilizing mixed sources and more equitable exchange for any material site within the Chugach State Park. I believe material site 6 at Indian should be excluded from consideration in this current process. The EA should also reexamine the effects of this project on the parks value and resources, the surrounding communities, and show provisions to insure existing recreational trail access and safety around the AKDOT proposed parkland material sites. I appreciate this opportunity to be a part of the process and thank you for your consideration. Sincerely, Donna Jefferson	3. Please see Responses D and H, above. 4. Please see Response E, above. Some of the proposed project elements may be visible from very specific points along Hope Highway, from Hope, and from Gull Rock Trail. The cut at Windy Corner itself would likely be visible, as would development of the MP104 material site. The primary material site, at MP109, would be partially screened by the intact topographic and vegetated buffer. In addition, all of these features would be between 3.7 and 5.5 miles from the aforementioned locations along Hope Highway and Hope; they would account for a very small overall portion of the viewscape from the opposite side of Turnagain Arm. Except possibly at very high vantage points, the proposed MP109 material site will not be visible at ground level from Rainbow, given the topography and vegetation. There may be specific points along Turnagain Arm Trail where the proposed MP109 material site may be visible; however, topography and especially, vegetation would prevent the material site from being largely visible from the trail. 5. Please see Response G, above. 6. Please see response A, above. DOT&PF, DNR and NPS acknowledge your opinion.
Miner, Emily Dear Mr. Elliott, 1 This letter concerns the proposed Windy Corner Safety Improvement Project ("Project"). According to the draft environmental assessment ("draft EA") published July 2016, the stated purpose of the Project is to reconstruct the Seward Highway between Mileposts 105 and 107 to improve highway safety. The draft EA has very little discussion of the actual safety problems, and beyond a short graph on page 7 there are no actual number of accidents generating the need for this Project. Furthermore, the draft EA fails to mention the effect on accidents the restricted speed corridor has had, nor does it discuss the effect the implementation the flashing speed signs have had. This missing information is particularly concerning because it does not provide the public with all the available information and thus the public is unable to make an informed decision regarding the Project. I would ask that more thorough information regarding the effect of the upgraded safety measures has had on accident rates on the highway be included in the preparation of an Environmental Impact Statement ("EIS").	Thank you for your comment. 1. Please see Response G, above. This EA is focused on the proposed conversion of up to 39.56 acres of LWCF recreation lands to transportation use.

However, assuming that despite the updated safety features of flashing speed limit signs and reduced speeds there is still a need for the Project, the draft EA does not provide enough information and consideration of the alternative sources of fill material needed for the project in order to be considered a valid draft EA. The draft EA preferred plan of action is to convert
2 dedicated park land from public recreation, to transportation use. According to the draft EA, DOT plans to remove more than 30 acres of prime parkland, directly adjacent to the highway, in order to create two quarries to generate the needed fill material to straighten the highway. However, the lack of consideration of alternatives to the preferred action plan should render this draft EA invalid because there is simply not enough information for the public to make an informed decision.

This is extraordinarily concerning for several reasons. First, due to the world class scenery, the highway has been designated a National Forest Scenic Byways by the United States
3 Forest Service, a State Scenic Byway, and an All-American Road as byway of the National Scenic Byway program by the United States Secretary of Transportation. For DOT to propose placing two (2) gravel quarries directly adjacent to the highway would be a travesty for the scenery and render the above designations utterly meaningless. Second, the stated purposes of the Chugach State Park includes protecting areas of unique and exceptional scenic value.[1] The
3 draft EA fails to discuss how two (2) gravel quarries can be reconciled with this purpose of the park, mostly likely because it simply cannot be reconciled. Tourism is Alaska's second largest private sector employer[2] - why is DOT actively attempting to permanently desecrate the unique and world class scenery that tourists specifically come to Alaska for by creating two quarries on the most traveled road in the state?

Third, though the draft EA states that under Section 6(f)(3) of the Land and Water Conservation Fund ("LWCF"), protected parkland that is converted to a use other than outdoor recreation be replaced with property that is of at least equal fair market value and equivalent
4 recreation utility as the property converted. While I understand that the view value is not part of the typical equation in a conversion such as that proposed by the Project, the uniqueness of this specific stretch of parkland is in large part what makes it so valuable. I would hope that the EIS would have a more thorough cost analysis of the view that will forever be decimated by the quarries.

2. Please see Responses D and K, above.
3. Please see Response E, above. In addition, Chugach State Park's guiding purposes also include: 'Provide recreational opportunities for the people by providing areas for specified uses and constructing the necessary facilities in those areas', and; 'Provide areas for the public display of local wildlife'.
4. Please see Response H, above. The regulations clearly stipulate how land exchanges under LWCF 6(f) are to be evaluated. This is Federal law, with which DOT&PF must comply.

5 Finally, the almost total lack of information regarding the alternatives renders the partial conversion completely moot. Under the National Environmental Policy Act ("NEPA") the degree of analysis devoted to each alternative is to be substantially similar to the proposed action.[3] Additionally, the alternative analysis should explain why and how alternatives were eliminated from consideration.[4] Most relevantly, the alternative analysis should: (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated; (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits; (c) Include reasonable alternatives not within the jurisdiction of the lead agency; (d) Include the alternative of no action; (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference; (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.[5] The above information is lacking in the draft EA alternative analysis section and so I would hope that a more thorough consideration and evaluation of the above criteria is included in the preparation of an EIS, including a breakdown of the costs associated with bringing in the needed fill material via barge or train from an already established quarry among other considerations. I look forward to DOT's consideration of my concerns and welcome the chance to work together to find a solution that addresses everyone's concerns. Very truly yours, Emily Miner	5. The alternatives discussed in this EA include the Proposed Action, Partial Conversion, and a No Action alternative. These are clearly identified in Chapter 2, and the effects are identified in Chapter 4. An EA was determined to be the appropriate level of analysis for the proposed project by DOT&PF, DNR and NPS.
Sherwonit, Bill Dear Mr. Elliot: I'm writing to express my concerns and disappointment in the draft Environmental Assessment (EA) that the Alaska Department of Transportation and Public Facilities (DOT) has put together for its proposed actions in the Windy Corner area of the Seward Highway (between Mileposts 105 and 107) in Southcentral Alaska. I'm doing this as a long-time resident of Anchorage and both a frequent visitor to Chugach State Park for the past three decades and an advocate for the park's wild values, including (but not restricted to) its wildlife and wilderness landscape. I'm writing as both an individual and member of the group Friends of Chugach State Park; the views here are my own, but many are shared with other Friends of CSP. I'll outline several specific concerns below, but here will voice my request for an EA that will adequately address the issues and concerns raised by me and other park advocates, which the current EA does not.	Thank you for your comment.

1	First and foremost, I question the need for this expensive—and, from the perspective of park values, destructive—project, especially at a time when the state of Alaska is reeling from multi-billion-dollar deficits. Though there may have once been a pressing need, the DOT's EA analysis relies heavily on outdated information, for instance highway crashes that have resulted in deaths and major industries. As others have pointed out, since the Seward Highway's "safety corridor" was enacted in 2006, fatalities have dropped substantially between Potter and Girdwood, which includes the proposed Windy Corner project area. The numbers I've seen indicate a 36-percent decrease over the 31-mile corridor; more telling, however, is that deaths and injuries have declined even more dramatically in the proposed project area. According to one analysis I've seen, between 2006 and 2016 there have been no—I emphasize, zero—fatal crashes in the Windy Corner area (MP 105-107) and major-injury crashes have been comparable to other sections of the highway. In short, there seems to be no good reason to make the proposed and exceedingly expensive changes to this section of the Seward Highway, when the safety corridor and speed-limit restrictions seem to be working, especially given the harm it will do to the park and its scenic values. I would argue the EA needs to consider the most recent decade in its analysis, rather than a 45-year period that is misleading. I and many others opposed to this project would argue that the DOT fails to show a "purpose and need" for this project, especially given the economic cost and the damage it will do to the park. I should add here that I initially supported the idea of a cooperative highway reconstruction project between the DOT and the Alaska Division of State Parks, primarily because the proposed project would improve the public's ability to safely view the area's wild Dall sheep population, which inhabits the Windy Corner area for much of the year and is a popular viewing attraction. I still believe that improved sheep viewing facilities would be helpful, and increase safety, along this stretch of highway. Unfortunately, I and many park advocates believe, the DOT has used these circumstances for its own agenda and plan, which in its current form might very well harm the sheep while improving viewing opportunities. I must	1. Please see Responses A and G, above. 2. Please see Response B, above. 3. Please see Response F, above. DOT&PF is not approaching this project in a cavalier manner, consideration of the value of CSP LWCF lands have been a priority under LWCF. DOT&PF has coordinated the proposed project design with resource agency personnel, and has included a range of minimization and mitigation measures to reduce or prevent impacts to sheep, including relocating the proposed improvements further into Turnagain Arm. With regards to loss of 19.6 acres of habitat, or up to 35.4 acres including the proposed MP104 material site, there are tens of thousands of acres of similar habitat available in the surrounding terrain.
2	emphasize, these are two very different things. *It would be wrong to risk the well-being of the sheep to improve opportunities for people to watch them.* From a wildlife-conservation perspective, the proposed quarries will do substantial damage to Dall sheep habitat and that cannot be "mitigated" by increased and improved viewing areas. As one knowledgeable wildlife biologist (a former state wildlife manager for the Anchorage area) has commented, DOT essentially wants to trade wild sheep habitat for sheep-viewing (people) habitat. *While people may gain something here, the sheep lose.* For that reason alone, this project, as currently configured, is wrong-headed and deeply objectionable. I cannot believe that the Land & Water Conservation Fund (LWCF) would allow such an egregious action as the loss of this sheep habitat would entail.	
3	One further point on the subject of Chugach State Park's Dall sheep: another member of Friends of Chugach State Park commenting on this EA has noted that it contains no information about the adverse effects on the nearby Rainbow community from drilling, blasting, and other industrial activities connected to this project. Similarly, the EA does not adequately explain how such industrial activities can be conducted without harming the sheep that inhabit the area. It seems certain *the sheep will suffer from both the excavation and reconstruction work and the loss of habitat, a double-whammy*. As one who cares deeply about wildlife, I cannot accept the DOT's cavalier attitude toward wildlife in a project that involves lots of taking from the park, with little giving back.	

4	Second, I and others question the DOT's analysis of the value of material and related compensation connected to its proposed removal of material from the park. I must also emphasize here that the proposed quarry sites will result in huge scars to the park's landscape (as well as sheep habitat, as noted above)—and this will occur within a federally designated National Scenic Byway corridor. One reason many of us oppose the project is because we are still aghast at the incredible eyesore that the DOT created near Bird Creek, during highway construction in that area. Here the park's scenic values were harmed far beyond the public's expectations. If that's the way the DOT treats state parkland, we don't want it to remove *any* material from Chugach State Park for the Windy Corner project, if and when it ever happens. The DOT argues that "using alternative material sources" outside the park "would financially preclude" the state from completing the project. Yet a thorough analysis of the potential alternatives has not been completed and it's essential that one be done before the project is allowed to proceed. The DOT has so far not been responsive to public requests for a more complete economic analysis and it needs to be.	4. Please see Response D, above. 5. Please see Response H, above. 6. Please see Responses A and L, above.
5	Third, the DOT appraisal of the value of parkland that would be "removed"—that is, destroyed—is grossly underestimated and improperly based on a "sales comparison approach" that isn't relevant to this circumstance. How can a value of $53,000 be considered adequate for the conversion of parkland to a quarry site? While the DOT may consider the parkland to have little value, those of us who want to protect the integrity of the park would argue the value is far beyond that, even if only the "surface value" is considered. Again, parkland would be forever destroyed and it has great value that cannot be measured simply by an appraisal that considers the land "vacant and available for development." Beyond that, as others have emphasized, the valuation of $53,000 does not account for the value of the rock and other material that would be removed, for the reconstruction of the highway (and perhaps other future projects). As one person knowledgeable in such matters has commented, the customary royalty charge for rock in place is $1.50 per ton. Given the tonnage of rock to be removed for the highway reconstruction, its value would run in the neighborhood of $4 to $5 million. So if Alaska State Parks were to be properly and ethically compensated for the removal of its land, the cost would be much higher than DOT's analysis suggests. Given the disparity, one might even consider this to be an officially sanctioned theft of sorts. If a value is to be put on the material to be removed, it must be true market value. Almost certainly, such a recalculation would likely make alternative sites outside the park more competitive.	
6	There are additional related issues that I expect other critics of this proposed project will address. Here I will end with some general comments: almost from the start, it has seemed that DOT has been determined to see its vision of this project come to pass, the public's interest (and wildlife) be damned. The state and its contractors who've worked on this analysis have ignored repeated requests for public meetings in Anchorage, at which opponents to this project could be better informed and given a reasonable opportunity to voice their disapproval or concerns. I would argue that many park users and advocates have no real idea of the scope and nature of the damage to Chugach State Park that the DOT is proposing and planning. This reason alone is enough cause to demand a pause, if not a halt, in the DOT's planning efforts. Conducting a new, more reasonable and realistic EA that properly and fairly considers the many issues only partly addressed—or even ignored—so far would be a good first step. Or, as some have suggested, maybe a more thorough Environmental Impact Statement (EIS) is more appropriate here, given the scope of the DOT's vision for Seward Highway "improvements."	

7. Finally, I would hope that the Land & Water Conservation Fund will reject the draft EA as not only insufficient and incomplete, but in places misleading. The proposed highway project would do irreparable harm to both Chugach State Park and the Seward Highway National Scenic Byway, and for no good reason except, arguably, sheep viewing; yet as argued above, the resident Dall sheep will suffer some degree of harm because of lost habitat and the industrial-scale reconstruction (and destruction) work the DOT wishes to conduct. Thanks for considering my comments and perspectives, Bill Sherwonit	7. For purposes of assessing effects of the proposed conversion, DOT&PF, DNR and NPS have determined that an EA is the appropriate level of environmental documentation.
Steiner, Rick I have reviewed the Environmental Assessment (EA) for your proposed Windy Corner project, and frankly, it is one of the worst I have ever reviewed (and I have reviewed countless EAs and EISs). Based upon this EA, ADOT has absolutely no basis to approve this project. 1. First and foremost, ADOT failed to demonstrate a need for the project. This part of the Seward highway has actually become safer in recent years, due to reasonable safety precautions. 2. The project is a shameful waste of public funds. It is simply outrageous that the project would seek funds from the LWCF, as this would be a clear violation of the letter and intent of LWCF. 3. The project diminishes the scenic values of Chugach State Park and the (still) scenic Seward Highway (a National Scenic Highway). 4. The environmental impacts of the project cannot be mitigated. There will be substantial loss and disruption to sheep habitat, as well as critically endangered Cook Inlet beluga whales that use the shoreline of the area. The EA doesn't sufficiently discuss these issues. 5. The EA doesn't sufficiently address impacts to the community of Rainbow. 6. It is my understanding that ADOT has remained unresponsive to holding public hearings in Anchorage, where the majority of road users reside. This alone evidences DOT's lack of confidence in the public support for the project. In summary, ADOT should not approve this project based on this EA. The proposed project fails to meet the economic and environmental State of Alaska and U.S. We are recommending that the Alaska Legislature withdraw all state support from this ill-conceived project. Regards, Rick Steiner, Professor (UA ret.) Oasis Earth	Thank you for your comment. 1. Please see Responses A, G, and J, above. 2. Please see Response A, above. The premise behind this statement is incorrect; the proposed project is not seeking funds from the LWCF. The proposed project requires an LWCF EA under NEPA because CSP has, in the past, used LWCF funds for CSP improvements. Using grant funding from the LWCF places additional federal protection over CSP. 3. Please see Response E, above. 4. Please see Responses B and I, above. Environmental impacts can, in many cases, be minimized and mitigated. This project has mitigation measures proposed, with agreement from relevant resource agency personnel, to minimize or mitigate potential impacts to Cook Inlet beluga whales, Dall sheep, wetlands and waters of the US, and anadromous fish species. Minimization and mitigation measures for impacts to recreation and aesthetics have also been incorporated into the design. 5. Please see Response F, above. 6. Please see Response L, above.

Taylor, Kneeland Dear Mr. Elliott: 1. The huge borrow-area at Bird Creek is an eyesore, and similar gravel mining in Chugach State Park along the Seward Highway should not be allowed in the future. 2. About 20 years ago I was one of the very first people to arrive at a double fatality motor vehicle accident on the Seward Highway. I spoke with one of the victims as she died. I remember that day well, and I am very sensitive to the need to provide for safe highways. 3. But the conversion of short stretches of the highway to four lanes increases [and does not reduce] the hazards to innocent motorists. That's because the reckless drivers speed up to pass on these stretches. The double fatality I witnessed resulted from an oncoming driver losing control on a slushy road, and crossing the centerline, and colliding head on with the victims. The couple who died were totally innocent of speeding, or bad driving: they were killed because the other driver lost control. Another high speed zone, which is what the Windy Point project will create, will cause more death to innocents, not less, because there will be more, not less, incidents of drivers losing control, and colliding with other vehicles. What is needed to increase safety is things like flashing lights attached to devices that show the speed of oncoming vehicles. It is clear to me that the DOT's long term goal it to four-lane the entire Turnagain Arm stretch of the highway. I oppose that. Four lanes from Potter's Marsh to Girdwood will destroy a scenic highway, especially if lined with ugly borrow pits similar to the one at Bird Creek. 4. There is also the impact on wildlife. There are salt licks along the steep slopes you intend to blow up; and good browse on these south west facing slopes. This is good habitat for Dall sheep, and the removal of these areas will undoubtedly negatively impact the use of these areas by Dall sheep. 5. A full environmental impact statement should be prepared, especially in light of the fact that the Windy Corner project is just one step in what is in actuality a bigger long term project; which is to four-lane the entire portion of the Seward Highway between Potter's Marsh and Girdwood. Kneeland Taylor	Thank you for your comment. 1. DOT&PF, DNR and NPS acknowledge your opinion. 2. The proposed improvements are being constructed to increase safety and reduce accidents, and to improve traffic flow. The proposed design includes a divided highway with a 24-foot median, which would sharply reduce the likelihood of the type of crash you describe. 3. The proposed project is not associated with any planned long-term development of a 4-lane Seward Highway from Potter Marsh to Girdwood. 4. Please see Response B, above. 5. With regards to a 'full environmental impact statement'; again, the project is not part of any long-term goal to construct a 4-lane highway from Potter Marsh to Girdwood. With the proposed minimization and mitigation measures, and Environmental Assessment has been determined to be the appropriate level of analysis for the proposed conversion of parkland.
Munter, Henry Brian, I'm writing to express my support of the Windy Corner project on the Seward Highway. Safety for commuters, tourists, and commercial traffic is vital to our local economy. Continuing to fund and implement major safety improvement projects on the Seward Highway represents common sense and return on investment. As the General Manager of Chugach Powder Guides in Girdwood, I represent a business that brings a steady source of revenue to Alaska during the winter months. The link between Anchorage and Girdwood is a critical component of that business, and I feel that continuing to work to make it as safe as possible should be a top priority for the state. Thank you for your time and consideration, Sincerely, Henry	Thank you for your comment on, and support of, the proposed highway improvements project.

Rense, John Dear Mr. Elliott Thank you for the opportunity to express strong support for improving the function and safety of the area known as "Windy Corner". I have had an opportunity to review the draft EA, and do not see any consequences so serious that the project should not proceed. I have traveled this highway for years, thousands of trips, and have also followed the years of public process and other work done as part of planning and design. The proposed improvements would be an overwhelming benefit to the highway and its users, with consequences mitigated by the work and process that has been done. Many options were considered along the way, and the approach takes into account the major elements of transportation, environment, human use, and cost. The Seward Highway is not your ordinary road. Considering the populations impacted and use volumes on this highway, I can identify NO OTHER ROAD in the United States that is even close to connecting such important areas without any alternative roadway option. DOTPF is right in stepping up to protect and improve this vital part of the State's transportation system. The EA confirms that the impacts from this project, which contemplates the use of 40 acres from the park, are reasonable. There is no possible way to do this without some consequences…it is a road, part of a vital transportation system. And while there will always be differences in views, your public process has been exhaustive and resulted in many approach variations. And in fact not completing this project carries its own set of environmental, safety and other costs. The road is a major link to more than 50% of the State's population, but less recognized is its importance to both sea and air transportation. When DOTPF steps up on the Seward Highway, they are also benefitting the wider State transportation system. Problems on the highway are felt downstream in many different parts of the economy and by personal users. The Seward Highway's growing use is measured by road statistics and is not in question. However, complications related to safety and other highway issues are not measured, and these are also spiraling up in both human and economic terms. In the search for perfection versus balance, I encourage DOTPF to consider both the local and broad transportation importance of the Seward Highway when weighing this EA or other elements of improving the road. DOTPF did the right thing when they identified Windy Corner as a priority on the Seward Highway. You should be confident that after much review during the long planning and EA process, a good alternative to improve this complex part of the transportation system has been identified. John Rense	Thank you for your comment on, and support of, the proposed highway improvements project.
Twardock, Paul (Friends of Chugach State Park) Dear Mr. Elliot: I am writing on behalf of the organization Friends of Chugach State Park, a volunteer citizen organization of approximately 600 people that focuses on the management, development and preservation of Chugach State Park. Please accept our comments on the proposed transfer of land from the park for recreation use to transportation use. Here are our concerns regarding this proposed exchange.	Thank you for your comment.

First we have serious concerns about the proposed value of material and related compensation for the removal of material from the park.

1 It appears the appraisal is based on the surface value of the sites ($53.000 for Site 1 and $105,000 for Site 6) based on a fee simple appraisal. We believe that if the royalty value of the Chugach State Park materials are included the CSP sites' values range between $1,000,000 and $5,000,000. This is a huge omission from the EA. We urge an equal comparison.

2 There are reasonable solutions, albeit possibly costlier, sources for the material. DOT argues that it would make the project too expensive. We argue that a thorough analysis of the potential alternatives has not been done and should be before any conversion takes place. We request that a true market value of materials be considered in the costs, not just the fee simple land. When included alternative sites become more financially desirable.

3 Second we disagree with the projects proposed primary purpose, increasing safety, in the EA's "Purpose and Need" section. Since the highway safety corridor was enacted in 2006 fatalities have dropped between Potter and Girdwood, especially in the project area, one estimate by around 38%. Furthermore other studies show that introducing variable rates of speed, eg: going from 55mph to 60mph, which this project will create, actually increases accidents. When the safety premise is removed then the land swap is not justified.

Finally, the EA states that:
p. 15: "The replacement area will have greater recreation utility than the converted sites. The converted upland areas have no formal trails and low levels of recreation use."
p. 19: "The recreational opportunities provided by these sites are few or limited, and their usefulness for outdoor recreation areas is low."
p. 23: "The development and construction of the replacement parcel would result in a net positive benefit to the recreational opportunities and resources offered by CSP, by providing safe access and facilities for travelers to stop and enjoy the scenery"

4 The reality is that the material sites will be destroyed for any habitat, scenic, or recreational values, all of which are primary park purposes. Supplying material for transportation projects is not one of the park's purposes. Furthermore we do not know of any recreational survey done on the sites so these 'facts' are suspect. Finally we do not think 1-2 large material quarries can in any way be considered an improvement in "Scenic Qualities." This is especially important considering the Seward Highway's designation as a National Scenic Byway. DOT's management and development of the Bird Creek site is an example of the potential eye sore that these material sites will create.
We ask the LWCF reject the EA as inadequate in its treatment of the MP 104 and MP 109 rock quarries, and hold that they would have a detrimental effect on the Park and the National Scenic Byway.

Sincerely,
Paul Twardock
Paul Twardock
Friends of Chugach State Park

1. Please see Response H, above. In addition, DNR-Division of Parks & Outdoor Recreation cannot sell material from the park.
2. Please see Response D, above. In addition, the proposed highway improvements are undergoing analysis under Section 4(f) of the Department of Transportation Act (1966), in addition to undergoing its own project environmental documentation and evaluation. Each of these will include an opportunity for public review and comment.
3. Please see Response G, above.
4. Please see Responses E and K, above. There are no identified, maintained trails located within the proposed material sites; DOT&PF does not currently plan to conduct a recreational survey of these areas.

Childers, Bob (President, Rainbow Valley Homeowners Association) Dear Mr Elliott: I am writing you on behalf of the 18 homeowners of the Rainbow Valley Homeowners Association, an inholding in Chugach State Park accessed at MP108.5 by private road. We are strongly opposed to the proposed material site at MP 109 for the Windy Corner project. 1 The shape and depth of the pit will invite camping and trash easily obscured from the roadway. Associated problems have grown at this location over the last few years, and have led to thefts, altercations, numerous piles of stolen mail, open fires and other problems. Alaska State Trooper service is scheduled to end May 1st, and neither State Parks or Highways is in a position to clean up or police the situation. 2 We are especially concerned that no serious consideration was given to alternative rock sources. Indeed, the no-cost rock agreement leaves contractors no real choice but to use this site. 3 Living here, we are conscious of the really important wildlife habitat at this location. Throughout the year we consistently see more moose, bears, spruce grouse, rabbits in some years, right there, at the knoll that would be lost, than almost anywhere else in the valley. Every spring at least a couple calf moose will be seen there, along our lower road. The knoll is covered in trails and signs of use. 4 We believe DOT should make more serious efforts to avoid rock quarries along Seward Hwy Nat'l Scenic Highway, and from Chugach St Park when other available sources exist. 5 Finally, I want to underscore that our membership will be directly and permanently effected by this proposed material site, and we are more than a little unhappy about it. Thank you for your consideration, Bob Childers, President Rainbow Valley Homeowners Association	Thank you for your comment. 1. Following construction, the proposed MP109 material site would be owned and managed by DNR. Please see Response K, above. 2. Please see Response D, above. A range of material sites and transport methods has now been evaluated for this project. 3. Please see Response B, above. The proposed project would result in loss of most likely 19.6 acres of upland habitat, and possibly up to 35.4 acres. The surrounding terrain includes many thousands of acres of similar habitat. 4. Please see Response E, above. 5. Please see Response F, above. As the only community in the vicinity of the proposed MP109 material site, there are likely to be impacts to Rainbow, particularly during construction. This is acknowledged in the final EA, and will be identified further in the forthcoming project environmental document.
Fletcher, Alexandra Dear Mr. Elliot, As a business owner living in Girdwood, I am a frequent commuter on the Seward Highway. The proposed changes to the Seward Highway from 105-107 are impressive. They will definitely improve the flow of traffic, increase line of sight and allow the sheep peepers to have a more enjoyable experience without endangering commuters. Sincerely, Alexandra Fletcher	Thank you for your comment on, and support of, the proposed highway improvements project.
Tileston, Peg Dear Mr. Elliot: I wish to express my deep concern for the inadequacy of the Environmental Assessment for the proposed Windy Corner Safety Improvements. The Environmental Assessment for the Land and Water Conservation Act Section 6(F) is woefully lacking, having numerous problems. The apparent disinterested attitude of the impact on Chugach State Park and the residents of Rainbow Valley is appalling. 1 The EA treats the removal of 35.4 acres of uplands from Chugach State Park to serve as material sources as having no consequences. The loss of the park property (public property) should never be taken lightly and certainly not for the use of material quarries. To equate the proposed quarries to the Bird Creek material sight would be laughable if it were not so far off-base.	Thank you for your comment. 1. DOT&PF, DNR and NPS do take the potential use of parkland seriously, and that level of consideration is reflected in the high level of coordination with resource agency personnel form AK Department of Fish & Game, US Army Corps of Engineers, and most especially AK Department of Natural Resources. That level of consideration is also reflected in this documented analysis, among many other steps.

2 First I want to say, I have driven the Seward Highway for many years, enjoying the beauty, serenity and ever-changing viewing opportunities. Its designation as a National Scenic Byway recognizes its importance as it fulfills the requirements of Scenic Natural, Historic, Cultural, Archeological, and Recreational Qualities. To imagine scars along this Scenic Highway much larger than the very ugly Bird Creek quarry is appalling. We have sacrificed Chugach State Park land at Bird Creek for the sake of highway construction once – that's enough. 3 The EA gives no recognition to the noise, air quality and disruption to the residents of Rainbow Valley from having a quarry in their front yard. Blasting, helicopters, trucks and heavy equipment are not even mentioned as impacts to these folks not to mention having to live with the everlasting reminisce of the insult of being ignored. 4 The EA states that Dall sheep should return upon completion of the project however before the Bird Creek quarry, we periodically saw sheep in the area. Since its completion we have not seen one sheep there. With the large disturbance this project will cause including the removal a salt licks, it is most probable the sheep will avoid the area. 5 Disturbance of tidal action from the proposed construction around Gorilla Rock and its potential affect on Beluga whales is not addressed. Indications are the whales use the eddy as they move up Turnagain Arm. Since Belugas are considered to be threatened/endangered it would seem logical to some attention to be paid to this aspect. 6 Finally, the cost of the project is prohibitive at a time when the state can't meet its budgeted expenses and the federal government is planning major cuts. Currently, the state has appropriated $42 million of its money to this project when there are numerous transportation needs that are going unfunded such as bridge repair/replacement, culvert replacement, airport repair and upgrade of the ferry system. In closing, I reiterate this Environmental Assessment should not be accepted. I oppose the project, but if it continues forward the EA must be redone.	2. Please see Response E, above. The proposed MP109 material site would be partially screened, to minimize the visual impacts. In addition, this screened site would also be visible for less than 0.6 miles of the Seward Highway, of which the Scenic Byway designation stretches 127 miles. 3. Please see Response F, above. 4. Please see Response B, above. The proposed project design has been revised to incorporate AK Department of Fish & Game input, and the mineral lick will not be removed. 5. Please see Response I, above. NMFS has reviewed, and concurred with, the finding that the proposed project 'May Affect, but Not Likely to Adversely Affect' the Cook Inlet beluga whale population. 6. Please see Response A, above. At present, no State funding has been obligated for construction of this project. DOT&PF, DNR and NPS acknowledge your opinion.
Holleman, Marybeth Mr. Elliott: The draft Environmental Assessment for the Windy Corner project is insufficient to allow this project to proceed, as I will detail below. I have reviewed this EA, and find it to be one of the most incomplete and misleading EA's I've ever read. I am a thirty-year resident of Anchorage who frequents Chugach State Park year-round, several times a week. I'm also a member of Friends of Chugach State Park; while these comments are my own, many are shared with other Friends of CSP. 1 1. DOT fails to show a "purpose and need" for this project. Their analysis is based on outdated and misleading information. The 2006 "safety corridor" has resulted in decreased fatalities and major-injury crashes. Specifically, there have been no fatalities in the Windy Corner section for the past ten years, and there has been a 36% *decrease* in in fatalities in the entire 31-mile corridor. Therefore, DOT is simply misrepresenting the need for this project by using the past 45 years of data, when they should be looking at data based on the current situation. This proposed project would not significantly improve safety along this corridor, but may instead, with increased speeds, decrease safety. 2 2. This proposed project would cost the state tens of millions at a time when the state is mired in multi-billion-dollar deficits, and since it does not show a "purpose and need," would be an obvious waste of state funds.	Thank you for your comment. 1. Please see Responses J and G, above. 2. Please see Responses A and J, above.

3	3. This proposed project purports to "improve" Dall sheep viewing, but instead will substantially *decrease* sheep habitat with the blasting removal of rock and salt licks. Not only does this violate the purpose of the LWCF, but the EA does not adequately explain how the proposed project's industrial activities would be conducted without harming the sheep that inhabit that area. Therefore, the proposed project may actually *decrease* Dall sheep viewing because there will be fewer sheep.	3. Please see Response B, above. The project design was revised following coordination with AK Department of Fish & Game personnel, specifically to avoid the high-value mineral lick area above the highway. One result of this adjustment is that more fill is required in Turnagain Arm to accommodate the design and revised location.
4	4. The proposed project fails to sufficiently address the potential effects on the critically-endangered Cook Inlet beluga whale population.	4. Please see Response I, above. NMFS has reviewed, and concurred with, the finding that the proposed project 'May Affect, but Not Likely to Adversely Affect' the Cook Inlet beluga whale population.
5	5. This EA fails to address impacts of drilling, blasting, and other industrial activities on the residents of the community of Rainbow.	5. Please see Response F, above.
6	6. The proposed project, with the large-scale removal of rock from Chugach State Park, is in opposition to the federally designated National Scenic Byway corridor standards. Already, these standards have been compromised by the Bird Creek rock removal and resultant wall, making it shockingly obvious that DOT does not comprehend what a "scenic" byway looks like.	6. Please see Responses E and K, above. The project is in compliance with the Seward Highway Corridor Partnership Plan.
7	7. The EA states that the proposed project would remove rock, and therefore take habitat, from Chugach State Park, without any compensation to the Park.	7. Please see Response H, above. Per LWCF 6(f) requirements, the proposed project provides compensatory mitigation in the form of 17 acres of former highway, which would be developed into a parking area, improved trailhead, and facilities.
8	8. DOT has been unwilling, despite public requests, to hold any public hearings on this proposed project in Anchorage; instead, the hearings were held primarily in Girdwood. This has made the resultant EA misleading, incomplete, and misrepresentative of the communities it is intending to serve.	8. Please see Response L, above.
9.	The proposed project would do irreparable harm to the Seward Highway National Scenic Byway, to the Chugach State Park, to the Dall sheep population, and likely to the Cook Inlet beluga whale populations. Since the safety data used is misleading and out-of-date, the proposed project does not meet requirements for "purpose and need." It would not improve safety along this corridor. The proposed project fails to meet the economic and environmental standards of the State of Alaska and the LWCF. Please reject this proposed project based on this Environmental Assessment. Sincerely, Marybeth Holleman	9. DOT&PF, DNR and NPS acknowledge your opinion.

United States Department of the Interior

NATIONAL PARK SERVICE
Alaska Region
240 West 5th Avenue
Anchorage, Alaska 99501

Seward Highway Mileposts 105-107, Windy Corner Improvements
A Partial Conversion of Land Subject to Section 6(f)(3)
of the Land and Water Conservation Fund Act, Public Law 108-198
Chugach State Park, Anchorage, Alaska
Environmental Assessment
Finding of No Significant Impact

February 2019

This Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to adopt the preferred alternative in the Windy Corner Environmental Assessment. Alternative 2, the Selected Alternative, includes partial conversion at Chugach State Park by transferring Land and Water Conservation Fund (LWCF) 6(f)(3) requirements from 39.56 acres of land that is currently in park use to 14.7 acres of land currently in transportation use that will be redeveloped for park use. There will remain at Chugach State Park more than 430,000 acres to be managed subject to LWCF requirements.

This alternative was evaluated against Alternative 1, No Action. Both alternatives were described and analyzed in the February 2019 "Seward Highway Mileposts 105-107, Windy Corner Improvements: A [Partial] Conversion of Land Subject to Section 6(f)(3) of the Land and Water Conservation Fund Act, Public Law 108-198 Environmental Assessment" (EA). This EA was prepared by the Alaska Department of Transportation (ADOT) on behalf of the Federal Highway Administration (FHWA) and in cooperation with the Alaska Department of Natural Resources (AKDNR) and NPS.

The LWCF Act is now codified at 54 U.S.C. Section 200305(f)(3). The request to adopt the preferred alternative is made to NPS by the AKDNR, who both administers the LWCF program in Alaska on behalf of NPS and owns and manages Chugach State Park. Chugach State Park is located east of Anchorage, Alaska. The replacement parcel is currently part of the Seward Highway right-of-way where it runs through Chugach State Park.

PURPOSE AND NEED

In 1970, the U.S. Department of the Interior (DOI) Bureau of Outdoor Recreation (now the NPS LWCF AKDNR and Local Assistance Program) awarded grant #02-00057 for development of water wells at a number of AKDNR parks, including Chugach. Overall, there have been awarded fifteen LWCF grants for acquisition and development projects at Chugach. The AKDNR accepted the terms of the grant agreements with full knowledge that those terms include maintaining the park for public outdoor recreation purposes unless those responsibilities are otherwise transferred to an alternate location and approved by the Secretary of the DOI as delegated to the NPS. This LWCF program "conversion" process is described more fully in NPS regulations at 36 C.F.R. 59.3.

Seward Highway travels through Chugach State Park, connecting the City of Anchorage to important points of interest to the south, including the City of Soldotna and Kenai Fjords National Park. ADOT has determined that numerous design issues along Seward Highway contribute to significant public safety concerns and has concluded that reconfiguration of this section of road is needed in order to decrease the number of high-severity injury motor vehicle crashes and also to improve traffic flow. The realignment of the highway would be permanent. In order to complete these safety improvements, ADOT has also determined

the need to gather some construction materials onsite. Although the impact in that area of the park will be temporary, it will be in excess of how NPS currently defines "temporary" for the purposes of LWCF. For LWCF purposes, "temporary" is currently defined as 180 days. The impacts at the borrow site area may last up to two years before they are returned to park use.

While the transportation project itself is not subject to NPS review, NPS must approve the request to convert AKDNR LWCF responsibilities from one section of Chugach State Park to the portion of Seward Highway that will be added to Chugach State Park. The areas to be converted from recreation to transportation use are currently valued as open space, mostly mudflat accessible to the public at low tide. The two materials borrow sites are steeply sloping vegetated banks with bedrock outcroppings, also valued as open space but with no developed public access points. The replacement property will be developed with a new scenic overlook taking advantage of views that include Turnagain Arm and the Kenai Mountains. New recreation developments will include vehicle access, parking, and interpretive signage.

The scope of the NPS review is limited to: 1) assessing equivalency between the area proposed for removal from LWCF related public outdoor recreation use restrictions and the proposed replacement properties as further described in 36 C.F.R. 59.3; 2) determining whether the 430,000 acres at Chugach State Park that remain subject to Section 6(f)(3) requirements will constitute a viable outdoor recreation unit; and, 3) determining whether there are any potential significant environmental impacts associated with developing the replacement park for public outdoor recreation use.

ALTERNATIVES CONSIDERED

1. No Action Alternative

NPS does not approve the AKDNR's proposal to convert a portion of Chugach State Park pursuant to the LWCF conversion regulations. This would not prevent ADOT from moving forward with reconstruction of Seward Highway, but it could subject the AKDNR to penalties including freezing grant funding to other agencies within the state of Alaska. It would also prevent the old Seward Highway alignment from being added to the LWCF estate.

2. Proposed Action Alternative (Selected Alternative)

NPS approves the AKDNR's request to convert LWCF requirements from 39.56 acres at Chugach State Park to 14.7 acres that will be added to Chugach State Park. This will result in a net loss of 24.86 acres from the LWCF estate but a net gain of 10.54 acres to the public recreation estate.

SELECTED ALTERNATIVE

The NPS has selected for implementation the Proposed Action Alternative as described in the EA.

Under the selected alternative, 430,000 acres +/- will continue to be managed consistent with LWCF requirements and will continue to provide public outdoor recreation opportunities for park users. The slightly reduced Chugach State Park will continue to include camping, hiking, trails, and open space for the recreating public. A 39.56 acre section of Chugach State Park will be removed from LWCF requirements. This represents approximately 0.0092% of the LWCF acreage at Chugach State Park.

ADOT will develop a 14.7 acre property as a scenic overlook and trail head and then transfer it to AKDNR where it will become part of the acreage administered for LWCF purposes. The 35.4 acre temporary impact area will remain in AKDNR ownership and be restored for public outdoor recreation use, but will be permanently removed from the LWCF estate.

Based on the analysis provided in chapters three and five of the EA, along with a Biological Assessment and other appendices, NPS concludes the environmental impacts of the conversion are as follows:

Land Use and Recreation: The LWCF Act requires replacement property to be equivalent fair market value, location, and recreation usefulness. It does not require there to be no net loss in total LWCF acreage. While this conversion will result in a net loss of LWCF acreage, the net gain to public recreation infrastructure results in an equivalent exchange. The location is almost identical and the fair market equivalency has been established by appraisals that meet Uniform Appraisal Standards for Federal Land Acquisitions. The impact to land use and recreation as a whole (beyond LWCF) is both a net gain in recreation acreage and a net gain in recreation infrastructure.

Circulation and Transportation: Circulation and transportation through Chugach State Park should improve as a result of the ADOT project that is prompting this conversion request. While that project is outside the scope of the NPS NEPA action, approval of the conversion will result in a safe overlook and trailhead, reducing the potential for people to stop their vehicles in unsafe locations in pursuit of recreation purposes.

Site Aesthetics: For the two years that they are in use, the borrow pits have the potential to negatively impact site aesthetics. Given the slope of the terrain, the existing vegetation cover, and the distance between the borrow pits and the two closest trails, it is believed they will not be visible to trail users. If recreation users choose to hike off trail to a point where they can see the borrow pits, it is possible their experience of site aesthetics will be negatively impacted. As the impacts will be temporary in nature and not affecting a developed recreation amenity, adverse impacts are likely to be minor.

Surface Waters, Floodplains, and Wetlands: Although approval of the conversion and development of the replacement site for park purposes will have no effect on water resources (the conversion approval is administrative and the replacement site is currently in road use), the Seward Highway project itself may impact these resources. Although the referenced EA includes some analysis of those potential impacts, assessment of significance lies with FHWA and should be addressed in their decision document.

Plants, Animals, and Federally Listed Species: Although approval of the conversion and development of the replacement site for park purposes will have no effect on plants or animals, federally listed species, or sensitive habitat (the conversion approval is administrative and the replacement site is currently in road use), the Seward Highway project itself may impact these resources. Although this EA includes some analysis of those potential impacts, assessment of significance lies with FHWA and should be addressed in their decision document.

Historic Properties: Although approval of the conversion and development of the replacement site for park purposes will have no effect on properties listed on or eligible for listing on the National Register of Historic Properties (the conversion approval is administrative and the replacement site is currently in road use - the road itself is not an historic property), there is an historic property within the Area of Potential Effect for the Seward Highway Project and impacts have been assessed by ADOT on behalf of FHWA in consultation with the State Historic Preservation Officer (SHPO).

PRELIMINARY ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED

NEPA allows for alternatives to be eliminated from detailed study based on criteria described in 40 CFR 1504.14 (a). In the case of LWCF conversions, NPS has only two options available: 1) approve the conversion if the criteria are met; or, 2) request additional materials of the AKDNR until the criteria for approval are met. This is also described as the no action alternative and the selected alternative as discussed above.

However, ADOT also considered a smaller conversion footprint alternative that would have required them to locate the materials borrow sites outside the park. Had NPS been forwarded the [Smaller] Conversion Alternative as the selected option instead, it could also have been approved. A choice between the Proposed

Action Alternative and the [Smaller] Conversion Alternative is not with the authority of NPS to select but lies solely with AKDNR and ADOT.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT

After considering the environmental consequences described in the EA, the NPS has determined that the Selected Alternative and its associated actions will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared. This finding is based on the following:

• The Selected Alternative will include both beneficial and adverse effects. The Selected Alternative will not have adverse impacts to geological resources, air quality, noise level, water quality/quantity, natural resources such as floodplains, wetlands, and species habitat; land use and planning, circulation such as transportation and accessibility, recreation, aesthetics, historical and cultural resource and socio economic resources, or economic justice for minority and low income populations. The finding of no significant environmental effects is not biased by the beneficial effects of the action.

• The Selected Alternative will not adversely affect public health or safety.

• The Selected Alternative will not result in significant adverse effects to the unique natural resource characteristics of the area, including prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

• The effects on the human environment are known, and there were no controversial impacts or aspects of the proposed project that surfaced during the environmental analysis process. There is no scientific controversy over the impacts of the project.

• The Selected Alternative will have no effect on historic properties. There will be no adverse effect to historic properties within the area of potential effect.

• The Selected Alternative would have no effect on species listed or proposed for listing as endangered or threatened or their critical habitat as determined under the Endangered Species Act of 1973. There are no relevant species or critical habitat in the project area.

• No significant cumulative effects and no highly uncertain, unique or unknown risks were identified during preparation of the EA or during the public review period. The Selected Alternative was evaluated under the standard conversion process criteria in 36 C.F.R. 59.3. Thus, the Selected Alternative neither establishes a precedent for future actions with significant effects nor represents a decision in principle about a future consideration. Conversion proposals are evaluated independently on a case by case basis without reliance on prior decisions.

• The Selected Alternative will not violate federal, state, or local laws or requirements for the protection of the environment.

AGENCY COORDINATION

The public outreach called for by Section 106 of the NHPA was integrated into the NEPA process. Consultation was delegated by FHWA as the lead federal agency to ADOT. The SHPO concurred with a finding of no adverse effect to historic properties in a letter dated February 6, 2015.

This proposal was developed by ADOT on behalf of FHWA in consultation with the AKDNR and the National Park Service, State and Local Assistance Programs.

PUBLIC INVOLVEMENT

The public was invited to participate throughout the scoping process as documented in the "Public Involvement" appendix to the EA. The EA was released for a 30-day public comment period. Substantial comments were addressed by ADOT. Those relevant to NPS review include concerns raised about the potential for aesthetic impacts related to the borrow sites and the equivalency of the replacement land as compared with what is being proposed for conversion.

FINDING

Based on the information provided in the EA and summarized above, the NPS has determined that implementation of the Selected Alternative is not a major federal action and does not require an Environmental Impact statement (EIS). The Selected Alternative will not have a significant effect on the human environment. There are no significant impacts on public health, public safety, or threatened or endangered species. The Selected Alternative will have minor adverse impacts to recreation, which will be mitigated through acquisition and development of the replacement site. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the Selected Alternative is also consistent with 36 C.F.R. 59.3. Therefore, in compliance with the National Environmental Policy Act, an EIS will not be prepared, and the selected project may be implemented immediately.

Recommended by:
Raymond Murray,

Ray Murray — 5/13/19

Chief, Partnership Programs — Date
State and Local Assistance Programs
Pacific West Region
National Park Service

Approved:
Bert Frost,

Regional Director — Date
Alaska Region
National Park Service