State of Alaska
Department of Transportation & Public Facilities

CATEGORICAL EXCLUSION DOCUMENTATION FORM
(NEPA Assignment Program Projects)

The environmental review, consultation, and other actions required by the applicable Federal environmental laws for this project are being, or have been carried out by the DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017, and executed by FHWA and DOT&PF.

I. Project Information

A. Project Name: Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road

B. State Project Number: CFHWY00562

C. Federal Project Number: 0001723

D. Primary/Ancillary Project Connections: Seldon Road Extension Phase I: Windy Bottom/Beverly Lakes Road to Pittman Road (MSB-funded project)

E. COA Determination: Unlisted CE

F. Project Scope:

TIP or STIP: STIP

Need ID: 32724

Project Scope:

The project extends Seldon Road on a new alignment to the north from its current terminus at Beverly Lake Road (a residential subdivision road) and connect to Pittman Road. Project development includes completion of design and right-of-way along with full construction of a new arterial level facility with separated bike path.

G. Project Purpose And Need:

The purpose of this project is to continue the roadway connection between Church Road and Pittman Road, the next link in the east-west corridor running from Palmer to Houston. The project would provide a roadway alignment for vehicles to travel east and west, an alternate route to the Parks Highway, improve overall traffic circulation in the area, and provide better facilities for pedestrians. Project is part of the Matanuska-Susitna Borough Long-Range transportation Plan adopted in 2017.

H. Project Description:

The Alaska Department of Transportation and Public Facilities (DOT) is proposing to complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, AK (Figures 1-2). The proposed project would:

1) Extend Seldon Road with a 2.25 mile two-lane arterial facility

2) Construct frontage roads to tie into the existing road network

3) Reconstruct portions of adjacent roads to meet current standards and create new intersections

4) Construct a new 10-foot wide separated pedestrian pathway on the south side of the new facility

5) Construct a new trailhead parking area at the new Pittman Road intersection

6) Relocate utilities

7) Construct new drainage facilities

8) Clear and grub vegetation

9) Install new or replace roadside hardware, including signing and striping

Attachments

Environmental Consequences

Project Plans & Location Information

- appendix_a_figures.pdf CFHWY00562.pdf

Historic Properties and Cultural Impacts

- CFHWY00562_2013_Initiation_letters.pdf CFHWY00562.pdf
- Seldon Rd_Initiation_Package.pdf CFHWY00562.pdf
- CFHWY00562 Seldon Rd_Findings Package.pdf CFHWY00562.pdf
- Regional_Cultural_Resource_Specialist_Agreement.pdf CFHWY00562.pdf CFHWY00562.pdf
- CFHWY00562_Fnding_Concurrence.pdf CFHWY00562.pdf
- CE_106_Consultation_Responses_and_Survey_Documents_Final.pdf CFHWY00562.pdf

Floodplain Impacts (23 CFR 650, Subpart A)

- Appendix A.pdf CFHWY00562.pdf
- LHS CFHWY00562.pdf
- Public Involvement Documentation CFHWY00562.pdf
- Notice of Intent to Begin Engineering and Environmental Studies.pdf CFHWY00562.pdf

Wetland and Waterbody Impacts

- appendix_c1_wetdel_rpt_appen.pdf CFHWY00562.pdf
- appendix_c2_wetdel_photos.pdf CFHWY00562.pdf

Fish and Wildlife Impacts

- appendix_d_eaglenestsurvey.pdf CFHWY00562.pdf

Water Quality Impacts

- appendix_f_scoping.pdf CFHWY00562.pdf

Noise Impacts (23 CFR 772)

- appendix_e_noisereport.pdf CFHWY00562.pdf

Comments and Coordination

Public Involvement

- Seldon Road Extension Phase II_ADN.pdf CFHWY00562.pdf
- Seldon Road Extension Phase II_Frontiersman.pdf CFHWY00562.pdf
- Notice of Intent to Begin Engineering and Environmental Studies.pdf CFHWY00562.pdf
- NOI_Floodplain.pdf CFHWY00562.pdf
- 20230314_Seldon_Issue Response Summary_v3 (1).pdf CFHWY00562.pdf
- 20230314_Seldon_PI Chronology_v2_sk (1).pdf CFHWY00562.pdf
- 20230315 Seldon PI Original Documentation_sk (1).pdf CFHWY00562.pdf

Agency Involvement

- appendix_f_scoping.pdf CFHWY00562.pdf

II. Environmental Consequences

A. Land Use and Transportation Plans	Yes	No
1. Were land use plans for this area reviewed? If yes, include source, link, and date accessed.	☑	☐

1. "Meadow Lakes Comprehensive Plan" (MSB, 2005). Source: https://matsugov.us/plans/meadow-lakes-comprehensive-plan. Accessed: 12/06/22.

a. Is the project consistent with land use plan(s)?	☑	☐
2. Were transportation plans for this area reviewed?	☑	☐

1. "2035 MSB Long Range Transportation Plan" (MSB, 2017). Source: https://matsugov.us/plans/lrtp. Accessed: 12/06/22.
2. "2007 MSB Long Range Transportation Plan" (MSB, 2007). Source: http://www.wasillamainstreetproject.com/documents/JUNE%2007%20LRTP[1].pdf. Accessed: 12/06/22.

a. Is the project consistent with transportation plan(s)?	☑	☐
3. Would the project induce adverse indirect and cumulative effects on land use or transportation?	☐	☑

Summary
Summarize how the project is consistent or inconsistent with land use and transportation plan(s).

The proposed project would address the need identified in the 2005 "Meadow Lakes Comprehensive Plan" (MSB) for a new east-west road (referred to as "Seldon West") through Meadow Lakes to connect Houston to Wasilla and Big Lake, which would help alleviate traffic congestion on the George Parks Highway and provide more efficient access to adjoining communities.

The proposed project would also address part of the MSB arterial grid system inadequacy identified in the "2035 MSB Long Range Transportation Plan" (MSB, 2017) and the "2007 Long Range Transportation Plan" (MSB, 2007) by extending Seldon Road west to Pittman Road. The proposed project is also identified in the "MSB Five Arterials Planning Study" (DOT&PF, 2013) as a needed arterial facility improvement to address inadequacies in the arterial grid system between Palmer and Houston. Currently, the arterial grid between Palmer and Houston lacks alternate routes for traffic flow to the George Parks Highway. During times of peak traffic volumes operational difficulties in this arterial grid result in traffic congestion and travel delays.

The project would divert heavy residential traffic off of a subdivision collector road, Beverly Lakes Road, to the project, an arterial designed to carry the larger amounts of traffic.

The proposed project would not have adverse, indirect, or cumulative effects to local transportation or land use plans.

B. Right-of-Way Impacts	Yes	No
1. Are there any temporary right-of-way (ROW) impacts (e.g., Temporary Construction Easements (TCEs), Temporary Construction Permits (TCPs), utility relocates, construction staging area)?	☑	☐
2. Is additional permanent ROW required?	☑	☐
a. Are there any full parcel acquisitions?	☐	☑
b. Are more than 25 partial parcel acquisitions required?	☐	☑

B. **Right-of-Way Impacts**	Yes	No
c. Are business or residential relocations required?	☐	☑
3. Will there be property transfer from a local, state, or federal agency?	☐	☑
4. Will the project require an ANILCA Title XI approval?	☐	☑

Summary
Summarize ROW impacts, if any. Include any project-specific commitments or mitigative measures in Section V.

The proposed project area presents challenging physical conditions. The landscape is dotted with lakes, several streams, wetland complexes, and pockets with poor soils and high water tables. As a result, prime development land is generally focused on narrow uplands between lakes and wetlands, making it a challenge to avoid direct impact to individual properties and structures. The proposed project traverses a rural residential area comprised of 1-40 acre lots.

To minimize ROW and wetland impacts, the proposed project alignment follows a curving horizontal corridor that seeks to avoid wetland and ROW acquisition to the maximum extent practicable while balancing cut and fill.

Some ROW for the proposed project was previously acquired when the project was being managed by the MSB with utilization of non-federal funding. Acquisition of an additional partial parcel is anticipated to be required in order to develop the proposed project. The parcel itself is uninhabited and contains no structures. Although the parcel is not zoned for a specific land-use category, it is owned through partnership, by a commercial business with operations in the area. Partial acquisition of the parcel is not anticipated to adversely affect the business or its operational capacity within the Matanuska-Susitna Borough.

A "Corridor Access Management Plan" was developed to establish proposed access locations along the proposed road alignment, how existing property access will be maintained, and ways to minimize traffic interruptions and promote safety. No residential or business relocations are anticipated to occur as a result of developing the proposed project.

C. **Environmental Justice Impacts (E.O. 12898)**	Yes	No
1. Is there potential to affect environmental justice (EJ) populations?	☑	☐

2. Include source, link, and date accessed of databases used.

The Environmental Protection Agency, Environmental Justice Screening and Mapping Tool (accessed online September 15, 2022 at https://ejscreen.epa.gov/mapper/ejscreen_v1/index.html) does not identify any demographics that greatly exceed state or national averages.

3. Are environmental justice (EJ) populations present within or adjacent to the project area?	☑	☐
4. Will the project have an adverse effect on EJ populations?	☐	☑

Summary
Summarize EJ population impacts and mitigation, if any. Include any project-specific commitments or mitigative measures in Section V.

The proposed project would not disproportionately affect the elderly, handicapped, non-drivers, transit-dependent, minority and ethnic groups, or the economically disadvantaged. The Environmental Protection Agency, Environmental Justice Screening and Mapping Tool (accessed online September 15, 2022 at https://ejscreen.epa.gov/mapper/ejscreen_v1/index.html) does not identify any demographics that greatly exceed state or national averages in or adjacent to the project area. Adverse impacts would not be experienced by EJ populations within or adjacent to the project area because EJ populations are not disproportionately represented within the project area.

Although EJ populations were not found to be disproportionately represented in the project area, there are likely some individuals present that would fall into an EJ population category. The proposed project is expected to provide

beneficial impacts to them because, 1) Providing a faster connection to healthcare and to access supplies/needs, 2) Providing improved accessibility to other areas of the Matanuska Valley to both motorists and pedestrians, and 3) Providing a separated pedestrian pathway for safer pedestrian travel.

D. Historic Properties and Cultural Impacts	**Yes**	**No**
1. Is a National Register of Historic Places listed or eligible property in the proposed Area of Potential Effect (APE)?	☐	☑
2. Was a programmatic allowance processed for the project under the Section 106 Programmatic Agreement?	☐	☑
3. Was Section 106 consultation initiated or a Direct to Findings worksheet completed?	☑	☐
a. Was a direct to findings worksheet completed?	☐	☑

b. Date Consultation Initiation Letters sent

10/18/2013; 3/8/2022 (Appendix B)

Attachments

- CFHWY00562_2013_Initiation_letters.pdf CFHWY00562.pdf
- Seldon Rd_Initiation_Package.pdf CFHWY00562.pdf

c. List consulting parties:

SHPO, CIRI, City of Wasilla, Knik Tribal Council, Native Village of Eklutna (2013); SHPO, MSB, City of Wasilla, CIRI, Knikatunu Inc., Knick Tribe, Chickaloon Moose Creek Native Association, CNV, Wasilla-Knik Historical Society (2022).

d. Were any comments received?	☑	☐

Comments were received from Chickaloon Village Traditional Council (CVTC), and the Knik Tribal Council (KTC), and SHPO. CIRI stated on April 4, 2022 they had no concerns with the project. The attached appendix details these comments and further consultation efforts. A summary of comments received from KTC, CVTC, and SHPO are provided below.

KTC raised concerns on March 10, 2022 about materials sources for the project. DOT&PF responded by stating it will be up to the selected contractor to select one or more materials sites, and acquire any needed permits.

CVTC stated on March 11, 2022 that areas of traditional religious and cultural importance to the tribe were present in the area and requested consultation with FHWA via government to government. However, during the government to government consultation with FHWA, CVTC did not identify any locations of traditional religious or cultural importance within the study area. The resulting documents from the consultation between CVTC and the FHWA did not identify specific sites, structures, or geographic locations of traditional religious and cultural importance to CVTC.

SHPO responded on 4/5/22 that the new alignment near the west end of the project near Pittman Road was not previously surveyed for cultural resources and a cultural resources survey of this new alignment may be necessary.

D. **Historic Properties and Cultural Impacts**	Yes	No
4. Was a Section 106 “Finding of Effect” completed?	☑	☐

Attachments

- CFHWY00562 Seldon Rd_Findings Package.pdf CFHWY00562.pdf
- Regional_Cultural_Resource_Specialist_Agreement.pdf CFHWY00562.pdf CFHWY00562.pdf

a. Date “Finding of Effect” Letters sent:

02/09/2016; 06/16/2022

b. State “Finding of Effect”:

- No Effect

c. Were there any changes to consulting parties?	☐	☑
d. Were any comments received?	☑	☐

SHPO concurred with the finding of no historic properties affected on April 19, 2016 and July 11, 2022.

CVTC did not provide concurrence with the finding of no effect on July 1, 2022, and stated their opposition to the findings letter, but didn't identify any structure or specific area of cultural and religious importance to the tribe.

5. Date State Historic Preservation Officer (SHPO) concurred with "Finding of Effect":

4/19/16 & 7/11/22

Attachments

- CFHWY00562_Fnding_Concurrence.pdf CFHWY00562.pdf

6. Will there be an adverse effect on a historic property?	☐	☑
7. Are there any unresolved issues with consulting parties, including project issues or concerns of a federally-recognized Indian Tribe [36 CFR 800.16(m)]?	☐	☑

Summary
Summarize impacts to historic properties and mitigation, if any. List affected sites (by AHRS number only) and any commitments or mitigative measures. Also include any project-specific commitments or mitigative measures in Section V.

The proposed project is not anticipated to impact historic or cultural resources. A Cultural Resource Survey Report (Cultural Resource Consultants, 2015) was completed for the proposed project and did not identify any archaeological sites or historic properties recommended eligible for the National Register of Historic Places. A Historic and Cultural Resources Memo (Stantec, 2022) was completed for the proposed project to provide an updated cultural resources review and recommended the proposed project would have no effect on cultural resources.

The MSB found that no historic properties would be affected by the Proposed Project and the ADNR, Office of History and Archaeology concurred with the finding on April 19, 2016. Since that time, the DOT&PF has updated the design and slightly adjusted the APE and an updated finding of no historic properties affected was sent to ADNR, Office of History and Archaeology, Alaska State Historic Preservation Office (SHPO) on June 16, 2022 and other consulting parties (MSB, City of Wasilla, Cook Inlet Region Inc., Knikatnu Inc., Knik Tribe, Chickaloon Moose Creek Native Association, Chickaloon Native Village, and the Wasilla-Knik Historical Society) and concurrence from the SHPO was received on July 8, 2022.

The SHPO concurred with DOT&PF's finding of no effect on July 11, 2023. The CVTC responded on July 1, 2023 that they disagreed with the finding of effect, but did not identify any specific cultural resources or historic sites of traditional religious and/or cultural importance within the APE in their response. See attached documents for a history of the Section 106 consultation process, including the government to government consultation between FHWA and CVTC.

Attachments

- CE_106_Consultation_Responses_and_Survey_Documents_Final.pdf CFHWY00562.pdf

E. Section 4(f)/6(f) Impacts	**Yes**	**No**
1. Section 4(f) (23 CFR 774)		
a. Was detailed Section 4(f) resource identification conducted for this project, other than that required for Section 106 compliance?	☑	☐
b. Does a Section 4(f) resource exist within or adjacent to the project area?	☐	☑
2. Section 6(f) (36 CFR 59)		
a. Does a Section 6(f) Land and Water Conservation Fund Act (LWCFA) resource exist within or adjacent to the project area?	☐	☑

Summary
Summarize Section 4(f)/6(f) involvement, if any.

No Section 4(f) or 6(f) properties would be impacted by the proposed project. Additionally, LWCFA funds are not used for the proposed project; therefore, Section 6(f) is not applicable.

F. Contaminated Sites and Hazardous Materials Impacts	Yes	No
1. Include source, link, and date accessed of databases used.		
Alaska Department of Environmental Conservation (ADEC), Division of Spill Prevention and Response, Contaminated Sites Database. Source: https://dec.alaska.gov/applications/spar/publicmvc/csp/search. Accessed: June 14, 2022.		
2. Are there known or potentially contaminated sites within or adjacent to the existing ROW?	☐	☑
3. Would a documented hazardous material site be acquired?	☐	☑
4. Are there contaminated sites within 1,500 feet of where excavation dewatering is anticipated?	☐	☑

Summary
Summarize the contaminated site impacts and mitigation, if any.

A review of the ADEC Contaminated Sites Database did not identify any contaminated sites within or adjacent to the proposed project study area.

G. Floodplain Impacts (23 CFR 650, Subpart A)	Yes	No
1. Does the project encroach into a mapped base floodplain or a potential unmapped base floodplain?	☑	☐

Attachments

- Appendix A.pdf CFHWY00562.pdf
- LHS CFHWY00562.pdf
- Public Involvement Documentation CFHWY00562.pdf

a. Does the project encroach into a regulatory floodway?	☐	☑
b. Would the proposed action increase the base flood elevation (BFE) one-foot or greater, or any rise in a regulatory floodway?	☐	☑
c. Is there a longitudinal encroachment into the 100-year floodplain?	☐	☑
d. Is there significant encroachment as defined by 23 CFR 650.105(q)?	☐	☑
2. Does the project conform to local flood hazard requirements?	☑	☐
3. Is the project consistent with E.O. 11988 (Floodplain Protection)?	☑	☐

Summary
Summarize floodplain impacts and describe any temporary encroachment(s) and functionally dependent use(s).

The Federal Emergency Management Agency, Flood Insurance Rate Map for the Matanuska-Susitna Borough, Alaska (panels #02170C8055F and #02170C8060F, effective 9/27/2019) was reviewed and no mapped floodplains were identified within the proposed project limits.

The proposed project includes replacement of 2 culverts in the eastern portion of the project. DOT&PF identified the need to conduct a location hydraulic study (LHS) for both culverts in order to complete construction of the proposed project. The LHS is attached and a summary of findings from the LHS is below.

One unmapped floodplain exists on the north side of Beverly Lake Road adjacent to two small stream crossings of Beverly Lake Road, and an additional unmapped floodplain exists running east-west crossing Wyoming Road north of the intersection with Seldon Road. National Flood Insurance Program maps (LHS, Figure 2) shows an additional crossing west of the Wyoming/Seldon intersection, but wetland delineation efforts (LHS, Figure 5) show no stream visible in the project area at that location. Additional culverts would be installed at appropriate locations throughout the project area and adequately sized to pass the base flood with no adverse impacts.

Attachments

- Notice of Intent to Begin Engineering and Environmental Studies.pdf CFHWY00562.pdf

H. <u>Wetland and Waterbody Impacts</u>	**Yes**	**No**
1. Would the project affect wetlands or other Waters of the U.S. (WOTUS), as defined by the U.S. Army Corps of Engineers (USACE) (Section 404).	☑	☐
2. Wetlands?	☑	☐
a. Are the wetlands delineated in accordance with the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0) Sept. 2007"?	☑	☐
b. Estimated area of wetland involvement (acres): 3.9		
c. Estimated fill quantity: 21,400 cubic yards		
d. Estimated dredge quantities: 10,400 cubic yards		
e. Wetlands Finding		

Attachments

- appendix_c1_wetdel_rpt_appen.pdf CFHWY00562.pdf
- appendix_c2_wetdel_photos.pdf CFHWY00562.pdf

i. Are there practicable alternatives to the proposed construction in wetlands?	☐	☑
ii. Does the project include all practicable measures to minimize harm to wetlands?	☑	☐
iii. Only practicable alternative: Based on the evaluation of avoidance and minimization alternatives, there are no practicable alternatives that would avoid the project's impacts on wetlands. The project includes all practicable measures to minimize harm to the affected wetlands as a result of construction.	☑	☐
3. Waters?	☑	☐
a. Estimated fill quantities below:		

H. Wetland and Waterbody Impacts	**Yes**	**No**
OHW: 21,400 cubic yards		
MHW: 21,400 cubic yards		
HTL: 21,400 cubic yards		
b. Estimated dredge quantities: 10,400 cubic yards		
4. Does the project involve work within or over navigable waters as defined by the USACE (Section 10)?	☐	☑
5. Proposed waterbody involvement:	☑	☐
• Culvert		
6. Is a USACE authorization anticipated?	☑	☐
• Nationwide Permit		
7. Will the project involve navigable waters as defined by the U.S. Coast Guard (USCG) (Section 9)?	☐	☑
8. Will the project affect a designated Wild and Scenic River or land adjacent to a Wild and Scenic River, including those on the Nationwide Rivers Inventory?	☐	☑

Summary
Summarize wetland and waterbody impacts and mitigation, if any.

Multiple wetland delineations and wetland field reconnaissance efforts have been completed for the proposed project. Wetlands field reconnaissance was completed in September 2013, August 2014, and a wetland delineation was completed in July 2015 to field verify existing mapped wetlands published in Cook Inlet Wetlands (Gracz, 2007). The wetland delineation focused on examining Cook Inlet Wetlands (Gracz, 2007) boundaries, and verifying stream locations within the proposed project ROW. Additionally, an updated wetland delineation was completed in June 2022 for the revised proposed project ROW and to verify previous wetland delineation boundaries.

The findings of the updated wetland delineation (June 2022) are included in the Wetlands and Waters Delineation Report (Appendix C). Development activities from construction of the proposed project would impact 3.89 acres of wetlands and/or waters of the U.S. under USACE jurisdiction. According to the functions they provide, high value wetlands include palustrine emergent (0.35 acre impacted) and scrub-shrub (2.02 acres impacted), and moderate value wetlands include palustrine forested (1.51 acre impacted). Additionally, high value streams include intermittent streams (0.01 acre impacted).

A Preliminary Jurisdictional Determination of the delineated wetland and upland boundaries was received from the USACE on February 22, 2016 and an approved Nationwide Permit (NWP) 14 (Linear Transportation Projects) was issued to the MSB on April 29, 2016 for unavoidable impacts to 0.84 acre of wetlands. Since that time the proposed project has been refined and a new USACE wetland permit, NWP 23 (Approved Categorical Exclusions), will be applied for prior to construction.

I. Fish and Wildlife Impacts	**Yes**	**No**
1. Anadromous and resident fish habitat.		

I. **Fish and Wildlife Impacts**	Yes	No
a. Include source, link, and date accessed of databases used.		
Alaska Department of Fish and Game (ADF&G), Alaska Fish Resource Monitor. Source: https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive. Accessed: July 8, 2022.		
b. Is anadromous or resident fish habitat present in project area (Title 16.05.841 and 16.05.871)?	☐	☑
2. Essential Fish Habitat (EFH).		
a. Include source, link, and date accessed of databases used.		
National Oceanic and Atmospheric Administration Fisheries, Essential Fish Habitat Mapper. Source: https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper. Accessed: July 8, 2022.		
b. Is EFH present in project area?	☐	☑
3. Threatened and Endangered (T&E) Species		
a. Include source, link, and date accessed of databases used.		
USFWS, Information for Planning and Consultation (IPaC). Source: https://ipac.ecosphere.fws.gov/. Accessed: June 14, 2022.		
b. Are listed threatened or endangered species present in the project area?	☐	☑
4. Marine Mammals.		
a. Is the project located in the marine environment?	☐	☑
5. Wildlife Resources:		
a. Is the project in an area of high wildlife/vehicle accidents?	☐	☑
b. Would the project bisect migration corridors?	☐	☑
c. Would the project segment habitat?	☑	☐
6. Bald and Golden Eagle Protection Act.		
a. Include source, link, and date accessed of databases used.		
1) United States Fish and Wildlife Service (USFWS), Alaska Bald Eagle Nest Atlas. Source: https://gis.data.alaska.gov/maps/d0be8220447747f2bb25e43a36513482/about. Accessed: June 29, 2022. 2) Stantec, Eagle Nest Survey, June 29, 2022 (Appendix D).		
b. Is the project visible from an eagle nesting tree?	☐	☑
c. Is the project within 330 feet of an eagle nesting tree?	☐	☑
d. Is the project within 660 feet of an eagle nesting tree?	☐	☑

I. Fish and Wildlife Impacts	Yes	No
e. Will the project require blasting or other activities that produce extreme loud noises within 1/2 a mile from an active nest?	☐	☑
f. Is an eagle permit required?	☐	☑
7. Is the project consistent with the Migratory Bird Treaty Act?	☑	☐

Summary
Summarize fish and wildlife impacts and mitigation, if any.

There are no anadromous or resident fish streams identified within the proposed project study area by the ADF&G Fish Resource Monitor (Accessed online July 8, 2022 at https://adfg.maps.arcgis.com/apps/MapSeries/index.html?appid=a05883caa7ef4f7ba17c99274f2c198f). As part of the previous Seldon Phase II Extension project with MSB as the project proponent a fish trapping survey was conducted in 2013 to confirm fish presence/absence by using baited minnow traps placed in streams within the proposed project study area. The traps were soaked for at least 6 hours within each stream and no anadromous or resident fish species were trapped.

Portions of the proposed project would be located within areas that would require vegetation clearing prior to construction. The USFWS recommended time period to avoid vegetation clearing during bird nesting would be adhered to (May 1 - July 15). If vegetation clearing would need to occur during this time period a ground survey to identify nests would be conducted for the affected area prior to construction. Vegetation clearing limits would encompass approximately 10 feet on either side of the slope limits. The proposed project would connect an existing residential development with an existing arterial road. The proposed project is not in an area of subsistence or wildlife migration corridors. The proposed project is not anticipated to affect wildlife resources.

The proposed project would construct a new road in a mixed-use development surrounded by other existing roads, residences, and several businesses. Wildlife, including moose, will be able to cross the road to reach the segmented habitat and vegetation will be cleared beyond the road shoulders to allow for appropriate sight distance and avoidance of wildlife-vehicle collisions. ADF&G and USFWS were sent an agency scoping letter regarding the proposed project, and neither agency responded with comments or concerns about the project segmenting wildlife habitat.

Steve Lewis, USFWS Alaskan raptor wildlife biologist, recommended a 660-foot buffer of the project footprint to complete an accurate eagle nest survey. Two eagle nest surveys have been conducted for the proposed project study area. One aerial survey was conducted in 2013 and no eagle or other raptor nests were observed. A second aerial survey was conducted June 2022 and no eagle or other raptor nests were observed (Appendix D). The proposed project would not affect eagles or their nests. If a new eagle nest is observed prior to construction in the proposed project vicinity the USFWS would be consulted.

Attachments

- appendix_d_eaglenestsurvey.pdf CFHWY00562.pdf

J. Invasive Species Impacts	Yes	No
1. Include source, link, and date accessed of databases used.		

University of Alaska Anchorage, Alaska Center for Conservation Science, Alaska Exotic Plants Information Clearinghouse (AKEPIC). Source: https://accs.uaa.alaska.edu/invasive-species/non-native-plants/. Accessed: June 14, 2022.

2. Are invasive species present in project area?	☑	☐
3. Does the project include all practicable measures to minimize the introduction or spread of invasive species, making the project consistent with E.O. 13112 (Invasive Species)?	☑	☐

Summary
Summarize invasive species impacts and mitigation, if any.

A review of the AKEPIC indicates 12 non-native plants in an approximate 1-acre area near Pittman Road at Cloudy Lake, adjacent to the project area. There is the potential for some invasive species to occur. To minimize the introduction of additional invasive species to the area, the contractor would comply with Executive Order 13112 to mitigate invasive species by; 1) ensuring that ground disturbing activities are minimized, and disturbed areas are re-vegetated with seed recommended for the region by Alaska Department of Natural Resources (ADNR)'s A Revegetation Manual for Alaska; and 2) erosion and sediment control materials would be locally produced products to minimize potential importation of new propagules from outside Alaska.

K. Water Quality Impacts	**Yes**	**No**
1. Will there be temporary degradation of water quality?	☑	☐
2. Is a public or private drinking water source or protection area within or adjacent to the project?	☑	☐

Attachments

- appendix_f_scoping.pdf CFHWY00562.pdf

3. Would the project result in a discharge of storm water to a WOTUS? [40 CFR 230.3(o)]	☐	☑
4. Would the project discharge storm water into or affect an ADEC-designated Impaired Waterbody?	☐	☑
5. Will the project involve more than one (1) acre of ground-disturbing activities?	☑	☐
6. Is there a Municipal Separate Storm Sewer System (MS4) APDES permit, or will runoff be mixed with discharges from an APDES permitted industrial facility?	☐	☑

Summary
Summarize the water quality impacts and mitigation, if any.

A review of the Alaska Department of Environmental Conservation (ADEC) Drinking Water Protection Areas Map indicates the proposed project is located near two Public Water Systems (PWS) (AK2224078 and AK2225967). The proposed project intersects the drinking water protection footprints of these Public Water Systems. DOT&PF has initiated consultation with the drinking water division of ADEC regarding this issue and ADEC provided a list of recommendations to DOT&PF to protect these PWS during construction (Appendix F). DOT&PF will provide the construction project manager with this recommendation list when the project is certified for construction.

The Proposed Project will comply with the Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit, regulated by the ADEC, for storm water discharges associated with construction. Prior to construction the Contractor will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The Contractor will use Best Management Practices (BMPs) to protect water quality, including minimization of erosion and sediment runoff during construction.

L. Air Quality Impacts	**Yes**	**No**
1. Will there be temporary degradation of air quality?	☑	☐
2. Is the project located in an air quality maintenance area or nonattainment area (CO or PM-10 or PM-2.5)?	☐	☑

Summary
Summarize air quality impacts and mitigation, if any.

The Alaska Department of Environmental Conservation, Division of Air Quality, Air Non-Point and Mobile Sources website accessed on June 17, 2022 found the proposed project study area is not located within an air quality maintenance or nonattainment area. Air quality impacts from construction are anticipated to be minimal and temporary and no long-term air quality impacts are anticipated.

M. Noise Impacts (23 CFR 772)	**Yes**	**No**
1. Will there be temporary noise impacts?	☑	☐
2. Does the project involve any of the following Type I project actions listed below (23 CFR 772.5)? • Construction of highway on a new location.	☑	☐
3. Are any lands listed in 23 CFR 772.11(c) adjacent to the project? Identify all below. • Category B: Residential. • Category C (exterior): Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.	☑	☐
4. Does the noise analysis identify a noise impact?	☑	☐

Summary
Summarize noise impacts and mitigation, if any.

A Noise Discipline Report (Michael Minor & Associates, 2022) for the proposed project was completed (Appendix E) to provide a traffic noise impact and abatement analysis meeting the requirements of the Federal Highway Administration (FHWA) and the DOT&PF, and in accordance with DOT&PF 2018 Noise Policy. The noise study consisted of an on-site inspection and noise monitoring. The Noise Discipline Report concluded that noise from construction would be similar to other highway construction projects and that typical DOT&PF construction noise mitigation measures could be included in the project specifications such as; 1) No construction shall be performed within 1,000 feet of an occupied dwelling unit on Sundays, legal holidays, or between the hours of 10 p.m. and 7 a.m. on other days, without the approval of the DOT&PF construction project manager, 2) All equipment used shall have sound-control devices no less effective than those provided on the original equipment. No equipment shall have unmuffled exhaust, and 3) All equipment shall comply with pertinent equipment noise standards of the U.S. Environmental Protection Agency. No noise abatement measures were considered since there are no receivers that meet the impact noise abatement criteria (NAC) of 66 decibels (dB) nor any substantial increases of +15 dB.

Attachments

- appendix_e_noisereport.pdf CFHWY00562.pdf

N. Social and Economic Impacts	**Yes**	**No**
1. Would the project affect neighborhoods or community cohesion?	☑	☐
2. Would the project affect school boundaries, recreation areas, churches, businesses, police and fire protection, etc.?	☐	☑
3. Would the project affect the elderly, handicapped, non-drivers, transit-dependent, minority and ethnic groups, or the economically disadvantaged?	☑	☐
4. Would the project affect travel patterns and accessibility (e.g., vehicular, commuter, bicycle, or pedestrian)?	☑	☐

N. Social and Economic Impacts	Yes	No
a. Would the project include temporary delays and detours of traffic?	☑	☐
5. The project will have adverse economic impacts on the regional and/or local economy, such as effects on development, tax revenues and public expenditures, employment opportunities, accessibility, and retail sales.	☐	☑
6. The project will adversely affect established businesses or business districts.	☐	☑
a. Would the project have temporary impacts on businesses?	☐	☑

Summary
Summarize social and economic impacts and mitigation, if any.

The proposed project is not anticipated to adversely affect neighborhoods, or community cohesion. The proposed project would provide neighborhood residents greater accessibility and community connection with major arterials for easier access to city amenities.

The proposed project is not anticipated to adversely affect travel patterns and accessibility. The proposed project would provide improved accessibility to other areas of the Matanuska Valley to both motorists and pedestrians. Additionally, the proposed project would provide a separated pedestrian pathway for safer pedestrian travel.

The proposed project would not disproportionately affect the elderly, handicapped, nondrivers, transit-dependent, minority and ethnic groups, or the economically disadvantaged. The Environmental Protection Agency, Environmental Justice Screening and Mapping Tool (accessed online September 15, 2022 at https://ejscreen.epa.gov/mapper/ejscreen_v1/index.html) does not identify any demographics that greatly exceed state or national averages. The proposed project would provide a faster connection to healthcare and to access supplies/needs.

The proposed project would create accessibility to currently undeveloped properties along the proposed road corridor which has the potential to provide economic land development opportunities. The proposed project is not anticipated to result in negative economic impacts.

III. Comments and Coordination

A. Public Involvement	Yes	No
1. Was public involvement for project completed?	☑	☐
2. Was the project public noticed?	☑	☐
a. Newspaper name and date of notice:	☑	☐

Mat-Su Valley Frontiersman, 2/2/2022

Anchorage Daily News, 1/30/2022

Attachments

- Seldon Road Extension Phase II_ADN.pdf CFHWY00562.pdf
- Seldon Road Extension Phase II_Frontiersman.pdf CFHWY00562.pdf

A. Public Involvement	**Yes**	**No**
b. Alaska Online Public Notice date:	☑	☐

01/28/2022

Attachments

- Notice of Intent to Begin Engineering and Environmental Studies.pdf CFHWY00562.pdf

c. Were public notices completed for specific resource impacts (e.g., floodplain, Section 4(f))?	☑	☐

Attachments

- NOI_Floodplain.pdf CFHWY00562.pdf

3. Was a public meeting held?	☑	☐

a. Date(s), time(s), and location(s):

Mat-Su Transportation Fair, 9:00 am, 10/20/2022;

Meadow Lakes Community Council, Zoom, 7:00 pm, 10/12/2022;

Meadow Lakes Elementary, 5:00 pm, 11/13/2014

4. Is there any unresolved controversy on human, natural, or economic grounds?	☐	☑

Summary
Summarize public comments and coordination efforts for this project. Discuss pertinent issues raised.

Public Scoping

A Public Involvement Plan was developed for the Proposed Project and includes public involvement scheduled from Fall 2022 through Fall 2023 (Appendix F). A public meeting was held via zoom October 12, 2022 with the Meadow Lakes Community Council and the project team presented a project overview, project cost, schedule, and provided an opportunity for public comments. A presentation outline from that meeting is included in Appendix F. Additionally, the project team attended the Transportation Fair October 20, 2022 and held a table to provide information, a fact sheet (Appendix F), and answer questions on the proposed project. Public involvement documentation during January 2022-December 2022 public scoping is included in the attached documents. The topic of comments included Beverly Lake Road traffic/impacts, MSB involvement, construction timeline, associated costs, fish involvement, flooding issues, future road extension, road ownership, pedestrian pathway, right-of-way acquisition, roundabout intersection, school crossing, and trucking use. Detailed comments received and responses to comments are included in the attached documents.

Prior to the utilization of federal funding and initiation of the project under NEPA, the MSB was the project proponent and completed public scoping. A public meeting was held on November 13, 2014 from 6:00 p.m. to 8:30 p.m. at Meadow Lakes Elementary, Wasilla, Alaska. A public meeting notice (Appendix F) was mailed to all residents and stakeholders and emailed to stakeholders within the vicinity of the proposed project. The meeting was also advertised in the Frontiersman (Appendix F) and local radio stations. The public meeting was an open house format where residents and stakeholders had the opportunity to discuss the proposed project with the MSB Project Manager and other project staff at different input and display stations. Comment forms were provided to those in attendance at the public meeting.

A summary of the public meeting, including verbal comments from residents and stakeholders, are included in Appendix F. In addition, a website was developed for the Proposed Project through DOT&PF and MSB and can be accessed at http://www.seldon-phase2.com and http://www.matsugov.us/projects/seldon-road-extension. A view of the websites are included in Attachment F.

Attachments

- 20230314_Seldon_Issue Response Summary_v3 (1).pdf CFHWY00562.pdf
- 20230314_Seldon_PI Chronology_v2_sk (1).pdf CFHWY00562.pdf
- 20230315 Seldon PI Original Documentation_sk (1).pdf CFHWY00562.pdf

B. Agency Involvement	**Yes**	**No**
1. Was an agency scoping conducted?	☑	☐

4/13/2022 & 11/11/2014

Attachments

- appendix_f_scoping.pdf CFHWY00562.pdf

2. Was an agency scoping meeting held?	☐	☑
3. Was a field review completed with agencies?	☐	☑

Summary
Summarize agency coordination efforts for this project.

Agency Scoping

Agency scoping included an informal pre-scoping email in addition to formal scoping letters sent to applicable agencies

on April 13, 2022 and November 11, 2014(Appendix F). The project purpose and need, a description of the proposed project, potential environmental resources affected were included in the scoping materials. Additionally, an invitation to attend the November 13, 2014 public meeting was included in the November 11, 2014 scoping letter; however, no agency members attended the meeting. One agency comment was received from the USFWS on August 30, 2014 (Appendix F) that stated no federally listed or proposed species and/or designated or proposed critical habitat is within the proposed project area and no further coordination with USFWS is required.

In response to the April 13, 2022 agency scoping letters, comments were received from the Alaska Department of Environmental Conservation (ADEC) Air Quality Division, the ADEC Contaminated Sites Program, and the Alaska Department of Fish and Game (ADF&G) Habitat Section. All comments received are summarized below and included in the attached Appendix F.

The ADEC Air Quality Division commented on April 20, 2022, 1) The project does not require a conformity analysis; 2) If open burning is used to dispose of organic debris procedures to minimize smoke must be used and obtain necessary permits; and 3) Construction activities should follow 18 AAC 50.045(d) to prevent particulate matter from being emitted.

The ADEC Contaminated Sites Program commented on April 21, 2022 that they do not have any comments on the proposed project.

The ADF&G Habitat Section commented on May 5, 2022 that the proposed project does not cross any anadromous streams would be crossed and no resident fish streams would be affected by the proposed project and no ADF&G permit would be required.

IV. Permits and Authorizations

A. **Permits and Authorizations**	Yes	No
1. USACE, Section 404/10 Includes Abbreviated Permit Process, Nationwide Permit, and General Permit	☑	☐
2. Coast Guard, Section 9	☐	☑
3. ADF&G Fish Habitat Permit (Title 16.05.871 and Title 16.05.841)	☐	☑
4. Flood Hazard	☐	☑
5. ADEC Non-domestic Wastewater Plan Approval	☑	☐
6. Requires 401 Cert	☑	☐
7. ADEC APDES	☑	☐
8. Eagle Permit	☐	☑
9. Incidental Take Authorization	☐	☑
10. Local (Borough or City) permit (e.g., noise)	☑	☐
Mat-Su Borough Temporary Noise Permit		
10. Other Permits	☐	☑

Summary

The permits listed above are anticipated to be required for construction of the proposed project.

V. Environmental Commitments

A. **Environmental Commitments and Mitigation Measures [23 CFR 771.109(b)]**	Yes	No
1. Are there project-specific environmental commitments for this project?	☐	☑

Summary
DOT&PF and their Contractor(s) shall:

DOT&PF anticipates that there are no *project specific* environmental commitments or mitigation measures needed to develop the proposed project.

VI. Environmental Documentation Approval

A. **Environmental Documentation Approval**	Yes	No
1. Do any unusual circumstances exist, as described in 23 CFR 771.117(b)?	☐	☑
2. Does the project meet the criteria of one of the following DOT&PF Programmatic Approvals authorized in the Nov. 13, 2017 "Chief Engineer Directive - Programmatic Categorical Exclusions"?	☐	☑

Summary

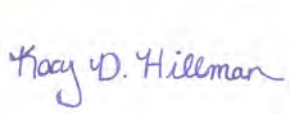
No unusual circumstances associated with the proposed project exist.

VII. (e) Constraints

A. **23 CFR 771.117(e) Constraints**	Yes	No
Does the project involve any of the following? Supporting information for responses must be provided in the impact discussions for each of the applicable impact categories. *If YES is selected for any item, the project cannot be approved under 23 CFR 771.117(c)(26-28).*		
1. An acquisition of more than a minor amount of right-of-way or that would result in any residential or non-residential displacements.	☐	☐
2. An action that needs a bridge permit from the U.S. Coast Guard, or an action that does not meet the terms and conditions of a U.S. Army Corps of Engineers nationwide or general permit under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899.	☐	☐
3. A finding of "adverse effect" to historic properties under the National Historic Preservation Act.	☐	☐
4. The use of a resource protected under 23 U.S.C. 138 or 49 U.S.C. 303 [Section 4(f)] except for actions resulting in de minimis impacts.	☐	☐
5. A finding of "may affect, likely to adversely affect" threatened or endangered species or critical habitat under the Endangered Species Act.	☐	☐
6. Construction of temporary access, or the closure of an existing road, bridge, or ramps, that would result in major traffic disruptions.	☐	☐
7. Changes in access control.	☐	☐
8. A floodplain encroachment other than functionally dependent uses (e.g. bridges, wetlands) or actions that facilitate open space use (e.g. recreational trails, bicycle and pedestrian paths).	☐	☐
9. Construction activities in, across or adjacent to a river component designated or proposed for inclusion in the National System of Wild and Scenic Rivers.	☐	☐

Summary

Environmental Documentation Approval Signatures

Prepared by:  Date: 3/21/2023

Kacy Hillman

Kacy Hillman, Environmental Scientist

Reviewed by:  Date: 3/21/2023

Chris Bentz

Project Manager

Approved by:  Date: 3/22/2023

Brian Elliott

Central Region Environmental Manager

Recommended by:  Date: 3/22/2023

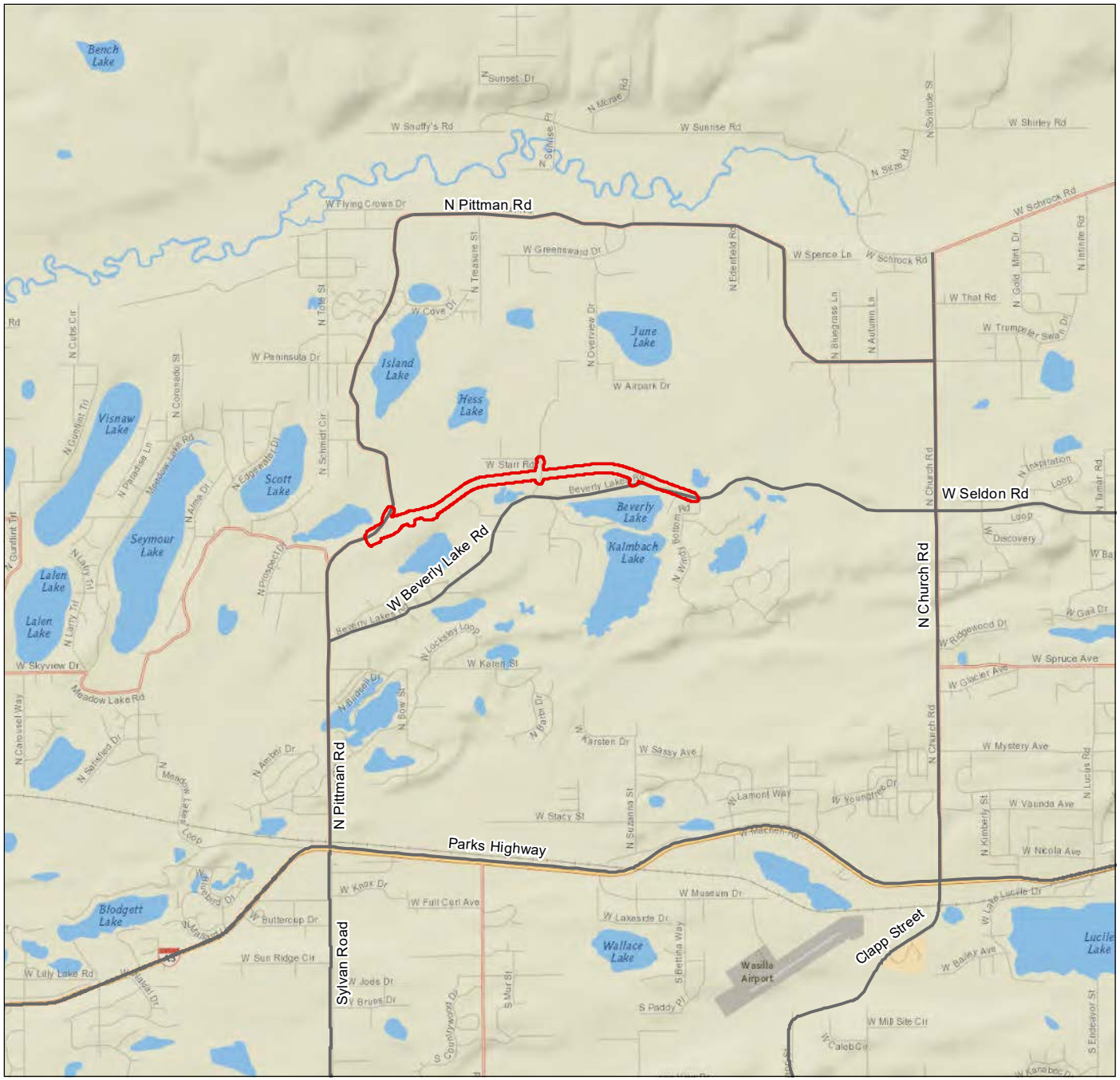
Matthew Dietrick

NEPA Manager

APPENDIX A

Figures

1. Location and Vicinity Map
2. Alignment Alternatives
3. Typical Section
4. Proposed Alignment
5. Wetlands and Waters Overview



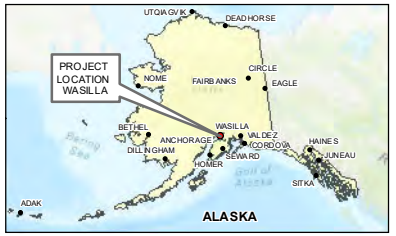
Seldon Road Extension Phase II
Proposed Project

N

0 0.5 1 Miles
(At original document size of 8.5x11)
1:63,360

Notes

1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Data Sources:
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



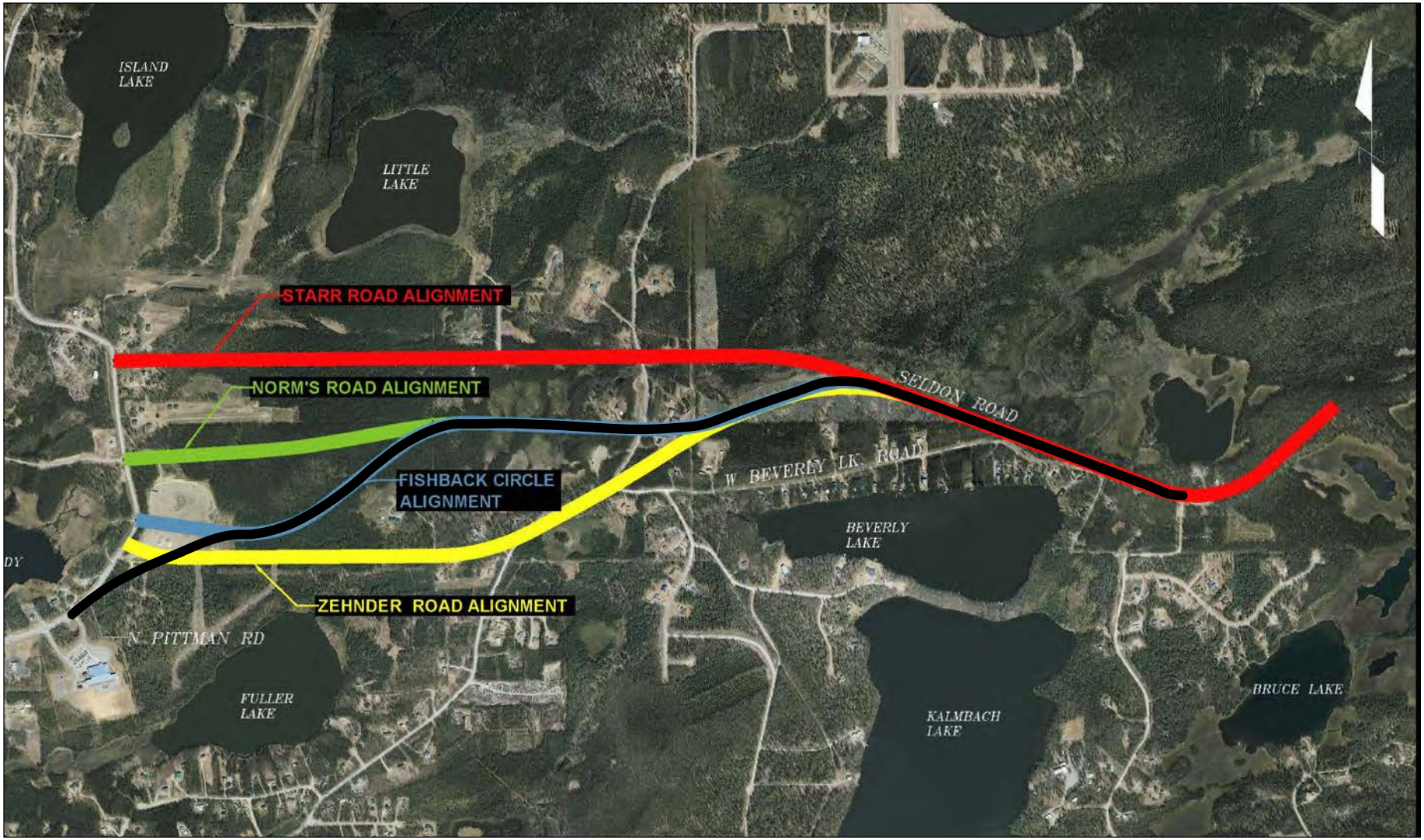
Project 2047079800

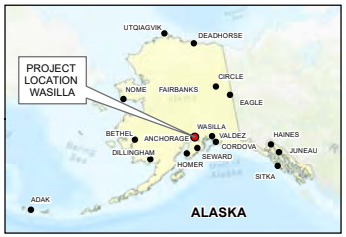
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

Figure No.
1

Title
Seldon Road Extension Phase II Location & Vicinity Map

U:\2047079800\gis\mxd\CAT-X\2047079800_Fig-01_CAT-X_Loc_Vicinity_Map.mxd Revised: 2023-02-24 By: cpannone





PROPOSED ALIGNMENT*

*Alignments shown are a graphical representation of approximate location and route and are not representative of design accuracy.

N

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

Notes

1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Data Sources: Mat-Su Borough Cadastral Parcels Roads
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Project 2047079800

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

Figure No.
2

Title
Seldon Road Extension Phase II Alignment Alternatives

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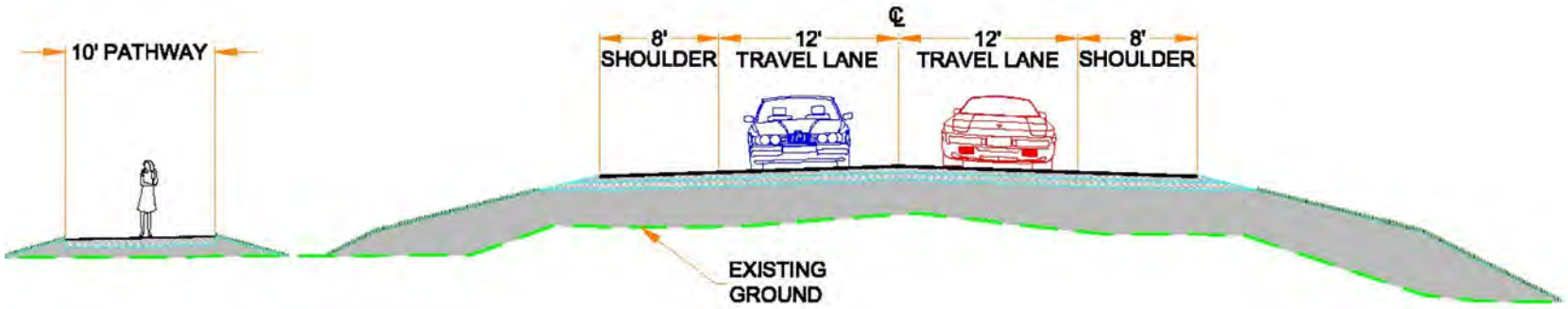
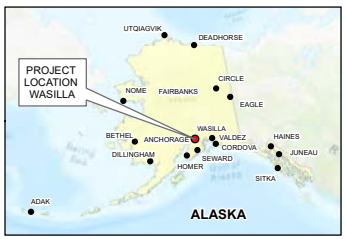


TYPICAL SECTION



N

0 1,000 2,000 Feet

(At original document size of 8.5x11)
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1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Data Sources: Mat-Su Borough Cadastral Parcels Roads
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Project 2047079800

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
& PUBLIC FACILITIES

Figure No.
3

Title
Seldon Road Extension Phase II
Church Road to Pittman Road
Typical Section

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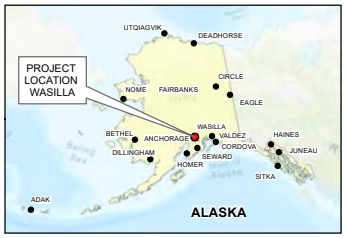

PROPOSED ROAD AND PEDESTRIAN PATH

Parcel Lot Lines

N

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

Notes

1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
2. Data Sources: Mat-Su Borough Cadastral Parcels Roads
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Project 2047079800

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

Figure No.
4

Title
Seldon Road Extension Phase II Proposed Alignment

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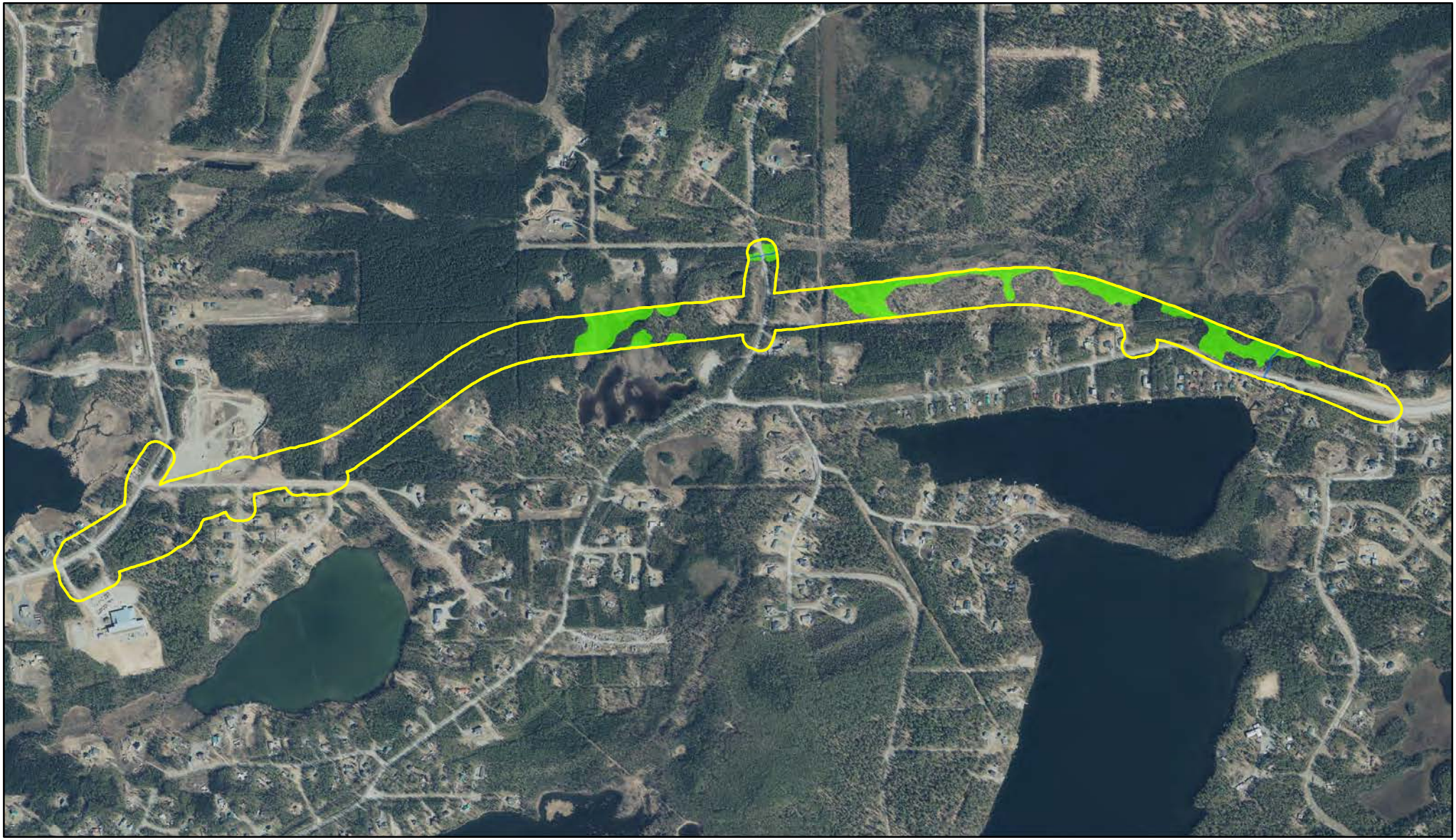
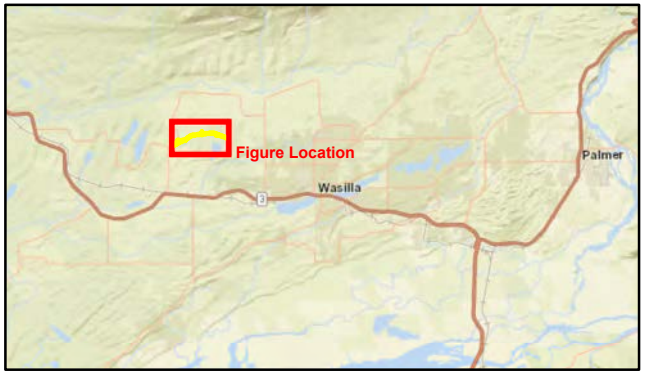




Study Area

Aquatic Resource Type

Stream

Wetland

0 1,000 2,000 Feet

(At original document size of 8.5x11)

1:14,000 1 inch = 1,166.67 feet

N W E S

Client

AK Dept. of Transportation & Public Facilities

Project

Seldon Road Extension Phase II

Figure

Wetlands and Waters Overview

Figure Number

5

Stantec

APPENDIX B

Section 106

1. Consultation Initiation Letters
2. Response to Consultation Initiation Letters
3. Finding of Effect Letters
4. State Historic Preservation Officer Concurrence

* CONTENT REMOVED FOR CONFIDENTIALITY

APPENDIX C

Wetlands and Waters Delineation Report

Wetlands and Waters Delineation Report

Seldon Road Extension Phase II

CFHWY00562

August 12, 2022

Prepared for:

Alaska Department of Transportation and Public Facilities

4111 Aviation Avenue
Anchorage, AK 99519

Prepared by:

Stantec Consulting Services Inc.
725 East Fireweed Lane Suite 200
Anchorage, AK 99503-2245

WETLANDS AND WATERS DELINEATION REPORT

This document entitled Wetlands and Waters Delineation Report was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of Alaska Department of Transportation and Public Facilities (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by _____

Zach Baer, PWS

Reviewed by _____

Steve Reidsma, PWS

Approved by _____

Victor Ross

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Executive Summary

The Alaska Department of Transportation and Public Facilities required professional services to develop a Wetland and Waters Delineation Report for the Seldon Road Extension Phase II project.

This 2022 report presents the findings of the baseline (current existing conditions) fieldwork for the proposed project footprint plus a 100-foot buffer. This includes the extent of Wetlands and Waters within the study area.

The study area is located in Meadow Lakes, Alaska. The community is located approximately 4 miles west of Wasilla, Alaska and is within the Matanuska-Susitna Borough. Streams and wetlands in the study area are hydrologically connected downstream to Big Lake, which is a Traditional Navigable Water (USACE 2022).

The 2022 study area mapping is based on the criteria in the U.S. Army Corps of Engineers *Wetland Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0)* (USACE 2007), and the *2020 National Wetland Plant List* (USACE 2020a).

Study Area Wetlands and Waters

Status	Acres	Percent of Study Area
Wetlands	15.02	14.4
Waters	0.05	<0.1
Total Wetlands and Waters	**15.07**	**14.4**
Uplands	89.38	85.6
Total	**104.44**	**100.0**

Wetlands account for 15.02 acres (14.4%) of the study area. The majority of wetlands were classified in the Cowardin system (Cowardin et al. 1979) as Deciduous Shrub (33.2 percent of Wetlands and Waters), Coniferous Scrub (21.6 percent of Wetlands and Waters), or Coniferous Forest (20.9 percent of Wetlands and Waters). Slope Hydrogeomorphic wetlands were the dominant wetland classification observed within the study area, with Depressional and Riverine types also observed.

Three streams were found within the study area, accounting for 0.05 acres (<0.1%) of the study area. The total stream length within the study area is 756 feet, or 0.14 miles.

Abbreviations

2007 Supplement	*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region, 2007 Supplement Version 2.0*
AKEPIC	Alaska Exotic Plants Information Clearinghouse
APT	Antecedent Precipitation Tool
CIW	Cook Inlet Wetlands Project
EPA	Environmental Protection Agency
FVP	Field Verification Point
GPS	Global Positioning System
HGM	Hydrogeomorphic Classification
HUC	hydrologic unit code
MLRA	Major Land Resource Area
NHD	National Hydrography Dataset
NRCS	National Resource Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
RPW	Relatively Permanent Waters
SC	Stream Crossing
SPN	Special Public Notice
Stantec	Stantec Consulting Services Inc.
TNW	Traditionally Navigable Waters
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WB	Waterbody
WD	Wetland Determination

1.0 INTRODUCTION

The Alaska Department of Transportation & Public Facilities Central Region is proposing to extend Seldon Road to the west, from North Windy Bottom Road to Pittman Road. Baseline (current existing conditions) fieldwork for the project footprint plus a 100-foot buffer (study area) was conducted in 2022 to determine the extent of Wetlands and Waters.

Field data were collected in June 2022 by Stantec Consulting Services Inc. (Stantec). The field data collected was used in conjunction with topographical base maps, aerial photography, and other data sources to produce the figures and findings presented in this report.

Stantec verifies the evaluation and collection of field data, wetland determinations, and the resulting digital maps and figures were performed in accordance with guidance provided in the U.S. Corps of Engineers (USACE) *Wetland Delineation 1987 Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region, 2007 Supplement Version 2.0* [2007 Supplement] (USACE 2007). The report and figures meet the standards prescribed in USACE Special Public Notice (SPN) 2020-00399: Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports (USACE 2020b). Plant species reporting and analyses were completed using the 2020 National Wetlands Plant List (USACE 2020a).

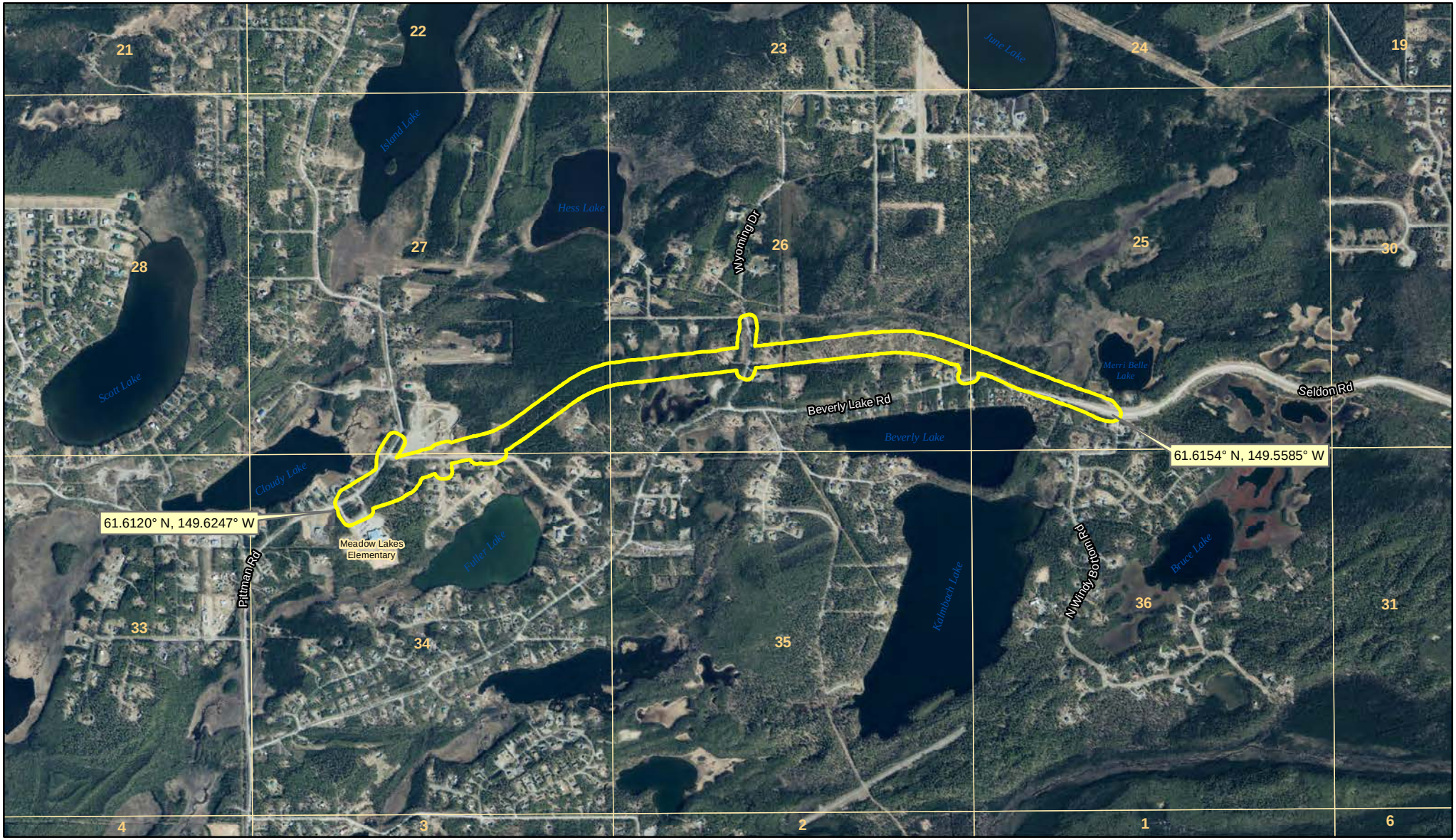
1.1 STUDY AREA LOCATION

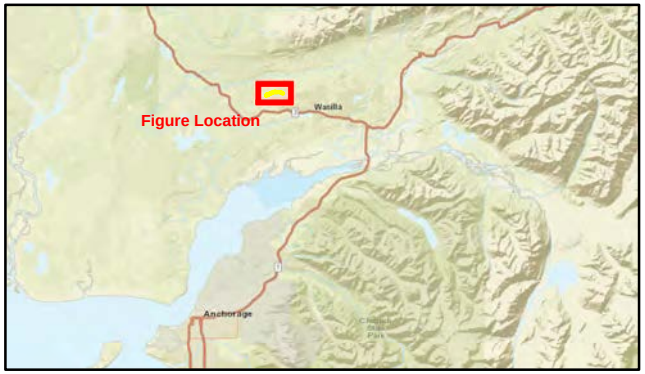
The western boundary of the study area begins near Meadow Lakes Elementary School in the Matanuska-Sustina Borough at latitude 61.6120° N, longitude 149.6247° W. The eastern boundary of the study area is near the western end of the Seldon Road Extension Phase 1 project at the intersection of Seldon Road and North Windy Bottom Road at latitude 61.6154° N, longitude 149.5585° W (Figure 1).

The study area can be found on the Anchorage 1:250,000 U.S. Geological Survey (USGS) quadrangle map and the Anchorage C-7 1:63,360 quadrangle maps. The project is within the Seward Meridian and crosses 4 Public Land Survey System sections. The complete Township Range and Section list is shown in Table 1.

Table 1 Study Area Location

Meridian	Township	Range	Section
Seward	18N	2W	25, 26, 27, 34





Study Area

Public Land Survey Section
(Seward Meridian, T 18N, R 2W)

0 1,000 2,000 3,000 Feet

(At original document size of 8.5x11)

1:24,000 1 inch = 2,000 feet

N
W E
S

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AK Dept. of Transportation & Public Facilities

Project
Seldon Road Extension Phase II

Figure
Location

Figure Number
1

Stantec

2.0 EXISTING DATA AND METHODOLOGY

2.1 EXISTING DATA

Sources of existing data used in developing baseline environmental data include: Cook Inlet Wetlands (CIW) mapping data, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, U.S. Department of Agriculture (USDA) ecoregion and soil survey information, USGS project watersheds and stream data, local climate data, and USFWS and Alaska Department of Fish and Game fish and wildlife data.

2.1.1 Cook Inlet Wetlands

The study area intersects 29.0 acres of wetlands mapped by the CIW project (Table 2). This mapping was conducted at a scale of 1:18,000 in the NAD83 State Plane Alaska 4 projection using aerial imagery collected in 2011. CIW mapping is shown on Figure 2.

Table 2 Cook Inlet Wetlands Mapping

Wetland Type	Acres	Percent Study Area
Discharge Slope	11.0	37.9
Drainageway	0.3	1.0
Kettle	7.0	24.1
Riverine	6.0	20.7
Spring Fen	0.1	0.3
VLD Trough	4.7	16.2
Total	**29.0**	**100.0**

*Apparent inconsistencies in sums are the results of rounding.

2.1.2 National Wetland Inventory

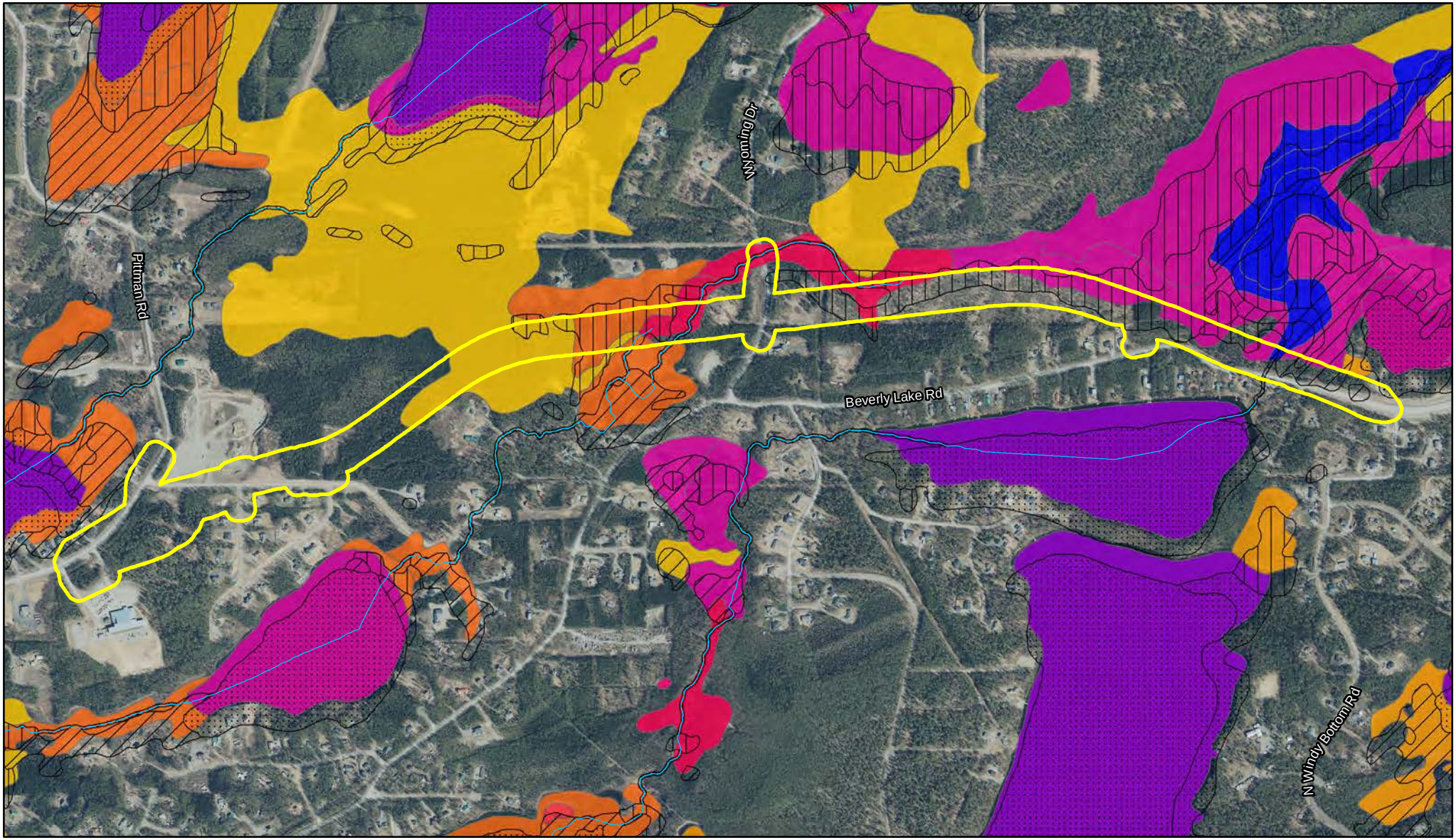
The NWI on-line Wetlands Mapper shows the study area is covered by digital NWI data in NAD83 Albers projection (USFWS 2022a). The area was mapped using 1996 True Color imagery at a scale of 1:24,000. The NWI mapping is offset from Cook Inlet Wetlands mapping and current aerial imagery, most likely due to projection issues with the imagery used by USFWS.

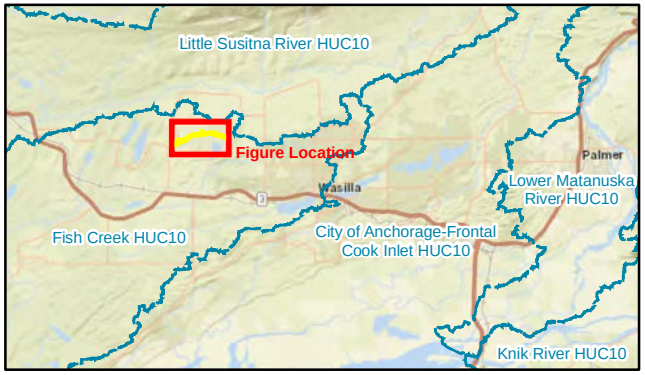
The NWI shows wetlands occupying low-lying areas situated within the study area. Wetlands and Waters types include forested/shrub wetlands, emergent wetlands, streams, and the edge of one lake, and total 27.7 percent of the study area. Figure 2 shows the NWI coverage of the study area. Table 3 lists acres of NWI Wetlands and Waters mapped in the study area.

Table 3 National Wetland Inventory Mapping

NWI Group	NWI Code	Acres	Percent Study Area
Wetlands			
Freshwater Forested/Shrub	PFO4B	1.3	1.2
	PSS1/4B	6.9	6.6
	PSS4/1B	17.1	16.3
Freshwater Emergent	PEM1/SS1B	0.5	0.5
	PEM1/SS1C	3.1	2.9
	PEM1F	0.2	0.2
Wetlands Total		**28.9**	**27.7**
Waters			
Riverine	R5UBH	0.6	0.6
Lake	L2AB3H	0.2	0.2
Waters Total		**0.8**	**0.8**
Wetlands and Waters Total		**29.7**	**28.5**
Uplands	U	74.7	71.5
Total		**104.4**	**100.0**

*Apparent inconsistencies in sums are the results of rounding.





Study Area

NHD Flowline

NWI Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Cook Inlet Wetland Type

- Discharge Slope
- Spring Fen
- VLD Trough
- Floating Island
- Riverine
- Depression
- Kettle
- Lake
- Drainageway

0 1,000 2,000 Feet

(At original document size of 8.5x11)

1:14,000 1 inch = 1,166.67 feet

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Project

Seldon Road Extension Phase II

Figure

NWI, NHD, and CIW Mapping

Figure Number

2

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2.1.3 Major Land Resource Area

The study area is located within the 6.8 million-acre Cook Inlet Lowlands Major Land Resource Area (MLRA; USDA 2006). This MLRA is a broad expanse of gently sloping to rolling plains and low- or moderate-relief hills bordered by the surrounding mountains. Small and medium sized lakes are scattered throughout the part of the MLRA covering the study area. The waters of the MLRA drain to Cook Inlet.

Annual precipitation ranges from 15 to 60 inches, with a climate considered transitional from temperate maritime to subarctic continental (USDA 2006).

Uplands are dominated by white spruce, paper birch, and quaking aspen. Cottonwood are common on flood plains and in seepage areas. Lowlands and areas of peat support stunted spruce, low scrub, and sedge and grass meadows (USDA 2006).

2.1.4 Watersheds

The study area is within one USGS hydrologic unit code (HUC) 10 watershed, Fish Creek (1902040105), and one HUC 12 watershed, Meadow Creek (190204010502) (USGS 2022). The study area watersheds are shown in Figure 2. Hydrologically, water in these watersheds flow via surface and groundwater connections to Big Lake.

2.1.5 Rivers and Streams

USACE Special Public Notice (SPN) 2020-00339 Corps of Engineers Regulatory Program Consultant-Supplied Jurisdictional Determination Reports (USACE 2020b) superseded 2010 guidance (USACE 2010). However, in 2021 the Environmental Protection Agency (EPA) published guidance directing use of pre-2015 Waters of the U.S. instructions (EPA 2021). Therefore, to classify study area streams, this report refers to SPN 2010-45 (USACE 2010).

In the Alaska District SPN 2010-45, USACE asks for data (optional) describing the various tributaries (streams) flowing from or through the project study area, and their connections to traditionally navigable waters downstream. The USACE is responsible for determining the jurisdiction of Waters of the U.S. (wetlands, streams, rivers, lakes), by reviewing connections to downstream navigable waters (USACE 2010).

Traditionally Navigable Waters

Traditionally Navigable Waters (TNW) are defined in SPN 2010-45 as those "…waters which are currently used or were used in the past or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide."

The USACE Alaska District lists the Navigable Waters in Alaska (USACE 1995). Streams running through the study area connect downstream to Big Lake, a TNW.

Relatively Permanent Waters

In addition to identifying TNWs in the project area, non-navigable streams (Relatively Permanent Waters [RPW]) also need to be identified. Non-navigable streams are classified by USACE (2010) in three ways:

Relatively Permanent Non-Navigable Tributaries of Traditional Navigable Waters (Perennial RPW): Non-navigable waters typically flowing year-round or waters having a continuous flow at least seasonally (typically three months). Perennial RPW do not include ephemeral tributaries which flow only in response to precipitation and intermittent streams which do not typically flow year-round or have continuous flow at least seasonally.

Seasonal Relatively Permanent Waters (Seasonal RPW): Non-navigable, seasonal RPW—intermittent streams which do not typically flow year-round or have continuous flow at least seasonally.

Non-Relatively Permanent Waters (Non-RPW): Non-navigable tributaries that do not typically flow year-round or do not have continuous flow at least seasonally.

National Hydrography Dataset

The USGS National Hydrography Dataset (NHD; USGS 2022) catalogs two unnamed perennial streams that flow through the study area near the crossing of Wyoming Drive (Figure 2).

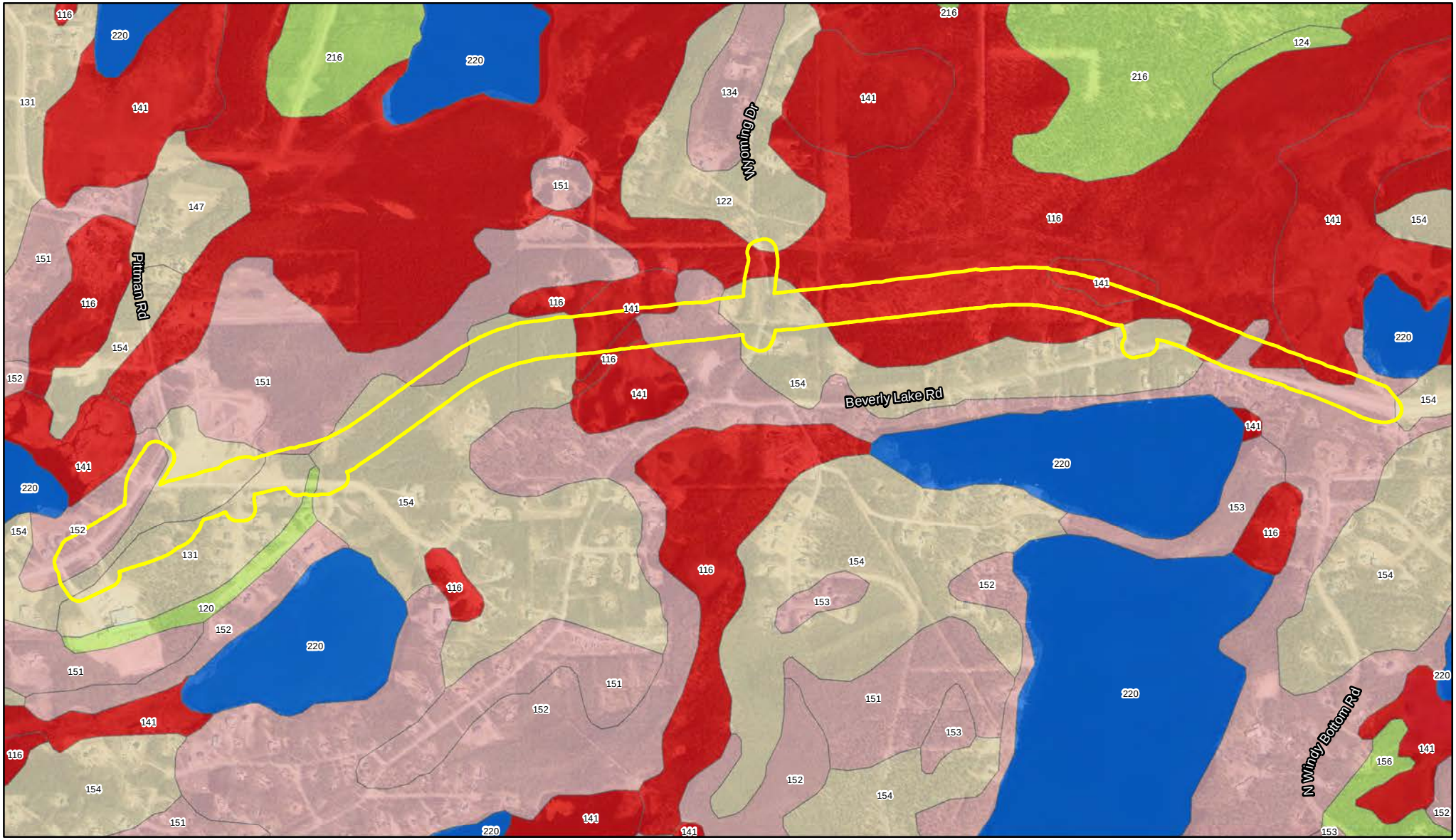
2.1.6 Soil Survey

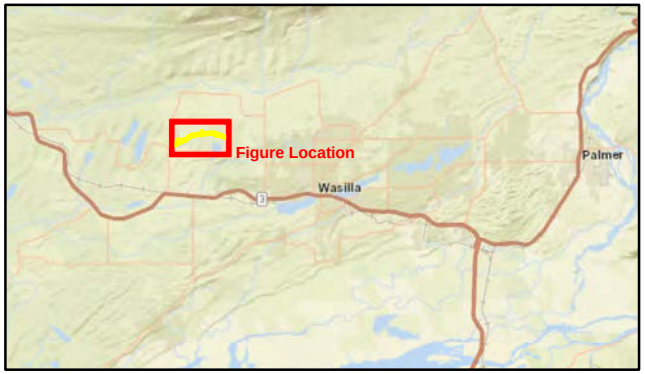
The Soil Survey of Matanuska-Susitna Valley Area, Alaska (USDA 1998) covers 1.5 million acres in the Matanuska-Susitna Borough. Table 4 lists the map units in the study area and their estimated hydric soils percentage. Two soil map units within the study area are considered to have 90% components with hydric soils. These two map units generally align with the NWI-mapped wetland areas within the study area. Six additional map units occur in the study area and have between four % and six % components with hydric soils. Figure 3 shows the soil map units around the study area.

Table 4 Soil Survey

Map Unit Name	Map Unit	Acres	Percent of Study Area	Percent Hydric Components
Cryaquepts, depressional, 0 to 7 percent slopes	116	25.8	24.7	90
Cryods, low elevation, and Cryochrepts, 30 to 70 percent slopes	120	0.5	0.5	5
Deception silt loam, rolling	122	0.4	0.4	4
Estelle silt loam, rolling	131	9.5	9.1	4
Histosols	141	7.7	7.4	90
Kichatna silt loam, 0 to 3 percent slopes	151	2.3	2.2	6
Kichatna silt loam, sloping and moderately steep	152	20.0	19.2	6
Kichatna silt loam, undulating	154	38.4	36.8	4
	Total	**104.4**	**100.0**	

*Apparent inconsistencies in sums are the results of rounding





Study Area

Soil Map Unit Percent Hydric (labled by Map Unit Number)

- 4% hydric
- 5% hydric
- 6% hydric
- 90% hydric
- Water

0 1,000 2,000 Feet

(At original document size of 8.5x11)

1:14,000 1 inch = 1,166.67 feet

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Figure
Soils Mapping

Figure Number
3

Stantec

2.1.7 Climate Data

The growing season for this area begins May 8 and ends October 5 (USACE 2007).

Precipitation data leading to 2022 field work is listed in Table 5. The weather conditions preceding the field investigations were considered during onsite determinations. Normal precipitation is based on 1991-2020 records for Matanuska Experimental Farm, Alaska (NOAA 2022). Field work was conducted June 9 and 10, 2022. Winter precipitation preceding field work was high. October 2021, December 2021, and February 2022 were all above climate normal ranges, while November 2021, January 2022, and March 2022 were within climate normal range. Precipitation in April and May 2022 was within climate normal ranges, but at the lower end of that range. Precipitation for the water year, starting October 2021, through June 2022, was 124 percent of normal (Table 5).

Table 5 2022 Water Year WETS Precipitation for Matanuska Experimental Farm, Alaska

Month	Total Monthly Accumulated Precipitation (Inches)	Average Monthly Accumulated Precipitation 1991-2020 (Inches)	Percent of Average Precipitation	30% Chance Precipitation	
				Less Than (In.)	More Than (In.)
October 2021	2.07	1.39	149	0.87	1.65
November 2021	0.56	0.84	67	0.40	1.03
December 2021	1.77	1.02	174	0.59	1.25
January 2022	0.77	0.81	95	0.38	0.95
February 2022	2.28	0.78	292	0.37	0.93
March 2022	0.57	0.52	110	0.29	0.64
April 2022	0.14	0.35	40	0.13	0.42
May 2022	0.53	0.72	74	0.35	0.87
June 2022	0.80	1.22	66	0.81	1.49
Total	**9.49**	**7.65**	**124**	**-**	**-**

These data suggest that conditions during field work were normal to drier than normal, due to the lower than average precipitation in the months directly preceding field work.

The USACE and EPA Antecedent Precipitation Tool (APT, EPA 2022) was run for the dates the field work was conducted. The APT results showed that conditions were Normal on June 9, and conditions were Drier than Normal on June 10. The APT showed that delineations were conducted in the dry season. APT outputs are included in Table 6 and Appendix A.

Table 6 Antecedent Precipitation Tool Results

Date	Season	Antecedent Precipitation Score	Antecedent Precipitation Condition
6/9/2022	Dry Season	14	Normal Conditions
6/10/2022	Dry Season	9	Drier than Normal

2.1.8 Fire History

No fires have been recorded within the study area going back to 1940 (AICC 2022), although fire likely has been part of the ecosystem historically.

2.1.9 Sensitive and Rare Species

There are no threatened or endangered State or Federally listed species within the study area (USFWS 2022b).

2.1.10 Non-Native Species

The Alaska Exotic Plants Information Clearinghouse (AKEPIC) tracks non-native plant species in Alaska and provides biographies and risk assessments, to include an invasiveness ranking—the higher the number, the higher the conservation concern. The AKEPIC database and mapping applications show three survey datapoints within or near the study area corridor (AKEPIC 2022). Table 7 lists the 18 exotic plants in the database for this survey area.

Table 7 AKEPIC listed Non-Native Plants

Common Name	Scientific Name	Invasiveness Rank
lambsquarters	*Chenopodium album L.*	37
narrowleaf hawksbeard	*Crepis tectorum L.*	56
foxtail barley	*Hordeum jubatum L.*	63
leporinum barley	*Hordeum murinum L. ssp. leporinum (Link) Arcang.*	60
bigleaf lupine	*Lupinus polyphyllus Lindl. ssp. polyphyllus*	71
pineappleweed	*Matricaria discoidea DC.*	32
white sweetclover	*Melilotus albus Medik.*	81
timothy	*Phleum pratense L.*	54
common plantain	*Plantago major L.*	44

annual bluegrass	*Poa annua L.*	46
prostrate knotweed	*Polygonum aviculare L.*	45
old-man-in-the-Spring	*Senecio vulgaris L.*	36
corn spurry	*Spergula arvensis L.*	32
common chickweed	*Stellaria media (L.) Vill.*	42
common dandelion	*Taraxacum officinale F.H. Wigg.*	58
alsike clover	*Trifolium hybridum L.*	57
red clover	*Trifolium pratense L.*	53
white clover	*Trifolium repens L.*	59

2.2 METHODOLOGY

2.2.1 Field Data Collection

During the 2022 wetland field evaluations, Global Positioning System (GPS) locations and detailed information on one tenth of an acre plots (1/10) were recorded in representative project vegetation types. Additional field data, notes, and photographs were used to evaluate mapping areas with similar characteristics.

Field data was collected and recorded using three types of plots:

1. Wetland Determination (WD) Plots. At these sites, investigators recorded detailed descriptions of vegetation, hydrology, and soils on field data forms. Wetland status for this plot type was determined based on the presence or absence of hydrophytic vegetation, hydrology, and hydric soils.

2. Field Verification Points (FVP). Photographs and GPS locations were taken for vegetation communities and landscape positions that were clearly wetlands or upland based on WD results in nearby similarly situated areas with similar site-specific information. Project Vegetation Type, Hydrogeomorphic (HGM), and Cowardin classifications were recorded.

3. Stream Crossing (SC) Points. Photographs and GPS locations were taken when streams were encountered. Information on the stream status as intermittent or perennial Relatively Permanent Waters (USACE 2010) and additional stream data were collected.

Generally, the information collected at each representative wetland determination field plot included:

- percent coverage of all plant species (tree, shrub, and herbaceous species) and their wetland indicator status according to the 2020 *National Wetland Plant List* (NWPL, USACE 2020a);

- vegetation type;

- soil characteristics;
- visible or readily apparent hydrologic characteristics;
- physical characteristics including aspect, elevation, landform, and topography;
- location information including latitude and longitude (in NAD83, decimal degrees);
- wetland descriptors including HGM and Cowardin classifications;
- indications of prior disturbance and whether current conditions represent the 'new normal'; and
- direct wildlife observations, as well as indirect observations such as trails, scat, dens, or heavy browse.

Plant Data

Alaska plant indicator statuses follow the Alaska 2020 NWPL (USACE 2020a). Alaska is divided into subregions, where plant indicator statuses may differ from the rest of the State. The study area is not within any subregions, so there are no modifications to plant indicator statuses. Plants observed during field work and their indicator statuses are listed in Appendix B.

The presence of hydrophytic vegetation was determined using the prevalence index and the dominance test (USACE 2007).

Hydric Soils Assessment

Field indicators of hydric soils and determination of hydric soil status was based on USDA National Resource Conservation Service (NRCS) guidance (USDA 2018) and the Alaska 2007 Supplement (USACE 2007). The 2007 Supplement contains a subset of hydric soil indicators found in the U.S. as determined by the National Technical Committee for Hydric Soils (USACE 2007). Additional soil characteristics recorded within the soil horizons were based on NRCS guidance (Schoeneberger et al. 2012).

Hydrology

The 2007 Supplement lists numerous primary and secondary hydrology indicators. All indicators found in the sampling area were recorded in the data form.

Field Data

Field plot data were collected at 53 sites throughout the study area, but primarily focused on areas where Cook Inlet Wetland, NWI, or NHD mapping (Sections 2.1.1, 2.1.2, and 2.1.5, Figure 2), or landscape position showed potential for Wetlands and Waters. Field site locations were determined using a sub-meter GPS unit. All field data were entered into a project database where the data were reviewed; queries were generated from the database to provide the information needed for mapping and results analyses.

Field data were collected June 9-10 by Stantec Professional Wetland Scientist Zach Baer and Field Technician Alivia Lowell. Field plot types collected are shown in Table 8. Field forms and photos for all WD plots, and photos of FVP and SC plots are presented in Appendix C.

Table 8 Field Plots

Company	Field Plot Type	Wetlands and Waters	Uplands	Total Plots
Stantec	Wetland Determination (WD)	5	6	11
	Field Verification Point (FVP)	14	25	39
	Stream Crossing (SC)	3	0	3
	Total	**22**	**31**	**53**

2.2.2 Mapping

Final mapping (wetland boundaries, HGM classification, Cowardin code, and Vegetation Type) was completed using digital, true color orthoimagery collected by the Matanuska-Susitna Borough in 2019 and 2021 that maintains a resolution of 0.5-feet in ESRI's ArcMap GIS (10.8) environment. Additionally, a Hillshade derived from a 1-meter Bare Earth Digital Elevation Model collected in 2011 was utilized in the mapping process.

Field data were used to identify the characteristics of the vegetation and wetlands or non-wetlands community at a specific location. The information gathered from one site was used for calibration to extrapolate to similar unvisited sites within the mapping environment. In addition to imagery interpretations, ancillary data including field notes, general landscape position, slope, aspect, landform and proximity to other vegetation community types and land cover types were utilized to assist in the mapping process.

Mapping polygons were drawn to delineate differences among the four classification systems used to attribute each polygon. Polygons were drawn around all features. When stream boundaries were not visible due to overhanging vegetation, polyline features were drawn to indicate location. Wetland boundaries were delineated at scales between 1:600 (one inch equals 50 feet) to 1:800 (one inch equals 67 feet).

3.0 RESULTS

3.1 WETLANDS AND WATERS

The field verified Wetlands and Waters totals are shown in Table 9. Nearly 15 percent of the study area was identified as Wetlands and Waters. Figure 4 shows an overview of the Wetlands and Waters in the study area. Detailed figures for the study area are provided in Appendix D.

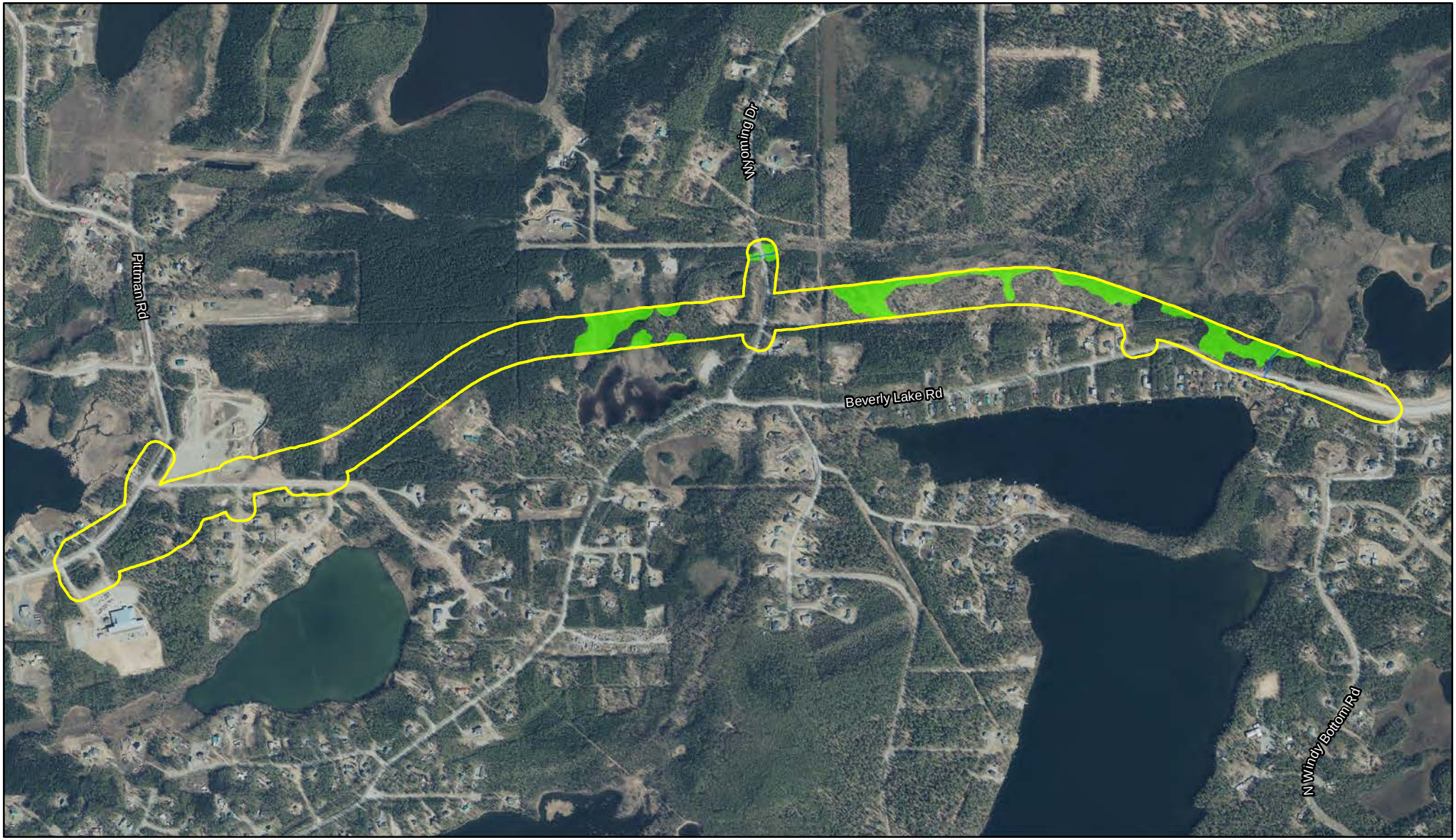
Table 9 Wetlands and Waters

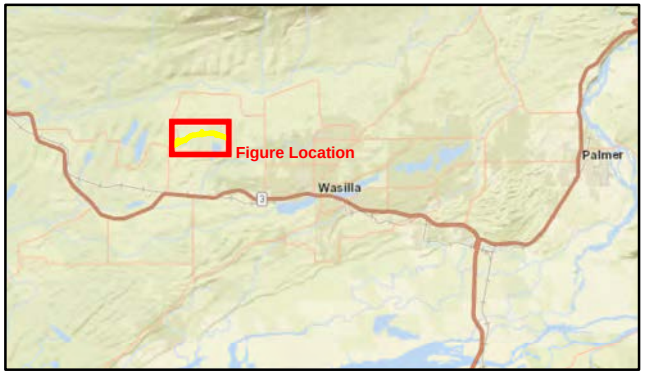
Status	Acres	Percent of Study Area
Wetlands	15.02	14.4
Waters	0.05	<0.1
Total Wetlands and Waters	**15.07**	**14.4**
Uplands	89.38	85.6
Total	**104.44**	**100.0**

*Apparent inconsistencies in sums are the results of rounding

Wetlands and Waters were found in the eastern two-thirds of the study area, occupying low-lying, concave landscape positions (Figure 4). Wetlands were found in generally the same locations as mapped by the NWI and CIW, however, the field verified mapping presented here refined the boundaries presented in those relatively coarse-scaled products. The field verified mapping determined that 15.07 acres of wetlands and waters occurred within the study area, versus the 29.0 acres mapped by CIW and the 29.7 acres mapped by the NWI.

Wetlands and Waters in the study area are all connected upstream to a large wetland complex situated directly to the northeast of the study area. A small, slow-moving stream flowing from this complex parallels the northern portion of the study area before crossing under Wyoming Drive in a culvert. This stream supports a broad swale, and water from this system flows to the wetlands in the study area lying west of Wyoming Drive. Wetlands in the study area to the east of Wyoming Drive are supported by this swale or are directly part of the large wetland complex. At the eastern end of the study area, two streams drain the large wetland complex into Beverly Lake to the south.





Study Area

Aquatic Resource Type

Stream

Wetland

0 1,000 2,000 Feet

(At original document size of 8.5x11)

1:14,000 1 inch = 1,166.67 feet

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Seldon Road Extension Phase II

Figure

Wetlands and Waters Overview

Figure Number

4

Stantec

3.1.1 Cowardin Classification

As part of the wetlands mapping, Wetlands and Waters were classified according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Approximately one-third of wetlands were classified as Deciduous Shrub (33.2 percent of Wetlands and Waters). The next largest categories were Coniferous Scrub (21.6 percent of Wetlands and Waters) which is comprised of stunted black spruce saplings, and Coniferous Forest (20.9 percent of Wetlands and Waters) which is comprised of black spruce forests. Herbaceous wetlands totaled 15.3 percent of Wetlands and Waters, while Mixed Forests and Deciduous Forests each covered less than five percent of Wetlands and Waters. Streams totaled 0.3 percent of Wetlands and Waters. Wetlands and Waters polygons are labeled by Cowardin Classification on the Wetlands and Waters detail figures presented in Appendix D. All classifications and total acres for each are shown in Table 10.

Table 10 Cowardin Classifications for the Study Area

Cowardin Group	NWI Code	Wetland Acres	Percent of Study Area	Percent of Wetlands and Waters
Wetlands				
Coniferous Forest	PFO4/SS1	1.63	1.6	10.8
	PFO4/EM1	1.52	1.5	10.1
Total Coniferous Forest		**3.14**	**3.0**	**20.9**
Mixed Forest	PFO4/1	0.67	0.6	4.4
Total Mixed Forest		**0.67**	**0.6**	**4.4**
Deciduous Forest	PFO1/EM1	0.35	0.3	2.3
	PSS1/FO1	0.29	0.3	1.9
Total Deciduous Forest		**0.64**	**0.6**	**4.3**
Coniferous Scrub	PSS4/1	0.44	0.4	2.9
	PSS4/EM1	1.00	1.0	6.7
	PSS1/4	1.62	1.5	10.7
	PEM1/SS4	0.20	0.2	1.3
Total Coniferous Scrub		**3.26**	**3.1**	**21.6**
Deciduous Shrub	PSS1	0.53	0.5	3.5
	PSS1/EM1	2.18	2.1	14.4
	PEM1/SS1	2.29	2.2	15.2
Total Deciduous Shrub		**5.00**	**4.8**	**33.2**
Herbaceous	PEM1	2.31	2.2	15.3
Total Herbaceous		**2.31**	**2.2**	**15.3**

Results

Cowardin Group	NWI Code	Wetland Acres	Percent of Study Area	Percent of Wetlands and Waters
Total Wetlands		**15.02**	**14.4**	**99.7**
Waters				
Stream	R2UB	0.01	<01	0.1
	R3UB	0.04	<0.1	0.3
Total Stream		**0.05**	**<0.1**	**0.3**
Total Waters		**0.05**	**<0.1**	**0.3**
Total Wetlands and Waters		**15.07**	**14.4**	**100.0**
Total Uplands		**89.38**	**85.6**	
Total Study Area*		**104.44**	**100.0**	

*Apparent inconsistencies in sums are the results of rounding.

3.1.2 Project Hydrogeomorphic Classification

Wetland functional capacity was assessed using an HGM-based rapid assessment procedure. This procedure is based on the essential elements of the Hydrogeomorphic approach described by the USACE in Brinson (1993) and Smith et al. (1995) to identify groups of wetlands that function similarly.

The HGM classification is based on a wetland's: (1) position in the landscape or geomorphic setting, (2) dominant source of water, and (3) hydrodynamics of the water in the wetland (Brinson 1993). The purpose of the HGM classification is to provide a mechanism to account for the natural variation inherent between wetlands, particularly when wetland functions are being assessed. For example, a riverine wetland will generally have a much higher opportunity to export organic carbon than an isolated depressional wetland due to the riverine wetland's landscape position and hydrodynamics. Table 11 provides a summary of the acres of each HGM type as currently classified within the study area.

Table 11 Hydrogeomorphic Classification

HGM Classification	Acres	Percent of Study Area
Wetlands		
Riverine	0.51	0.5
Slope	14.51	13.9
Total Wetlands	**15.02**	**14.4**
Waters		
Riverine Channel	0.05	<0.1
Total Waters	**0.05**	**<0.1**
Total Wetlands and Waters	**15.07**	**14.4**
Total Uplands	**89.38**	**85.6**
Total Study Area	**104.44**	**100.0**

*Apparent inconsistencies in sums are the results of rounding

The HGM classes identified in the study area are shown on the detailed figures in Appendix D and discussed in the following section. The HGM descriptions are taken from Wetland Functional Assessment Guidebook, Operational Draft Guidebook for Assessing the Functions of Slope/Flat Wetland Complexes in the Cook Inlet Basin Ecoregion Alaska, using the HGM Approach (Hall et al 2003), an application of the HGM approach for precipitation driven wetlands on discontinuous permafrost in Interior Alaska.

Slope Wetlands

Slope HGM wetlands normally occur where there is a discharge of groundwater to the land surface. They exist on sloping land surfaces from steep hillslopes and swales to nearly level terrain. Slope wetlands are usually incapable of depressional water storage. Principal water sources are groundwater return flow and interflow from surrounding non-wetlands and precipitation. Hydrodynamics are dominated by downslope unidirectional flow. Slope wetlands can occur in nearly level landscapes if groundwater discharge is a dominant source to the wetland surface. Slope wetlands lose water by subsurface flows, surface flows, and by evapotranspiration (Hall et al 2003). Examples of slope wetlands in Alaska include patterned fens, hillside seeps, spring-fed wetlands, and wetlands at the base of bluffs or toeslopes where groundwater is discharged near the surface.

The majority of wetlands within the study area are classified as Slope wetlands (Photo 2). They are supported by discharge of groundwater from the Talkeetna Mountains to the north.

Photo 1 Slope HGM Wetland

Riverine Wetlands

Riverine HGM wetlands are found within active floodplains and riparian corridors associated with river and stream channels. Dominant water sources are subsurface hydraulic connections or overbank flow from nearby river and stream channels and wetlands. Groundwater discharge from surficial aquifers, overland flow from neighboring uplands and small tributaries, and precipitation may contribute additional inputs. Riverine wetlands lose surface water by flow returning to the channel after flooding or precipitation events.

Subsurface water loss generally occurs through discharge to nearby active channels, evapotranspiration, and vertical migration to deeper groundwater (Hall et al 2003).

Riverine wetlands in the study area occur in the swale containing the stream that crosses under Wyoming Drive (Photo 1). Other creeks in the study area are incised; overbank flooding does not occur enough to create or support wetlands in the adjacent riparian zone.

Photo 2 Riverine HGM Wetland

Riverine Channel Waters

Streams and rivers (RPW) are classified as Riverine Channel in the project HGM system.

The three unnamed streams intersecting the study area are considered Riverine Channel. The stream identified at data point ST053 is shown in Photo 3.

Photo 3 Riverine Channel Stream

3.1.3 Streams

Three Perennial RPW streams were found within the study area (Figure 4, Appendix D). The NHD had mapped two streams in the study area but only one of these streams was verified. However, two additional streams were found that the NHD had not mapped.

The total length of streams within the study area was 756 linear feet.

3.1.4 Jurisdictional Status of Wetlands and Waters

The Wetlands and Waters within the study area have adjacent downstream connections to Beverly Lake, which flows through several lakes and unnamed streams to Little Meadow Creek, which flows to Meadow Creek, which flows to Big Lake, a Traditional Navigable Water.

The jurisdictional status of the Waters of the U.S. is ultimately determined by USACE.

3.1.5 Plant Species

Thirty-two vascular plant species were recorded at WD plots in the study area. No recorded species were threatened or endangered. No non-native plant species were recorded. Non-native plant species were observed in the road shoulder along the study area; however, these areas were uplands in the road prism and not broadly sampled during the field effort. The full list of plant species recorded is presented in Appendix B. Appendix B lists all plant species presented on data forms (Appendix C) by the nomenclature of the NWPL (USACE 2020a).

4.0 REFERENCES

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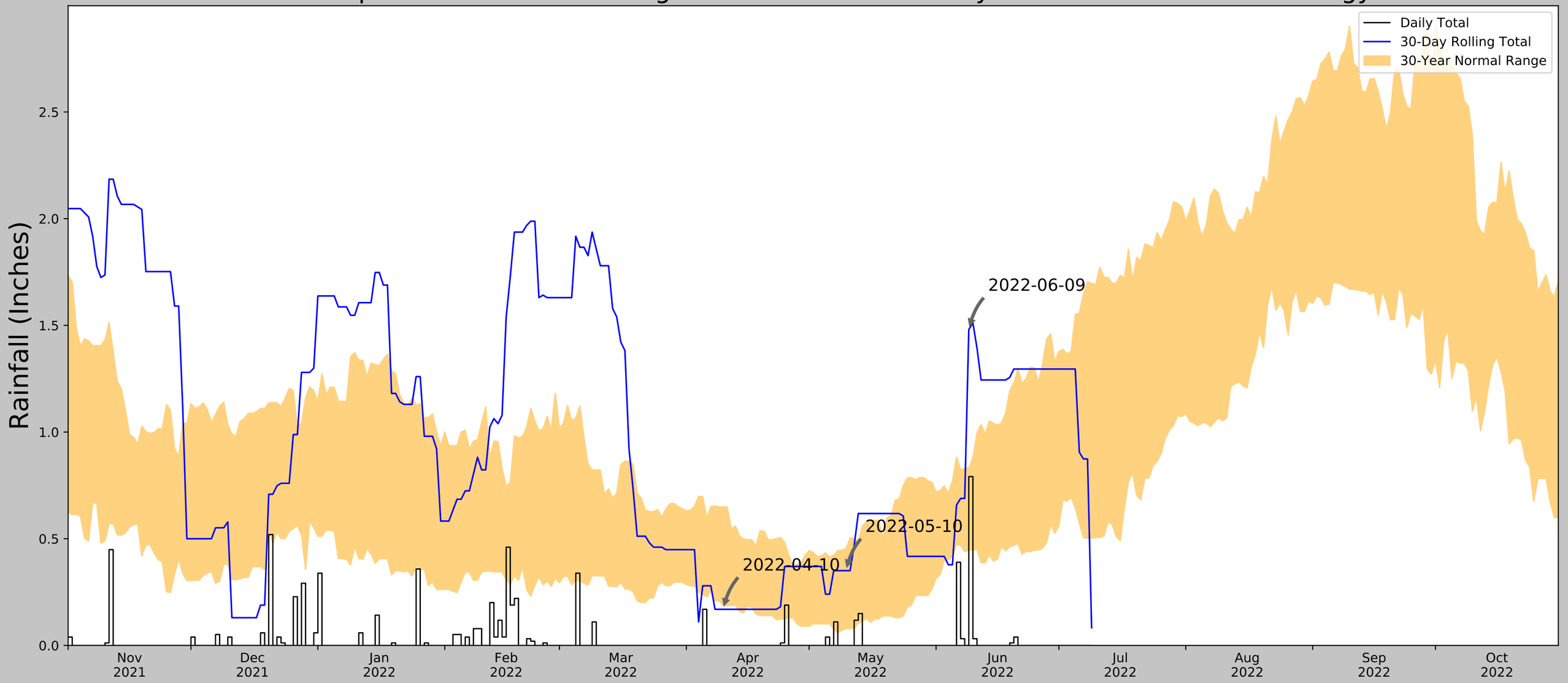
APPENDICES

Appendix A ANTECEDENT PRECIPITATION TOOL

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



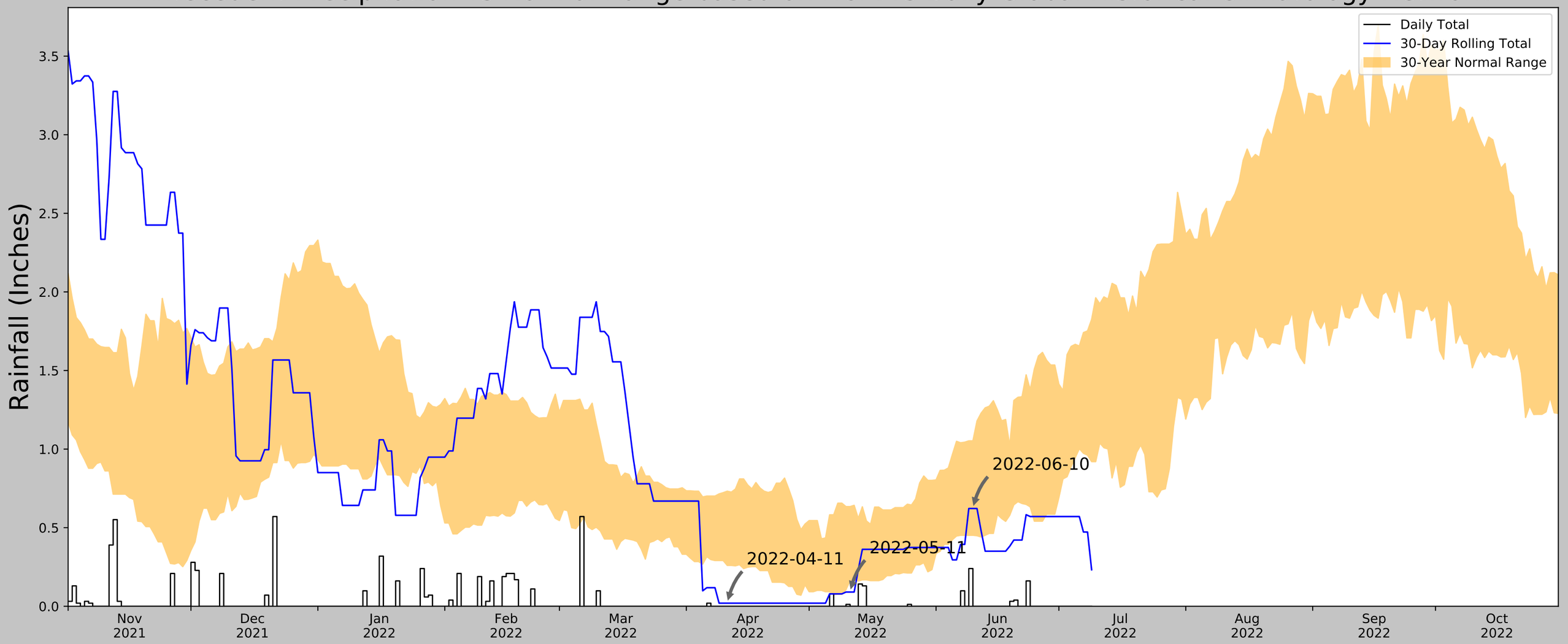
Coordinates	61.617, -149.591
Observation Date	2022-06-09
Elevation (ft)	387.39
Drought Index (PDSI)	Not available
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-06-09	0.446063	0.832283	1.480315	Wet	3	3	9
2022-05-10	0.079134	0.453543	0.350394	Normal	2	2	4
2022-04-10	0.186614	0.649213	0.169291	Dry	1	1	1
Result							Normal Conditions - 14

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALMER MUNI AP	61.5961, -149.0917	229.987	16.468	157.403	10.003	8544	90
PALMER JOB CORPS	61.5889, -149.0992	215.879	0.555	14.108	0.258	2675	0
PALMER 1.7 WNW	61.6185, -149.1258	435.039	1.911	205.052	1.252	18	0
BEN'S FARM	61.5633, -149.1542	126.969	3.059	103.018	1.692	109	0
LAZY MTN	61.6267, -149.0364	732.94	2.788	502.953	2.657	7	0



Coordinates	61.617, -149.591
Observation Date	2022-06-10
Elevation (ft)	387.39
Drought Index (PDSI)	Not available
WebWIMP H_2O Balance	Dry Season

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ANCHORAGE 5.2 SE	61.1926, -149.7542	265.092	29.816	122.298	17.064	193	0
ANCHORAGE 5.0 ESE	61.1945, -149.7573	226.05	29.705	161.34	18.16	167	21
ANCHORAGE 4.8 E	61.2047, -149.7563	229.987	29.007	157.403	17.619	510	0
KNIK 10.0 ESE	61.4176, -149.4477	-3280.512	14.564	3667.902	59.973	1399	0
EAGLE RIVER 7.0 SE	61.2378, -149.4543	1914.042	26.587	1526.652	52.553	19	0
EAGLE RIVER 6.2 ESE	61.2869, -149.3945	633.858	23.713	246.468	16.515	119	0
ANCHORAGE 3.1 ESE	61.2059, -149.8112	133.858	29.322	253.532	20.629	4	0
EAGLE RIVER 3.1 NNE	61.3659, -149.5501	255.906	17.402	131.484	10.119	8	0
EAGLE RIVER 2.6 ESE	61.3122, -149.4958	798.885	21.293	411.495	18.344	2679	69
EAGLE RIVER 7.8 SE	61.2272, -149.4401	2155.84	27.39	1768.45	60.763	16	0
CHUGIAK 0.8	61.4069, -149.4872	190.945	14.914	196.445	9.641	74	0
ANCHORAGE 4.5 E	61.213, -149.7649	224.081	28.5	163.309	17.479	9	0
WILLOW 3.6 SE	61.6995, -149.9897	304.134	14.266	83.256	7.607	60	0
WASILLA 2.7 NW	61.6058, -149.5233	493.11	2.355	105.72	1.309	6	0
PALMER 1.7 WNW	61.6185, -149.1258	435.039	15.279	47.649	7.604	4	0
BUTTE 3NNE	61.5836, -149.0056	246.063	19.375	141.327	11.457	1563	0
CAMP TOGOWOODS	61.495, -149.7572	140.092	10.048	247.298	7.006	406	0
CASWELL 5 N	61.9736, -150.0594	250.0	29.0	137.39	17.034	620	0
BEN'S FARM	61.5633, -149.1542	126.969	14.83	260.421	10.536	2340	0

Appendix B PLANT LIST

Plants recorded in the study area during field work in 2022 are presented in the table.

Indicator status abbreviations are as follows:

- OBL: Obligate Wetland Plants (Almost always occur in wetlands)
- FACW: Facultative Wetland Plants (Usually occur in wetlands, but may occur in non-wetlands)
- FAC: Facultative Plants (Occur in wetlands and non-wetlands)
- FACU: Facultative Upland Plants (Usually occur in non-wetlands, but may occur in uplands)
- UPL: Upland Plants (Almost always occur in non-wetlands)

Latin name, common name, and indicator status rating are from the National Wetland Plant List (USACE 2020a).

Tree

Latin Name	Common Name	Indicator Status Rating
Betula neoalaskana	Alaska Paper Birch	FACU
Picea glauca	White Spruce	FACU
Picea mariana	Black Spruce	FACW
Populus tremuloides	Quaking Aspen	FACU

Shrub/Sapling

Latin Name	Common Name	Indicator Status Rating
Alnus incana	Speckled Alder	FAC
Betula glandulosa	Resin Birch	FAC
Betula neoalaskana	Alaska Paper Birch	FACU
Chamaedaphne calyculata	Leatherleaf	FACW
Dasiphora fruticosa	Golden-Hardhack	FAC
Empetrum nigrum	Black Crowberry	FAC
Linnaea borealis	American Twinflower	FACU
Myrica gale	Sweetgale	OBL
Picea glauca	White Spruce	FACU
Picea mariana	Black Spruce	FACW
Populus tremuloides	Quaking Aspen	FACU
Rhododendron groenlandicum	Rusty Labrador-Tea	FAC
Rosa acicularis	Prickly Rose	FACU
Salix barclayi	Barclay's Willow	FAC
Salix pulchra	Diamond-Leaf Willow	FACW
Vaccinium ovalifolium	Oval-Leaf Blueberry	FAC
Vaccinium uliginosum	Alpine Blueberry	FAC

Appendix B Plant List

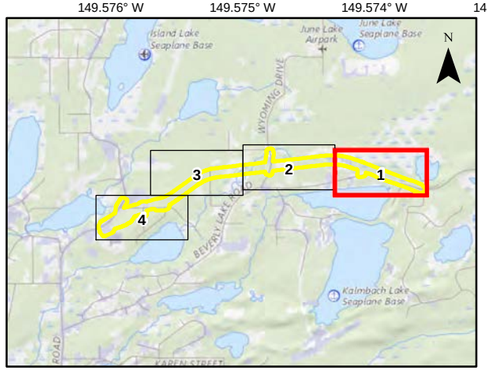
Latin Name	Common Name	Indicator Status Rating
Vaccinium vitis-idaea	Northern Mountain-Cranberry	FAC
Viburnum edule	Squashberry	FACU

Herb

Latin Name	Common Name	Indicator Status Rating
Athyrium cyclosorum	Western Lady Fern	FAC
Calamagrostis canadensis	Bluejoint	FAC
Chamaenerion angustifolium	Narrow-Leaf Fireweed	FACU
Comarum palustre	Purple Marshlocks	OBL
Cornus canadensis	Canadian Bunchberry	FACU
Equisetum arvense	Field Horsetail	FAC
Equisetum fluviatile	Water Horsetail	OBL
Equisetum sylvaticum	Woodland Horsetail	FAC
Geocaulon lividum	False Toadflax	FACU
Rubus arcticus	Northern Blackberry	FAC
Rubus chamaemorus	Cloudberry	FACW
Streptopus amplexifolius	Clasping Twistedstalk	FACU
Trientalis europaea	Arctic Starflower	FACU

Appendix C FIELD DATA FORMS AND PHOTOS

Appendix D WETLANDS AND WATERS DETAIL FIGURES



All data points have associated photographs with photo directions labeled in Appendix C.
Field data forms are presented concurrently with photos in Appendix C.

Imagery: 2021 true color orthoimagery, 0.5-foot
Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
Projection: Transverse Mercator
Datum: North American 1983

Study
mat_su_roads_clip

Plot Status
- RPW
- Upland
- Wetland

Stream

Wetlands and Waters by HGM
- Riverine
- Riverine Channel
- Slope

0 100 200 300 Feet
(At original document size of 11x17)
1:2,400 1 in = 200 feet

N
W E
S

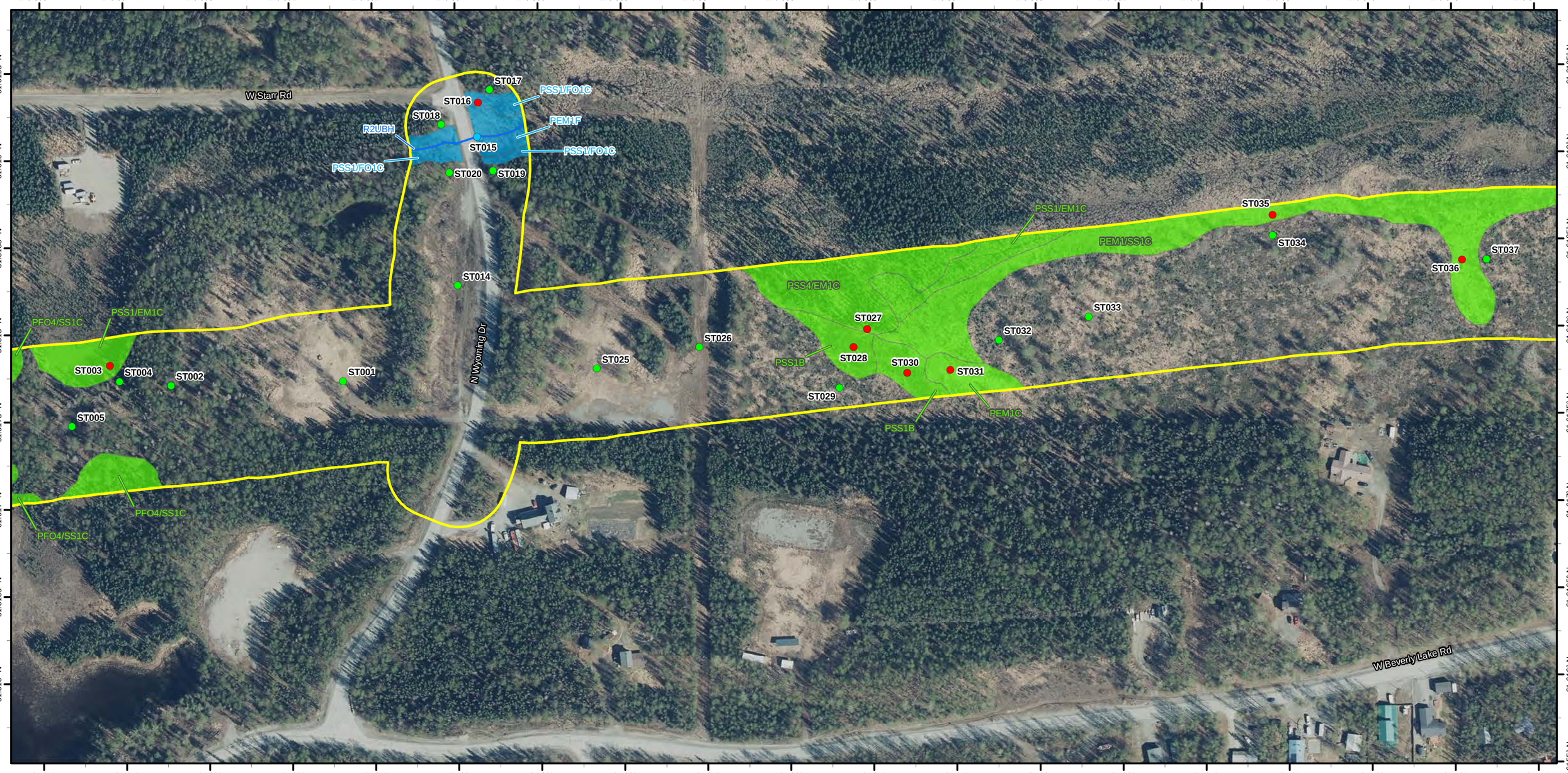
Client
Alaska Department of Transportation and Public Facilities

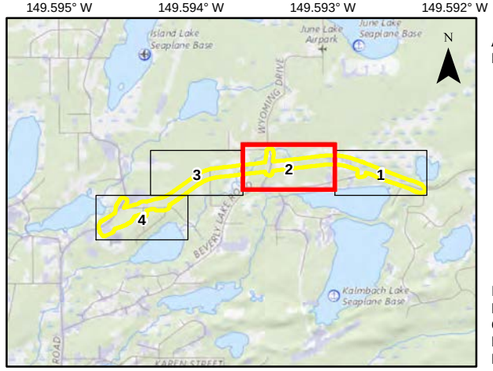
Project
Seldon Road Extension Phase II

Figure
Wetlands and Waters Detail

Figure Number
D - 1

Stantec





All data points have associated photographs with photo directions labeled in Appendix C.
Field data forms are presented concurrently with photos in Appendix C.

Study
mat_su_roads_clip

Plot Status
- RPW
- Upland
- Wetland

Stream

Wetlands and Waters by HGM
- Riverine
- Riverine Channel
- Slope

0 100 200 300 Feet

(At original document size of 11x17)

1:2,400 1 in = 200 feet

N
W E
S

Imagery: 2021 true color orthoimagery, 0.5-foot
Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
Projection: Transverse Mercator
Datum: North American 1983

Client

Alaska Department of Transportation and Public Facilities

Project

Seldon Road Extension Phase II

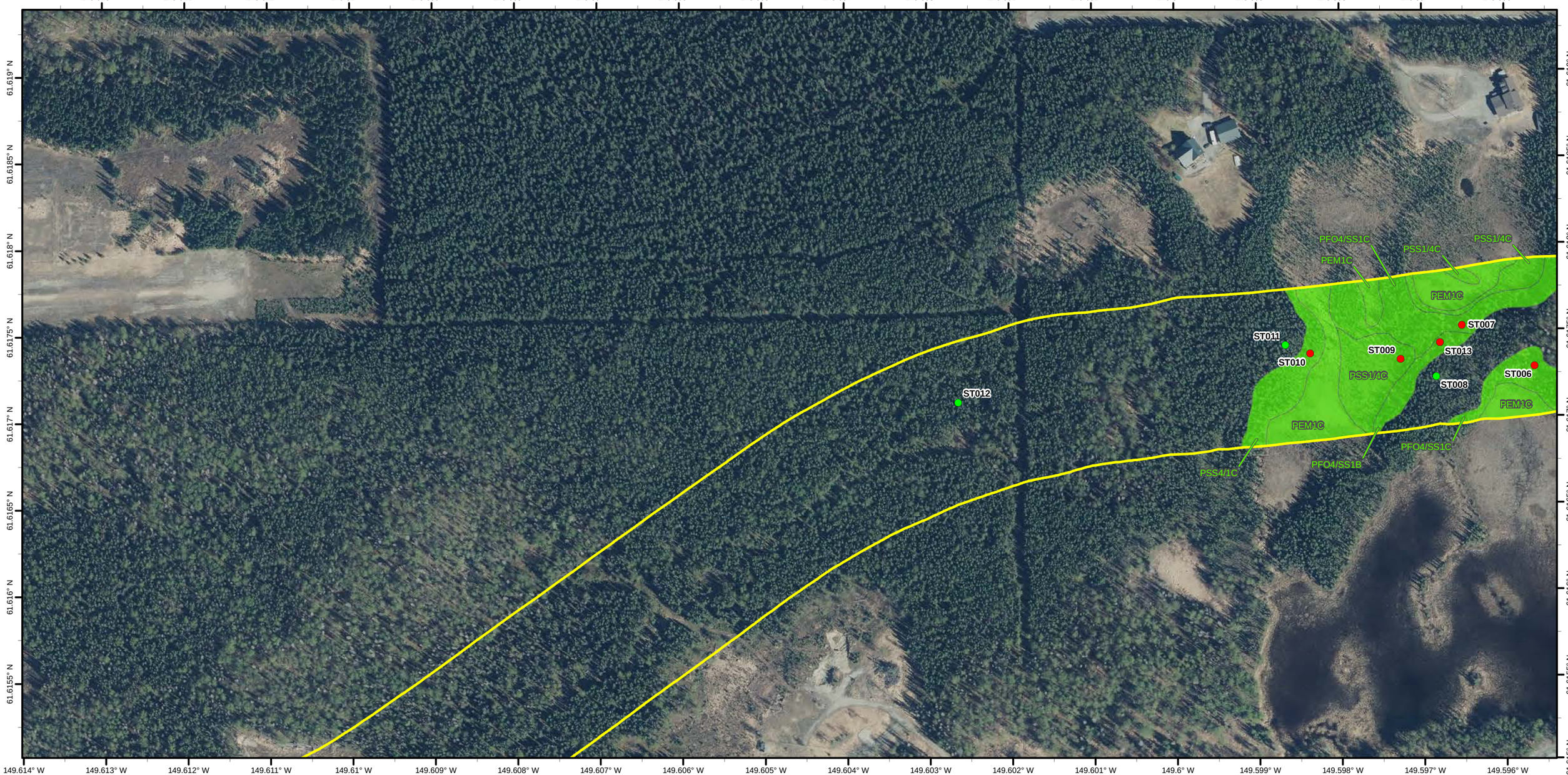
Figure

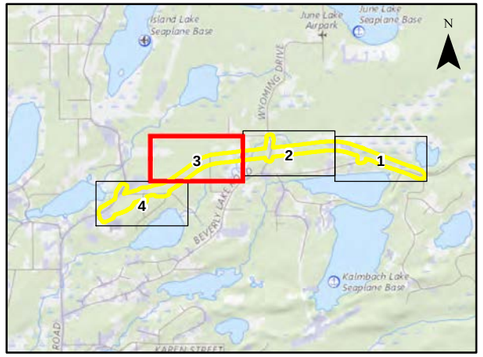
Wetlands and Waters Detail

Figure Number

D - 2

Stantec





All data points have associated photographs with photo directions labeled in Appendix C.
Field data forms are presented concurrently with photos in Appendix C.

Study
mat_su_roads_clip

Plot Status
- RPW
- Upland
- Wetland

Stream

Wetlands and Waters by HGM
- Riverine
- Riverine Channel
- Slope

0 100 200 300 Feet

(At original document size of 11x17)

1:2,400 1 in = 200 feet

N
W E
S

Imagery: 2021 true color orthoimagery, 0.5-foot
Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
Projection: Transverse Mercator
Datum: North American 1983

Client

Alaska Department of Transportation and Public Facilities

Project

Seldon Road Extension Phase II

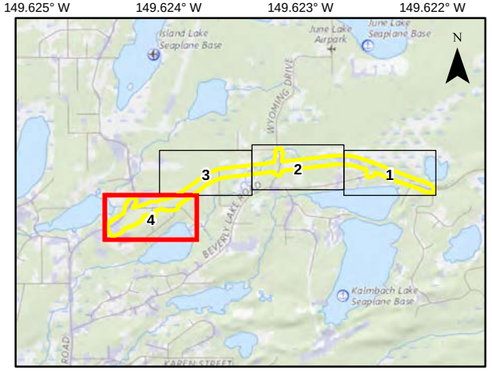
Figure

Wetlands and Waters Detail

Figure Number

D - 3

Stantec



All data points have associated photographs with photo directions labeled in Appendix C.
Field data forms are presented concurrently with photos in Appendix C.

Study
mat_su_roads_clip

Plot Status
- RPW
- Upland
- Wetland

Stream

Wetlands and Waters by HGM
- Riverine
- Riverine Channel
- Slope

0 100 200 300 Feet

(At original document size of 11x17)

1:2,400 1 in = 200 feet

Imagery: 2021 true color orthoimagery, 0.5-foot
Location Inset Background: USGS Topographic
Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
Projection: Transverse Mercator
Datum: North American 1983

Client

Alaska Department of Transportation and Public Facilities

Project

Seldon Road Extension Phase II

Figure

Wetlands and Waters Detail

Figure Number

D - 4

Stantec

PHOTO REPORT

Plot Number	ST001
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6177253214
Longitude (DD)	-149.591384877

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 002

Project: SELDON RD. PHASE II	Date: 6/9/22
Applicant: ADOT+PF	Investigators: ZB + AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617708 N	Watershed: FISH CREEK
Longitude: 149.593479 W	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	NO
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	NO
Remarks:				**Is the Sampled Area within a Wetland?**	NO

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. BETNEO	FU	Y	15	3. PICGLA	FU	Y	10
2. PICMAR	FW	Y	10	4.			

Total Tree Cover: 35 — 50% of Total Cover: 17.5 — 20% of Total Cover: 7

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. PICMAR	FW	Y	5	9.			
2. BETNEO	FU	N	3	10.			
3. VIBEDU	FU	N	3	11.			
4. RHOGRO	F	Y	5	12.			
5. VACVIT	F	Y	7	13.			
6. LINBOR	FU	N	3	14.			
7.				15.			

Total Shrub Cover: 26 — 50% of Total Cover: 13 — 20% of Total Cover: 5.2

Herbaceous Stratum	IND	DOM	Cover	13.			
1. CHAANG	FU	Y	7	14.			
2. EQUARV	F	Y	5	15.			
3. ATHFYC	F	N	T	16.			
4. GYMDRY	FU	N	2	17.			
5. CALCAN	F	N	1	18.			
6. CORCAN	FU	Y	5	19.			
7. STRAMP	FU	N	T	20.			
8. GEOLIV	FU	N	3	21.			
9. TRIEUR	FU	N	T	22.			
10.				23.			
11.				24.			
12.				25. MOSS	—		40

Total Herb Cover: 23 — 50% of Total Cover: 11.5 — 20% of Total Cover: 4.6

1. Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 56 (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 15	x 2 =	30
FAC species 18	x 3 =	54
FACU species 51	x 4 =	204
UPL species 0	x 5 =	0
Column Totals: 84 (A)		288 (B)

Prevalence Index = B/A = 3.43

Hydrophytic Vegetation Indicators:

- Y — Dominance Test is >50%
- N — Prevalence Index is ≤3.0
- N — Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- N — Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

OMF

Cowardin Code: U

HGM Classification: N/A

Landform: MORAINE

Local Relief: UNDULATING

Microtopography:	Slope:	Aspect:
FLAT	1%	E

SOIL

Plot No: ST 002

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators								Soil Map Unit Name: KICHATNA SILT LOAM, SLOPING + MOD. STEEP		
	Horizon	Soil Matrix		Redox Features						
Depth (in.)	Name	Color (moist)	%	Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
2-0	Oe									
0-7	Bh/E	10YR 4/4	60						SIL	
7-	E	2.5Y 5/1	40						SIL	
7-22	Bw	10YR 3/4	100						SIL	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks: Cryoturbated spodosol

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- ~ Histosol or Histel (A1)
- ~ Histic Epipedon (A2)[4]
- ~ Black Histic (A3)
- ~ Hydrogen Sulfide (A4)
- ~ Thick Dark Surfaces (A12)
- ~ Alaska Gleyed (A13)
- ~ Alaska Redox (A14)
- ~ Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- ~ Depleted Below Dark Surface (A11)
- ~ Depleted Matrix (F3)
- ~ Redox Dark Surface (F6)
- ~ Depleted Dark Surface (F7)
- ~ Redox Depression (F8)
- ~ Red Parent Material (F21)
- ~ Very Shallow Dark Surface (F22)
- ~ Alaska Color Change (TA4) Give details of color change
- ~ Alaska Alpine Swales (TA5)
- ~ Alaska Redox with 2.5Y Hue
- ~ Alaska Gleyed w/o Hue 5Y or Redder Underlying
- ~ AA Positive (mineral soil, 60% of horizon 4 inches thick)
- ~ Ponded/Flooded/High Water Table (12 inches or higher)
- ~ Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	NO
NRCS Drainage Class:	MWD
Depth of Organic Soils:	2
Restrictive Layer Type:	NA
Restrictive Layer Depth:	NA

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

X Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- ~ Surface Water (A1)
- ~ High Water Table (A2)
- ~ Saturation (A3)
- ~ Water Marks (B1)
- ~ Sediment Deposits (B2)
- ~ Drift Deposits (B3)
- ~ Algal Mat or Crust (B4)
- ~ Iron Deposits (B5)
- ~ Surface Soil Cracks (B6)
- ~ Inundation Visible on Aerial Imagery (B7)
- ~ Sparsely Vegetated Concave Surface (B8)
- ~ Marl Deposits (B15)
- ~ Hydrogen Sulfide Odor (C1) (w/in 12")
- ~ Dry-Season Water Table (C2)**
- ~ Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? YES

Secondary Indicators (2 or more required)

- ~ Water-stained Leaves (B9)
- ~ Drainage Patterns (B10)
- ~ Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- NA Presence of Reduced Iron (C4)
- ~ Salt Deposits (C5)
- ~ Stunted or Stressed Plants (D1)
- ~ Geomorphic Position (D2)
- ~ Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- ~ Microtopographic Relief (D4)
- ~ FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present? Yes ____ No X Depth (inches): NA

Water Table Present? Yes ____ No X Depth (inches): NA

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): NA

Episaturation ____ Endosaturation ____

Water Source:

Wetland Hydrology Present? NO

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST002
Wetland Status	Upland
Plot Type	WD
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6177068127
Longitude (DD)	-149.593455778

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST003
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PSS1/EM1C
HGM	Slope
Latitude (DD)	61.617823906
Longitude (DD)	-149.594192248

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST004
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6177301924
Longitude (DD)	-149.59407732

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST005
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6174745809
Longitude (DD)	-149.594651309

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST006
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PFO4/SS1C
HGM	Slope
Latitude (DD)	61.6172887143
Longitude (DD)	-149.595661378

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST007
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PFO4/SS1C
HGM	Slope
Latitude (DD)	61.617526435
Longitude (DD)	-149.596540797

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: NE

Photo Type: Vegetation Direction: SW

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 008

Project: SELDON RD PH II	Date: 6/9/22
Applicant: ADOT+PF	Investigators: ZB + AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617230N	Watershed: FISH CREEK
Longitude: 149.596878W	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	NO
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	YES
Remarks:				**Is the Sampled Area within a Wetland?**	No

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. PICMAR	FW	Y	10	3.			
2.				4.			

Total Tree Cover: 10 — 50% of Total Cover: 5 — 20% of Total Cover: 2

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. PICMAR	FW	Y	20	9.			
2. RHOGRO	F	N	5	10.			
3. VACVIT	F	N	3	11.			
4. ROSACI	FU	N	3	12.			
5. EMPNIG	F	N	T	13.			
6.				14.			
7.				15.			

Total Shrub Cover: 31 — 50% of Total Cover: 15.5 — 20% of Total Cover: 6.2

Herbaceous Stratum	IND	DOM	Cover	13.			
1. EQUARV	F	Y	2	14.			
2. GEOLIN	FU	Y	3	15.			
3. CORCAN	FU	N	T	16.			
4.				17.			
5.				18.			
6.				19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24.			
12.				25. MOSS			80

Total Herb Cover: 5 — 50% of Total Cover: 2.5 — 20% of Total Cover: 1

1.Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species	0 x 1 =	0
FACW species	30 x 2 =	60
FAC species	10 x 3 =	30
FACU species	6 x 4 =	24
UPL species	0 x 5 =	0
Column Totals:	46 (A)	114 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

Y Prevalence Index is ≤3.0

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

N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

OBSF

Cowardin Code: U

HGM Classification: N/A

Landform: FOOTSLOPE

Local Relief: HUMMOCKY (MOD) CONCAVE

Microtopography:	Slope:	Aspect:
HUMMOCKY (MOD	2%	

SOIL

Plot No: ST 008

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYACUEPTS, DEPRESSIONAL, 0 TO 7 % SLOPES

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
2-0	Oe									
0-12	BhE	10YR 4/4	60					—	SAL	
		10YR 3/3	30							
		2.5Y 4/1	10							
12-16	BC	7.5YR 3/3	100					ST	LSA	
16-20	C	7.5YR 3/3	100					GR	CSA	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks: Cryoturbated Spodosol

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	NO
NRCS Drainage Class:	SPD
Depth of Organic Soils:	2"
Restrictive Layer Type:	NA
Restrictive Layer Depth:	NA

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

- N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- Y Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? YES

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- NA Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes ____	No X	Depth (inches): NIA
Water Table Present?	Yes X	No ____	Depth (inches): 20
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 16

Episaturation ____ Endosaturation X

Water Source:

Wetland Hydrology Present? YES

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST008
Wetland Status	Upland
Plot Type	WD
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.617227989
Longitude (DD)	-149.59685505

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 009

Project: SELDON RD PH II	Date: 6/9/22
Applicant: ADOT+PF	Investigators: ZB, AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617331 N	Watershed: FISH CREEK
Longitude: 149.597285 W	Location Notes: HISTORIC POND - EUTROPHIED
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	YES
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	YES
Remarks:				**Is the Sampled Area within a Wetland?**	YES

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1.				3.			
2.				4.			

Total Tree Cover: 50% of Total Cover: 20% of Total Cover:

Sapling/Shrub Stratum	IND	DOM	Cover				
1. PICMAR	FW	Y	10	8. LINBOR	FU	N	T
2. MYRGAL	O	Y	10	9. SALPUL	FW	N	1
3. DASFRU	F	Y	7	10. CHACAL	FW	N	T
4. BETGLA	F	N	3	11.			
5. VACCOVA	F	N	5	12.			
6. VACVIT	F	N	3	13.			
7. RHOGRO	F	N	5	14.			
				15.			

Total Shrub Cover: 44 50% of Total Cover: 22 20% of Total Cover: 8.8

Herbaceous Stratum	IND	DOM	Cover				
1. CALCAN	F	Y	10	13.			
2. EQUARV	F	Y	5	14.			
3. RUBCHA	FW	N	2	15.			
4. TRIEUR	FU	N	T	16.			
5. RUBARC	F	N	T	17.			
6. ~~POTPAL~~ COMPAL	O	N	T	18.			
7.				19.			
8.				20.			
9.				21.			
10.				22.			
11.				23.			
12.				24.			
				25. MOSS			30

Total Herb Cover: 17 50% of Total Cover: 8.5 20% of Total Cover: 3.4

1.Open Water 20 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species 10	x 1 =	10
FACW species 13	x 2 =	26
FAC species 38	x 3 =	114
FACU species 0	x 4 =	0
UPL species 0	x 5 =	0
Column Totals: 61 (A)		150 (B)

Prevalence Index = B/A = 2.46

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

Y Prevalence Index is ≤3.0

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

N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

BSW

Cowardin Code: PSS1/4C

HGM Classification: SLOPE

Landform: DEPRESSION

Local Relief: CONCAVE

Microtopography:	Slope:	Aspect:
HUMMOCKY (MED)	0	NA

SOIL

Plot No: ST 009

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: HISTOSOLS

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
8-0	Oi									
0-7	Bg	7.5YR2.5/1	95	C	7.5YR3/4	5	RC		CSACL	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks:

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	YES
NRCS Drainage Class:	VPD
Depth of Organic Soils:	8"
Restrictive Layer Type:	CLAY
Restrictive Layer Depth:	7"

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? YES

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- Y Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- — Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- Y Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- Y Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0
	Episaturation ____		Endosaturation X

Water Source:

Wetland Hydrology Present? YES

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST009
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/9/2022
NWI Classification	PSS1/4C
HGM	Slope
Latitude (DD)	61.6173314868
Longitude (DD)	-149.597285089

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: NE

Photo Type: Vegetation Direction: SW

PHOTO REPORT

Plot Number	ST010
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PSS4/1C
HGM	Slope
Latitude (DD)	61.6173631984
Longitude (DD)	-149.598378318

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST011
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6174135703
Longitude (DD)	-149.598681387

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: NW

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 012

Project: SELDON RD 7H 11	Date: 6/9/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617091 N	Watershed: FISH CREEK
Longitude: 149.602653	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	No
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	No
Remarks:				**Is the Sampled Area within a Wetland?**	No

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. PICMAR	FW	Y	30	3.			
2.				4.			

Total Tree Cover: 30 — 50% of Total Cover: 15 — 20% of Total Cover: 6

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. PICMAR	FW	Y	10	9.			
2. RHOGRO	F	Y	5	10.			
3. VACVIT	F	N	2	11.			
4. LINBOR	FW	N	T	12.			
5.				13.			
6.				14.			
7.				15.			

Total Shrub Cover: 17 — 50% of Total Cover: 8.5 — 20% of Total Cover: 3.4

Herbaceous Stratum	IND	DOM	Cover	13.			
1. CAGLIV	FW	Y	2	14.			
2.				15.			
3.				16.			
4.				17.			
5.				18.			
6.				19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24. MOSS	—		80
12.				25. LICHEN	—		10

Total Herb Cover: 2 — 50% of Total Cover: 1 — 20% of Total Cover: 0.4

1.Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species	0 x 1 =	0
FACW species	40 x 2 =	80
FAC species	7 x 3 =	21
FACU species	2 x 4 =	8
UPL species	0 x 5 =	0
Column Totals:	49 (A)	109 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

Y Prevalence Index is ≤3.0

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

N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

OBSF

Cowardin Code: U

HGM Classification: N/A

Landform: MORAINE

Local Relief: CONVEX

Microtopography:	Slope:	Aspect:
HUMMOCKY (SW)	2%	E

SOIL

Plot No: ST 012

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: KICHATNA SILT LOAM, UNDULATING

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
1-0	Oi									
0-1	A	10YR 2/1	100						SIL	
1-8	Bs/E	2.5Y 4/1	60						SAL	
~~8~~		7.5YR 3/4	10							
		10YR 4/4	30							
8-11	Bw	10YR 4/4	100						CSAL	
11-~~19~~	C	10YR 3/4	100					GR	CSA	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks: CRYOTURBATED SPODOSOL

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland
- N Other (explain in remarks)

Hydric Soils Present?	No
NRCS Drainage Class:	MWD
Depth of Organic Soils:	1"
Restrictive Layer Type:	NA
Restrictive Layer Depth:	NA

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? YES

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- NA Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- N Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present? Yes ____ No X Depth (inches): NA

Water Table Present? Yes ____ No X Depth (inches): NA

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): NA

Episaturation____ Endosaturation____

Water Source:

Wetland Hydrology Present? No

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST012
Wetland Status	Upland
Plot Type	WD
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6170912466
Longitude (DD)	-149.602652902

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST013
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PFO4/SS1B
HGM	Slope
Latitude (DD)	61.6174258613
Longitude (DD)	-149.596803754

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST014
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6182700355
Longitude (DD)	-149.589996427

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST015
Wetland Status	RPW
Plot Type	SC
Plot Date	6/9/2022
NWI Classification	R2UBH
HGM	Riverine Channel
Latitude (DD)	61.6191241295
Longitude (DD)	-149.589753565

Photo Type: Hydrology Direction: NA

Photo Type: Hydrology Direction: W

Photo Type: Vegetation Direction: E

PHOTO REPORT

Plot Number	ST016
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	PSS1/FO1C
HGM	Riverine
Latitude (DD)	61.6193176007
Longitude (DD)	-149.589738094

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST017
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6193920508
Longitude (DD)	-149.589600158

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST018
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6191942133
Longitude (DD)	-149.590183315

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST019
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6189271062
Longitude (DD)	-149.58956437

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST020
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6138913815
Longitude (DD)	-149.611601005

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: SE

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST020
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6189182507
Longitude (DD)	-149.590088282

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: SE

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST022
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6135213392
Longitude (DD)	-149.618223559

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST023
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6134644957
Longitude (DD)	-149.618587645

Photo Type: Vegetation Direction: NE

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SW

PHOTO REPORT

Plot Number	ST024
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/9/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6120788323
Longitude (DD)	-149.622912781

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST025
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6177889983
Longitude (DD)	-149.588328109

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST026
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6179082931
Longitude (DD)	-149.587090345

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: W

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 027

Project: SELDON RD PHASE II	Date: 6/10/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.618008N	Watershed: FISH CREEK
Longitude: 149.585091	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	YES
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	YES
Remarks:				**Is the Sampled Area within a Wetland?**	YES

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. PICMAR	FW	Y	5	3.			
2.				4.			

Total Tree Cover: 5 — 50% of Total Cover: 2.5 — 20% of Total Cover: 1

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. PICMAR	FW	Y	20	9.			
2. BETNEO	FU	N	3	10.			
3. RHOGRO	F	N	3	11.			
4. VACVIT	F	N	T	12.			
5. BETGLA	F	N	T	13.			
6. VACOVA	F	N	2	14.			
7. SALBAR	F	N	T	15.			

Total Shrub Cover: 28 — 50% of Total Cover: 14 — 20% of Total Cover: 5.6

Herbaceous Stratum	IND	DOM	Cover	13.			
1. CALCAN	F	Y	30	14.			
2. RUBCHA	FW	N	3	15.			
3. ~~ROTBAL~~ COMPAL	O	N	2	16.			
4. EQUFLU	O	N	3	17.			
5.				18.			
6.				19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24.			
12.				25.			

Total Herb Cover: 38 — 50% of Total Cover: 19 — 20% of Total Cover: 7.6

1.Open Water 5 — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species 5	x 1 =	5
FACW species 28	x 2 =	56
FAC species 35	x 3 =	105
FACU species 3	x 4 =	12
UPL species 0	x 5 =	0
Column Totals: 71 (A)		178 (B)

Prevalence Index = B/A = 2.51

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

Y Prevalence Index is ≤3.0

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

N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

OBSF

Cowardin Code: PSS4/EMIC

HGM Classification: SLOPE

Landform: DEPRESSION

Local Relief: CONCAVE

Microtopography:	Slope:	Aspect:
HUMMOCKY (MED)	0	NA

SOIL

Plot No: ST 027

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYAQUENTS, DEPRESSIONAL, 0-7 %

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
~~9-0~~	~~Oi~~									
18-9	Oi									
9-0	Oe									

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks:

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- Y Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- Y Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	YES
NRCS Drainage Class:	VPD
Depth of Organic Soils:	18+
Restrictive Layer Type:	NA
Restrictive Layer Depth:	NA

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- Y Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? NO-DRIER

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- NA Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes X	No _____	Depth (inches): 2
Water Table Present?	Yes X	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0
	Episaturation _____	Endosaturation X	

Water Source:

Wetland Hydrology Present? YES

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST027
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	PSS4/EM1C
HGM	Slope
Latitude (DD)	61.6180067072
Longitude (DD)	-149.585068083

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: NE

Photo Type: Vegetation Direction: SW

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 028

Project: SELDON RD PHASE II	Date: 6/10/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617905 N	Watershed:
Longitude: 149.585258 W	Location Notes: HISTORICALLY DISTURBED - APPEARS TO HAVE BEEN CLEARED/LOGGED 10-20 YRS AGO
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	YES
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	YES
Remarks:				**Is the Sampled Area within a Wetland?**	YES

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1.				3.			
2.				4.			

Total Tree Cover: 50% of Total Cover: 20% of Total Cover:

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. PICMAR	FW	N	5	9.			
2. BETNEO	FU	N	3	10.			
3. RHOGRO	F	Y	20	11.			
4. VACVIT	F	N	10	12.			
5. VACULI	F	Y	15	13.			
6. BETGLA	F	N	5	14.			
7.				15.			

Total Shrub Cover: 58 50% of Total Cover: 29 20% of Total Cover: 11.6

Herbaceous Stratum	IND	DOM	Cover	13.			
1. RUBCHA	FW	Y	3	14.			
2. CALCAN	F	Y	10	15.			
3. EQUSYL	F	N	T	16.			
4. CHAANG	FU	N	T	17.			
5.				18.			
6.				19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24.			
12.				25. MOSS			30

Total Herb Cover: 13 50% of Total Cover: 6.5 20% of Total Cover: 2.6

1.Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 8	x 2 =	16
FAC species 60	x 3 =	180
FACU species 3	x 4 =	12
UPL species 0	x 5 =	0
Column Totals: 71 (A)		208 (B)

Prevalence Index = B/A = 2.93

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0

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

N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

LST

Cowardin Code: PSS1B

HGM Classification: SLOPE

Landform: TERRACE

Local Relief: FLAT

Microtopography:	Slope:	Aspect:
HUMMOCKY (SM)	1%	N

SOIL

Plot No: ST 028

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYAQUEPTS, DEPRESSIONAL, 0-7 %

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
11-8	O_i									
8-0	O_e									
0-2	A	10YR 2/1	100						Sil	
2-8	AC	10YR 2/1	100					GR	CSAL	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks:

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- Y Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	YES
NRCS Drainage Class:	VPD
Depth of Organic Soils:	11
Restrictive Layer Type:	N/A
Restrictive Layer Depth:	N/A

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

- N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? NO - DRIER

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- N Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- N Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes ____	No X	Depth (inches): N/A
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 6
	Episaturation ____		Endosaturation X

Water Source:

Wetland Hydrology Present? YES

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST028
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	PSS1B
HGM	Slope
Latitude (DD)	61.6179034983
Longitude (DD)	-149.585234939

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: NW

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 029

Project: SELDON RD PHASE II	Date: 6/10/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617672 N	Watershed: FISH CREEK
Longitude: 149.585428 W	Location Notes: HISTORICALLY DISTURBED - CLEARED/LOGGED
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	No
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	No
Remarks:				**Is the Sampled Area within a Wetland?**	No

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1.				3.			
2.				4.			

Total Tree Cover: 50% of Total Cover: 20% of Total Cover:

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. BETNEO	FU	N	10	9.			
2. PICGLA	FU	N	5	10.			
3. RHOGRO	F	Y	30	11.			
4. VACVIT	F	N	7	12.			
5. VACULI	F	N	5	13.			
6.				14.			
7.				15.			

Total Shrub Cover: 57 50% of Total Cover: 28.5 20% of Total Cover: 11.4

Herbaceous Stratum	IND	DOM	Cover	13.			
1. CALCAN	F	Y	15	14.			
2. CHAANG	FU	N	2	15.			
3. GEOLIV	FU	N	T	16.			
4. EQUSYL	F	N	T	17.			
5.				18.			
6.				19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24.			
12.				25. MOSS	—	—	5

Total Herb Cover: 17 50% of Total Cover: 8.5 20% of Total Cover: 3.4

1. Open Water 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species 0	x 1 =	0
FACW species 0	x 2 =	0
FAC species 57	x 3 =	171
FACU species 17	x 4 =	68
UPL species 0	x 5 =	0
Column Totals: 74 (A)		239 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

N Prevalence Index is ≤3.0

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

N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

WMF

Cowardin Code: U

HGM Classification: N/A

Landform: TERRACE

Local Relief: FLAT

Microtopography:	Slope:	Aspect:
HUMMOCKY (SU)	0	NA

SOIL

Plot No: ST 029

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYAQUEPTS, DEPRESSIONAL, 0-7%

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
6-3	Oi									
3-0	Oe									
0-2	A	10YR 2/2	100						SIL	
2-7	BC	2.5Y 4/3	100						CSAL	
7-16	C	10YR 4/3.5	100						SA	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks:

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	NO
NRCS Drainage Class:	MWD
Depth of Organic Soils:	
Restrictive Layer Type:	N/A
Restrictive Layer Depth:	N/A

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

- N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? NO - DRIER

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- N/A Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- N Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes ___	No X	Depth (inches): N/A
Water Table Present?	Yes ___	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): N/A

Episaturation ___ Endosaturation ___

Water Source:

Wetland Hydrology Present? NO

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST029
Wetland Status	Upland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6176703561
Longitude (DD)	-149.585404785

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: NE

Photo Type: Vegetation Direction: NW

PHOTO REPORT

Plot Number	ST030
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PSS1C
HGM	Slope
Latitude (DD)	61.6177549146
Longitude (DD)	-149.584589583

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST031
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1C
HGM	Slope
Latitude (DD)	61.6177694599
Longitude (DD)	-149.584070883

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST032
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6179375685
Longitude (DD)	-149.583481416

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST033
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6180695903
Longitude (DD)	-149.582400259

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 034

Project: SELDON RD PHASE II	Date: 6/10/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.618533 N	Watershed: FISH CREEK
Longitude: 149.580205 W	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	No
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	NO
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	NO
Remarks:				**Is the Sampled Area within a Wetland?**	No

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. BETNEO	FU	Y	3	3.			
2.				4.			

Total Tree Cover: 3 — 50% of Total Cover: 1.5 — 20% of Total Cover: 0.6

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. BETNEO	FU	Y	12	9.			
2. PICGLA	FU	N	7	10.			
3. RHOGRO	F	Y	10	11.			
4. VACVIT	F	N	5	12.			
5. VACUCI	F	N	5	13.			
6.				14.			
7.				15.			

Total Shrub Cover: 49 — 50% of Total Cover: 24.5 — 20% of Total Cover: 9.8

Herbaceous Stratum	IND	DOM	Cover	13.			
1. CHAANG	FU	Y	3	14.			
2. CALCAN	F	N	T	15.			
3. EQUSYL	F	N	T	16.			
4. CORCAN	FU	Y	5	17.			
5. RUBCHA	FW	N	T	18.			
6. GEOLIN	FU	N	1	19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24.			
12.				25.			

Total Herb Cover: 9 — 50% of Total Cover: 4.5 — 20% of Total Cover: 1.8

1.Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 17 (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species	0 x 1 =	0
FACW species	0 x 2 =	0
FAC species	20 x 3 =	60
FACU species	30 x 4 =	120
UPL species	0 x 5 =	0
Column Totals:	50 (A)	180 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

- N Dominance Test is >50%
- N Prevalence Index is ≤3.0
- N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

WMF

Cowardin Code: U

HGM Classification: N/A

Landform: MOUND

Local Relief: CONVEX

Microtopography:	Slope:	Aspect:
FLAT	2%	N

SOIL

Plot No: ST 034

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYAQUEPTS, DEPRESSIONAL, 0-7%

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
3-0	Oe									
0-2	A	10YR 2/2	100						SIL	
2-5	E	2.5Y 4/1	100						SIL	
5-10	Bs	7.5YR 3/4	100						SAL	
10-18	BC	10YR 3/4	100					GR	LCSA	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks: Spodosol

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	No
NRCS Drainage Class:	MWD
Depth of Organic Soils:	3"
Restrictive Layer Type:	N/A
Restrictive Layer Depth:	N/A

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

- N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? NO - DRIER

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- N/A Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- N Microtopographic Relief (D4)
- N FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

Episaturation ____ Endosaturation ____

Water Source:

Wetland Hydrology Present? No

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST034
Wetland Status	Upland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6185314337
Longitude (DD)	-149.580182032

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: N

PHOTO REPORT

Plot Number	ST035
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1/SS1C
HGM	Slope
Latitude (DD)	61.6186480754
Longitude (DD)	-149.58017876

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST036
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1/SS1C
HGM	Slope
Latitude (DD)	61.6183817144
Longitude (DD)	-149.577899389

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST037
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6183864204
Longitude (DD)	-149.577605219

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST038
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.617268243
Longitude (DD)	-149.570191441

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: NW

Photo Type: Vegetation Direction: SE

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 039

Project: SELDON RD PHASE II	Date: 6/10/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617580N	Watershed: FISH CREEK
Longitude: 149.570008W	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	No
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	No
Remarks:				**Is the Sampled Area within a Wetland?**	No

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. PICMAR	FW	Y	15	3.			
2. POPTRE	FU	Y	15	4.			

Total Tree Cover: 30 — 50% of Total Cover: 15 — 20% of Total Cover: 6

Sapling/Shrub Stratum	IND	DOM	Cover	8.			
1. ROSACI	FU	N	3	9.			
2. POPTRE	FU	Y	5	10.			
3. RHOGRO	F	Y	7	11.			
4. LINBOR	FU	N	2	12.			
5. VACVIT	F	N	T	13.			
6. PICMAR	FW	Y	5	14.			
7.				15.			

Total Shrub Cover: 22 — 50% of Total Cover: 11 — 20% of Total Cover: 4.4

Herbaceous Stratum	IND	DOM	Cover	13.			
1. GEOLIV	FU	Y	4	14.			
2. CALCAN	F	Y	1	15.			
3. EQUARV	F	N	T	16.			
4. CHAANG	FU	N	T	17.			
5.				18.			
6.				19.			
7.				20.			
8.				21.			
9.				22.			
10.				23.			
11.				24.			
12.				25. MOSS	—		30

Total Herb Cover: 5 — 50% of Total Cover: 2.5 — 20% of Total Cover: 1

1.Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57 (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species	0 x 1 =	0
FACW species	20 x 2 =	40
FAC species	8 x 3 =	24
FACU species	29 x 4 =	116
UPL species	0 x 5 =	0
Column Totals:	57 (A)	180 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

- Y Dominance Test is >50%
- N Prevalence Index is ≤3.0
- N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- N Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

OMF

Cowardin Code: U

HGM Classification: N/A

Landform: TERRACE

Local Relief: CONVEX

Microtopography:	Slope:	Aspect:
FLAT	1%	N

SOIL

Plot No: ST 039

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYAQUEPTS, DEPRESSIONAL, 0-7%

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	%	Redox Features Type[1]	Color	%	Loc[2]	Mod[3]	Texture	Horizon Comments
~~0-3~~	~~O~~									
0-6	E/BS	2.5Y 4/1	50						SIL	
		7.5YR 3/4	20							
		10YR 4/2	30							
6-10	Bw	10YR 4/4	100						CSAL	
10-15	C	10YR 3/4	100					VCB ~~VST~~	SAL	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks:

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- N Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- N AA Positive (mineral soil, 60% of horizon 4 inches thick)
- N Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	No
NRCS Drainage Class:	MWD
Depth of Organic Soils:	3"
Restrictive Layer Type:	N/A
Restrictive Layer Depth:	N/A

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

- N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- N High Water Table (A2)
- N Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? NO- DRIER

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- N/A Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- N Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- N Microtopographic Relief (D4)
- N FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes ____	No X	Depth (inches): N/A
Water Table Present?	Yes ____	No X	Depth (inches): N/A
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): N/A

Episaturation ____ Endosaturation ____

Water Source:

Wetland Hydrology Present? No

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST039
Wetland Status	Upland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6175786055
Longitude (DD)	-149.569984421

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

WETLAND DETERMINATION DATA FORM – Alaska Region

Plot No: ST 040

Project: SELDON RD PHASE II	Date: 6/10/22
Applicant: ADOT+PF	Investigators: ZB+AL
Borough/City/Location: MAT-SU	

NAD 83, Decimal Degrees

STANTEC

Latitude: 61.617710N	Watershed: FISH CREEK
Longitude: 149.569803W	Location Notes:
Elevation (ft):	

SUMMARY OF FINDINGS

Are "Normal Circumstances" Present?			YES	Hydrophytic Vegetation Present?	YES
Significantly Disturbed?	VEG	SOILS	HYDRO	Hydric Soils Present?	YES
Naturally Problematic?	VEG	SOILS	HYDRO	Wetland Hydrology Present?	YES
Remarks:				**Is the Sampled Area within a Wetland?**	YES

VEGETATION

T< 1%, P = Present

SUBREGION:

Tree Stratum DBH ≥ 3 inch — 1/10 acre circular plot unless noted, absolute cover recorded

Species	IND	DOM	Cover	Species	IND	DOM	Cover
1. PICMAR	FW	Y	5	3.			
2. BETNEO	FU	Y	7	4.			

Total Tree Cover: 12 — 50% of Total Cover: 6 — 20% of Total Cover: 2.4

Sapling/Shrub Stratum	IND	DOM	Cover				
1. PICMAR	FW	Y	10	8. VACOVA	F	N	1
2. ALNINC	F	Y	7	9.			
3. SALPUL	FW	N	3	10.			
4. ROSACI	FU	Y	5	11.			
5. RHUGRO	F	Y	5	12.			
6. VACVIT	F	N	3	13.			
7. EMPNIG	F	N	1	14.			
				15.			

Total Shrub Cover: 35 — 50% of Total Cover: 17.5 — 20% of Total Cover: 7

Herbaceous Stratum	IND	DOM	Cover				
1. EQUARV	F	Y	15	13.			
2. CALCAN	F	Y	30	14.			
3. CORCAN	FU	N	2	15.			
4. RUBCHA	FW	N	T	16.			
5.				17.			
6.				18.			
7.				19.			
8.				20.			
9.				21.			
10.				22.			
11.				23.			
12.				24.			
				25.			

Total Herb Cover: 47 — 50% of Total Cover: 23.5 — 20% of Total Cover: 9.4

1.Open Water — 2. Bare ground

Remarks: Bryophytes and Lichens may be listed in the Herbaceous columns

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

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

Prevalence Index Worksheet

Total % Cover of:	Multiply by:	
OBL species	0 x 1 =	0
FACW species	18 x 2 =	36
FAC species	62 x 3 =	186
FACU species	14 x 4 =	56
UPL species	0 x 5 =	0
Column Totals:	94 (A)	278 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

- Y — Dominance Test is >50%
- Y — Prevalence Index is ≤3.0
- N — Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- N — Problematic Hydrophytic Vegetation[1]

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

Project Vegetation Type

WMF

Cowardin Code: PEMI/SS4C

HGM Classification: SLOPE

Landform: DEPRESSION

Local Relief: CONCAVE

Microtopography:	Slope:	Aspect:
HUMMOCKY (MED)	0	N/A

SOIL

Plot No: ST 040

Profile Description: Describe to the depth needed to document the presence/absence of soil indicators

Soil Map Unit Name: CRYAQUEPTS, DEPRESSIONAL, 0-7%

Depth (in.)	Horizon Name	Soil Matrix Color (moist)	Soil Matrix %	Redox Features Type[1]	Redox Features Color	Redox Features %	Redox Features Loc[2]	Mod[3]	Texture	Horizon Comments
4-0	Oe									
0-1	Bg1	5Y 4/1	90	C	7.5YR 4/4	10	PL		SIL	
1-10	2C							XGR	SA	
10-14	Bg2	5Y 4/1	85	C	7.5YR 4/4	15	PL		SICL	

[1]Type: C=Concentrations, D=Depletions, OX=Oxidized Roots, RM = Reduced Matrix. [2]Location: PL=Pore Linings, RC=Root Channels, M=Matrix, CS=Coated Sand Grains

Remarks:

[3]Texture Modifiers: Mucky (MK), Peaty (PT), Permafrost (PF) | Coarse Fragments: Gravelly (GR), Cobbly (CB), Stony (ST) (15-35%), 35-60% = Very (V), 60-90% = Extremely (X)

Hydric Soil Indicators Measure from the top of the mineral soil layer except for A1, A2, A3, A4

- N Histosol or Histel (A1)
- N Histic Epipedon (A2)[4]
- N Black Histic (A3)
- N Hydrogen Sulfide (A4)
- N Thick Dark Surfaces (A12)
- N Alaska Gleyed (A13)
- Y Alaska Redox (A14)
- N Alaska Gleyed Pores (A15)

Indicators for Problematic Hydric Soils[5] (See Page 91/Section 4 for Problematic Hydric Soils Details)

- N Depleted Below Dark Surface (A11)
- N Depleted Matrix (F3)
- N Redox Dark Surface (F6)
- N Depleted Dark Surface (F7)
- N Redox Depression (F8)
- N Red Parent Material (F21)
- N Very Shallow Dark Surface (F22)
- N Alaska Color Change (TA4) Give details of color change
- N Alaska Alpine Swales (TA5)
- N Alaska Redox with 2.5Y Hue
- N Alaska Gleyed w/o Hue 5Y or Redder Underlying
- — AA Positive (mineral soil, 60% of horizon 4 inches thick)
- Y Ponded/Flooded/High Water Table (12 inches or higher)
- N Low Organic Matter/Low Iron/High pH Soil/New Wetland

Hydric Soils Present?	YES
NRCS Drainage Class:	VPD
Depth of Organic Soils:	4"
Restrictive Layer Type:	N/A
Restrictive Layer Depth:	N/A

[4]Underlain by mineral soil w/chroma of ≤2

[5]Must have Hydrophytic Vegetation and Primary Hydrology, and an appropriate landscape position unless disturbed or problematic

N Other (explain in remarks)

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (any one indicator is sufficient)

- N Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- N Water Marks (B1)
- N Sediment Deposits (B2)
- N Drift Deposits (B3)
- N Algal Mat or Crust (B4)
- N Iron Deposits (B5)
- N Surface Soil Cracks (B6)
- N Inundation Visible on Aerial Imagery (B7)
- N Sparsely Vegetated Concave Surface (B8)
- N Marl Deposits (B15)
- N Hydrogen Sulfide Odor (C1) (w/in 12")
- N Dry-Season Water Table (C2)**
- N Other (Explain in Remarks)

Are Climatic/Hydrologic Conditions on Site Typical for this time of Year? NO - DRIER

Secondary Indicators (2 or more required)

- N Water-stained Leaves (B9)
- N Drainage Patterns (B10)
- N Oxidized Rhizospheres along Living Roots (C3)(w/in 12")
- — Presence of Reduced Iron (C4)
- N Salt Deposits (C5)
- N Stunted or Stressed Plants (D1)
- Y Geomorphic Position (D2)
- N Shallow Aquitard (D3) (w/in 24", note as restrictive layer)
- Y Microtopographic Relief (D4)
- Y FAC-Neutral Test (D5)

Field Observations (inches from ground surface)

Surface Water Present?	Yes ____	No X	Depth (inches): N/A
Water Table Present?	Yes X	No ____	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Episaturation ____ Endosaturation X

Water Source:

Wetland Hydrology Present? YES

Dry Season Water Table SC, Interior, Western AK:

Mid May – late July
**Mineral Soils 12-24 inches
**Organic Soils 12-40 inches

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

Remarks:

FAC-Neutral Test = #OBL+FW dominants > #FU + UPL dominants; add non-dominants if tie

PHOTO REPORT

Plot Number	ST040
Wetland Status	Wetland
Plot Type	WD
Plot Date	6/10/2022
NWI Classification	PEM1/SS4C
HGM	Slope
Latitude (DD)	61.6177086117
Longitude (DD)	-149.569779182

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST041
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6178468392
Longitude (DD)	-149.570437564

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST042
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6172420419
Longitude (DD)	-149.568434941

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST043
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO4/EM1C
HGM	Slope
Latitude (DD)	61.6170619295
Longitude (DD)	-149.56774882

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST044
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO4/1C
HGM	Slope
Latitude (DD)	61.6168419021
Longitude (DD)	-149.566976591

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST045
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6167500021
Longitude (DD)	-149.567142272

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST046
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO1/EM1C
HGM	Slope
Latitude (DD)	61.6166661903
Longitude (DD)	-149.567408547

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST047
Wetland Status	RPW
Plot Type	SC
Plot Date	6/10/2022
NWI Classification	R3UBH
HGM	Riverine Channel
Latitude (DD)	61.6164863645
Longitude (DD)	-149.566683845

Photo Type: Hydrology Direction: NA

Photo Type: Hydrology Direction: NW

Photo Type: Hydrology Direction: SE

PHOTO REPORT

Plot Number	ST048
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6166076566
Longitude (DD)	-149.566463187

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST049
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PFO4/1C
HGM	Slope
Latitude (DD)	61.616684268
Longitude (DD)	-149.566276628

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST050
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.6165165022
Longitude (DD)	-149.565794211

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST051
Wetland Status	Wetland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	PEM1C
HGM	Slope
Latitude (DD)	61.6164966169
Longitude (DD)	-149.565547488

Photo Type: Hydrology Direction: NA

Photo Type: Vegetation Direction: N

Photo Type: Vegetation Direction: S

PHOTO REPORT

Plot Number	ST052
Wetland Status	Upland
Plot Type	FVP
Plot Date	6/10/2022
NWI Classification	U
HGM	N/A
Latitude (DD)	61.616483975
Longitude (DD)	-149.565213229

Photo Type: Soils Direction: NA

Photo Type: Vegetation Direction: E

Photo Type: Vegetation Direction: W

PHOTO REPORT

Plot Number	ST053
Wetland Status	RPW
Plot Type	SC
Plot Date	6/10/2022
NWI Classification	R3UBH
HGM	Riverine Channel
Latitude (DD)	61.6164245759
Longitude (DD)	-149.565039364

Photo Type: Hydrology Direction: N

Photo Type: Hydrology Direction: NA

Photo Type: Hydrology Direction: S

APPENDIX D

Eagle Nest Survey

Stantec Consulting Services Inc.
725 East Fireweed Lane, Suite 200
Anchorage AK 99503-2245

June 29, 2022

Project/File: Seldon Road Extension Phase II, Project # CFHWY00562

Reference: Eagle Nest Survey

1 Purpose

This is the transmittal reporting the results of the June 2, 2022, eagle nest survey for the Alaska Department of Transportation and Public Facilities (DOT&PF) Seldon Road Extension Phase II (project). The survey was performed by Stantec Consulting Services Inc. (Stantec).

The purpose of the survey is to assist with compliance for protections for Bald and Golden Eagles under the Bald and Golden Eagle Protection Act and the National Environmental Policy Act. These animals are protected from 'take,' which the US Fish and Wildlife Service (USFWS) defines as to *pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb* (50 CFR 22.6). The Endangered Species Act defines take as to *harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct*. An 'incidental take' is when an activity unintentionally causes a take which is associated with, but not the purpose of, the activity (i.e., construction). Incidental take may be expected for a project, it just cannot be intentional.

Construction activity has the potential to cause an incidental take, by causing noise and disturbances, which both have the potential to disturb eagles.

To help manage the incidental take, and the related permitting requirements, professional wildlife biologists provide surveys to locate eagle nests within a specified proximity to proposed projects.

2 Methods

In email conversations with Stantec, Steve Lewis, a USFWS Alaskan raptor wildlife biologist recommended that Stantec complete the nest survey within 660 feet of the project footprint.

Four survey options were considered to complete the eagle nest survey:

- Pedestrian surveys were considered but were not completed because right-of-entry for the numerous private parcels in the study area was not available.
- Unmanned Aerial Vehicle (UAV) surveys were considered but were not completed because of USFWS concerns about potential incidental take on nesting eagles. USFWS indicated that this type

of survey may require an incidental take permit, which would have increased cost and delayed the schedule.

- Fixed wing airplane surveys were considered but are not preferred due to safety concerns.
- Rotor wing surveys were considered and meet the project schedule and satisfy safety requirements.

Rotor wing surveys were selected as the preferred method for this project. Stantec contracted with Soloy Helicopters, LLC (Soloy) of Wasilla, Alaska to conduct the aerial rotor-winged surveys. Soloy is based at the Wasilla Airport, only a few miles from the project.

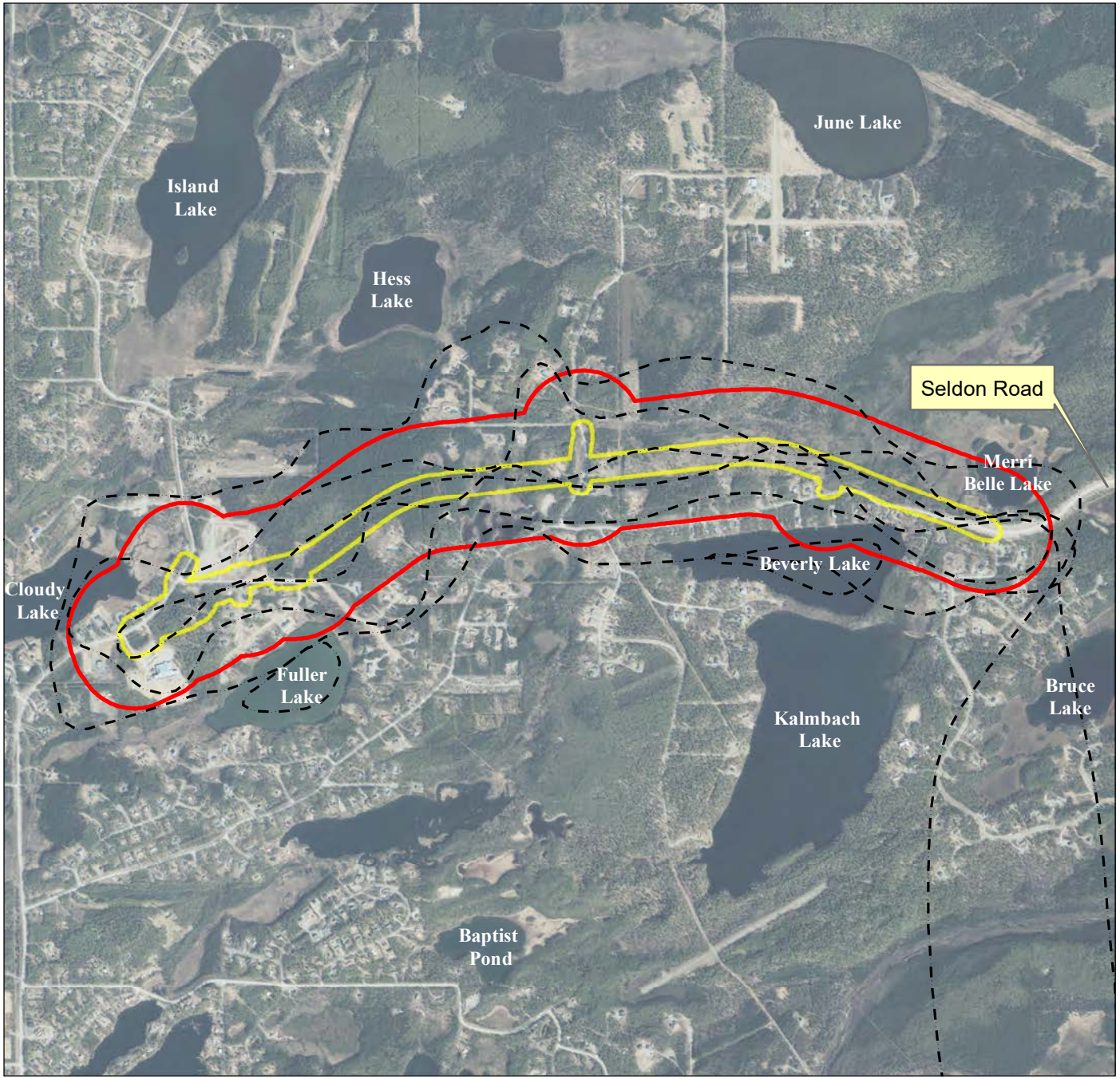
Stantec's Wildlife Biologist Ryan Cooper was the eagle nest observer. Ryan Cooper has a Master of Science in Biology from the University of Alaska Fairbanks and is a licensed private aircraft pilot. Ryan has completed numerous avian surveys (ground and aerial) over more than 12 years' experience in Alaska. Ryan has completed more than 4 summers of intensive aerial survey work in Alaska, including leading teams of more than 8 professionals.

The study area was created by drawing a 660-foot buffer from the project study area (Figure 1). The project study area is slightly larger than the proposed footprint of the project. This method allowed for a conservative (slightly larger) survey area for nests around the project. The rotor wing survey also purposely flew outside the study area, to inspect habitat along the edge of the 660-foot buffer.

Stantec provided a georeferenced map on an electronic tablet to assist the pilot with navigation. This tablet provides live location tracking, so that the pilot can fly transects in the study area. The survey team also had primary and backup Global Positioning System (GPS) devices, binoculars, telephoto cameras, and electronic tablet maps. These extra devices provide redundancy should any single device fail.

Preflight briefings took place between Stantec and the pilot. The pilot performed a pre-flight safety briefing. Stantec performed a pre-flight briefing with the pilot to review best practices on completing eagle nest surveys. Discussion points included (Pagel et al. 2010, Bird and Bildstein 1987):

- Pre-flight briefings should take place to familiarize pilots and observers with the area, objectives, and project.
- The best speeds to fly for nest detection are 20 – 40 knots.
- Flights should conduct multiple passes to view the same area from different angles.
- If hovering near nests is required for species identification, flights should hover for no more than 30 seconds, and at distances of >20 meters.
- Flying eagles should be given deference at all times.
- Disturbance of eagle behavior should be noted by the observer, to better inform future surveys.



Stantec

Project Study Area

Eagle Survey Flight Path

Raptor Study Area (660-foot Buffer)

N

0 1,000 2,000 Feet

(At original document size of 8.5x11)
1:24,000

Notes

1. Coordinate System: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet

2. Background: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Project Location
Wasilla, Alaska

Prepared by RJC on 2022-06-02
TR by ZB on 2022-06-03
IR Review by SK on 2022-06-03

Client/Project
2047079800

Department of Transportation and Public Facilities
Seldon Road Extension Phase II

Figure No.
1

Title
Project Map

- During the flight, the locations of all observed nests should be recorded with GPS. Telephoto pictures should be taken of the nests. The condition and status of the nest (e.g., occupied versus unoccupied) and the species utilizing the nest should be recorded.

3 Results

The USFWS Eagle Nest Atlas is not regularly updated but does provide one source of background information. The atlas was consulted and does not list any nests within the study area (USFWS 2019).

The flight took place between 9:00 and 9:30 am on Thursday, June 2, 2022. The flight paths were laid out to provide overlapping surveys of all the habitat. Multiple passes were conducted from different viewing angles for each part of the project. Flight paths are depicted on Figure 1.

The weather was 65-70 degrees Fahrenheit, with clear blue skies. The sun was bright and shining from the east. There was no precipitation, fog, or other weather hindrances to visibility. Leaf out had already occurred, and trees were in full foliage (Figure 2, 3).

Figure 2: Sample photo #1 of vegetation observed during the survey

Figure 3: Sample photo #2 of vegetation observed during the survey

The survey started with participants familiarizing themselves with the study area, vegetation types, and likely nesting locations. Observers focused on likely eagle and nest locations, such as trees, outcrops, manmade structures, and waterbody shorelines.

Some of the study area has low probability of hosting eagle nesting habitat. These areas included habitat dominated by low spruce trees/shrubs. Separately, other low probability habitats were dominated by slender deciduous trees (e.g., birch). Both habitats have vegetation that is unlikely to have the structural stability to support eagle nests.

Higher probability eagle nest habitat is present in the study area. Observations focused on these areas, and this habitat was more likely to have the observers ask the pilots to insert extra flight paths (e.g., circling back). The study area found three different high probability habitat types:

- Large deciduous trees (e.g., cottonwood) growing as individuals, scattered throughout the study area
- Trees adjacent to shorelines and bodies of water

- Human structures (e.g., powerlines, buildings)

The total flight time, including travel to and from the airport, was 30 minutes (0.5 hours). Six transects were flown, including extra loops over bodies of water to closely examine potential nesting habitat in those areas.

No nests were identified during the survey.

Only one gull (unidentified species) was observed flying during the survey. It was transiting the area. No other birds or wildlife were observed.

4 Discussion

Visibility into vegetation was moderate for the survey. Leaf out had already occurred. This primarily blocked visibility into the body of slender deciduous trees (e.g., birch). While visibility was low *into* the structure of these trees, visibility along the crowns of these trees was moderate. Nests in the trees may have been missed. The reduction in visibility is offset by these trees typically not having the structural strength to provide preferred eagle nest habitat.

The larger deciduous trees (e.g., cottonwood) that provide better nesting habitat had improved visibility. Leaf out typically does not preclude the observation of nests in these trees. The structure of these trees is more open, particularly when viewed from the air. Leaf out may have caused it to be more difficult to observe the status of a nest (e.g. number of fledglings), if any nest had been observed. These trees were also often growing individually, allowing the inspection of individual trees during overflights. No nests were observed in these trees, and no whitewash was observed. Whitewash occurs from eagle defecation while occupying favored perching locations.

5 Recommendations

The USFWS recommended the project survey for eagle nests in a buffer 660 feet around the proposed project. This effort outlined in this report completed the survey according to USFWS recommendations. There is still the possibility for nests due to the following:

- Eagle’s nests could be built after the date of this survey
- Eagle’s nests not detected during this survey

To avoid take, if eagle nests are observed within 660 feet of the project during project planning and/or construction, consultation with the USFWS is recommended to be initiated immediately. This can help avoid permitting delays and/or unintentional take of eagles.

Please reach out with any questions,

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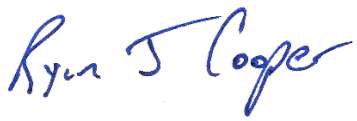

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ryan.cooper@stantec.com

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Nest Survey Form

Observer: Ryan Cooper			Pilot Company: Sam Gawith, Soloy Helicopters						Date: 6/2/2022	
Begin Time: 09:00			Begin Weather: Clear, No Clouds, 65F, Calm Winds						Flight Time: 0:30	
End Time: 09:30			End Weather: Clear, No Clouds, 65F, Calm Winds							
Nest #	**Lat**	**Long**	**Active?**	**Species**	**# Adult**	**# Young**	**Whitewash?**	**Nest Condition**	**Tree**	**Photos**
Notes:										
Notes:										
Notes:										
Notes:										

APPENDIX E

Noise Discipline Report

Seldon Road Extension, Phase II Project - CFHWY00562

Noise Discipline Report

October 2022

Prepared for:

State of Alaska
Department of Transportation and Public Facilities

Prepared by:

Michael Minor & Associates
Portland, Oregon

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EXECUTIVE SUMMARY

This Noise Discipline Report for the Seldon Road Extension, Phase II Project was prepared for the State of Alaska Department of Transportation and Public Facilities. This project would extend Seldon Road with a 2.25-mile two-lane arterial roadway. The purpose of this report is to provide a traffic noise impact and abatement analysis meeting the requirements of the Federal Highway Administration (FHWA) and the Alaska Department of Transportation and Public Facilities (DOT&PF) and in accordance with DOT&PF *2018 Noise Policy* (2018 DOT&PF Policy).

As part of this study, on-site inspection and noise monitoring was performed, with measured noise levels ranging from 44.9 to 58.6 dBA Leq. These measured noise levels, and traffic counts taken at the time of the measurements, were used to validate the *Traffic Noise Model* (TNM) from the FHWA. Using traffic volumes from project traffic engineers, and TNM, noise levels were modeled at 65 independent locations to determine the potential overall noise effects of the project and identify project impacts. Modeled noise levels for the existing conditions ranged from 36 to 56 dBA Leq during the PM peak hour. Under the No-Build conditions, noise levels ranged from 38 to 57 dBA, with variations of 0 to +2 dB when compared to the existing conditions.

Modeled noise levels under the Build alternative range from 45 to 60 dBA Leq, with variations of 0 to +13 dB over the existing noise levels. No sensitive uses are predicted to meet the DOT&PF NAC criteria of 66 dBA or more, nor the substantial increase of +15 dB, therefore no noise abatement was considered.

Information for local governments and agencies to aid in future development is provided in Section 11. In general, residential development within 68 feet on the northside and 78 feet on the southside of the proposed Seldon Road extension would likely have noise levels above the DOT&PF criteria of 66 dBA Leq during peak traffic noise hour. Per DOT&PF policy, sites were also modeled for 64 dBA Leq at 94 feet on the northside and 101 feet on the southside, and 60 dBA Leq at 174 feet on the northside and 188 feet on the southside. Since the northside of the roadway (westbound traffic) has slightly higher traffic volumes, the distance to the 66 dB criteria is slightly higher to the north of Seldon Road than it is on the southside.

Noise from construction would be similar to other highway construction projects. Maximum noise levels to reach 86 dBA during periods of heavy construction at sites within 100 feet from construction activities. Typical DOT&PF construction noise mitigation measures are included in the construction noise analysis section.

Supporting material, including noise monitoring details and traffic counts, are provided in the appendices.

1. INTRODUCTION

This Noise Discipline Report for the Seldon Road Extension, Phase II Project was prepared for the State of Alaska Department of Transportation and Public Facilities. The purpose of this report is to provide a traffic noise impact and abatement analysis meeting the requirements of the Federal Highway Administration (FHWA) and the Alaska Department of Transportation and Public Facilities (DOT&PF). This noise analysis was performed in accordance with the policy and procedures given in the current DOT&PF *2018 Noise Policy* (2018 DOT&PF Policy). See Appendix A for the full 2018 DOT&PF Policy. If traffic noise impacts are identified, abatement that is found to meet DOT&PF criteria will be reviewed by DOT&PF, Matanuska-Susitna Borough, and affected residents, and could be recommended for inclusion in the project.

2. GENERAL PROJECT DESCRIPTION

The purpose of the proposed project is to continue the roadway connection between Church Road and Pittman Road, the next link in the east-west corridor running from Palmer to Houston. The project will provide an alternate route to the Parks Highway, improve overall traffic circulation in the area, and provide better facilities for pedestrians.

The proposed work includes an extension of Seldon Road with a 2.25-mile two-lane arterial roadway, constructing frontage roads to tie into the existing road network, reconstructing portions of adjacent roads to meet current standards and create new intersections, a new 10-foot-wide separated pedestrian pathway on the south side of the new roadway, and a new trailhead parking area at the new Pittman Road intersection.

Figure 1 provides a general vicinity map of the project corridor. Detailed maps are provided in Figures 2 and 3 and identify the proposed improvements. See Appendix B for more information about the project design.

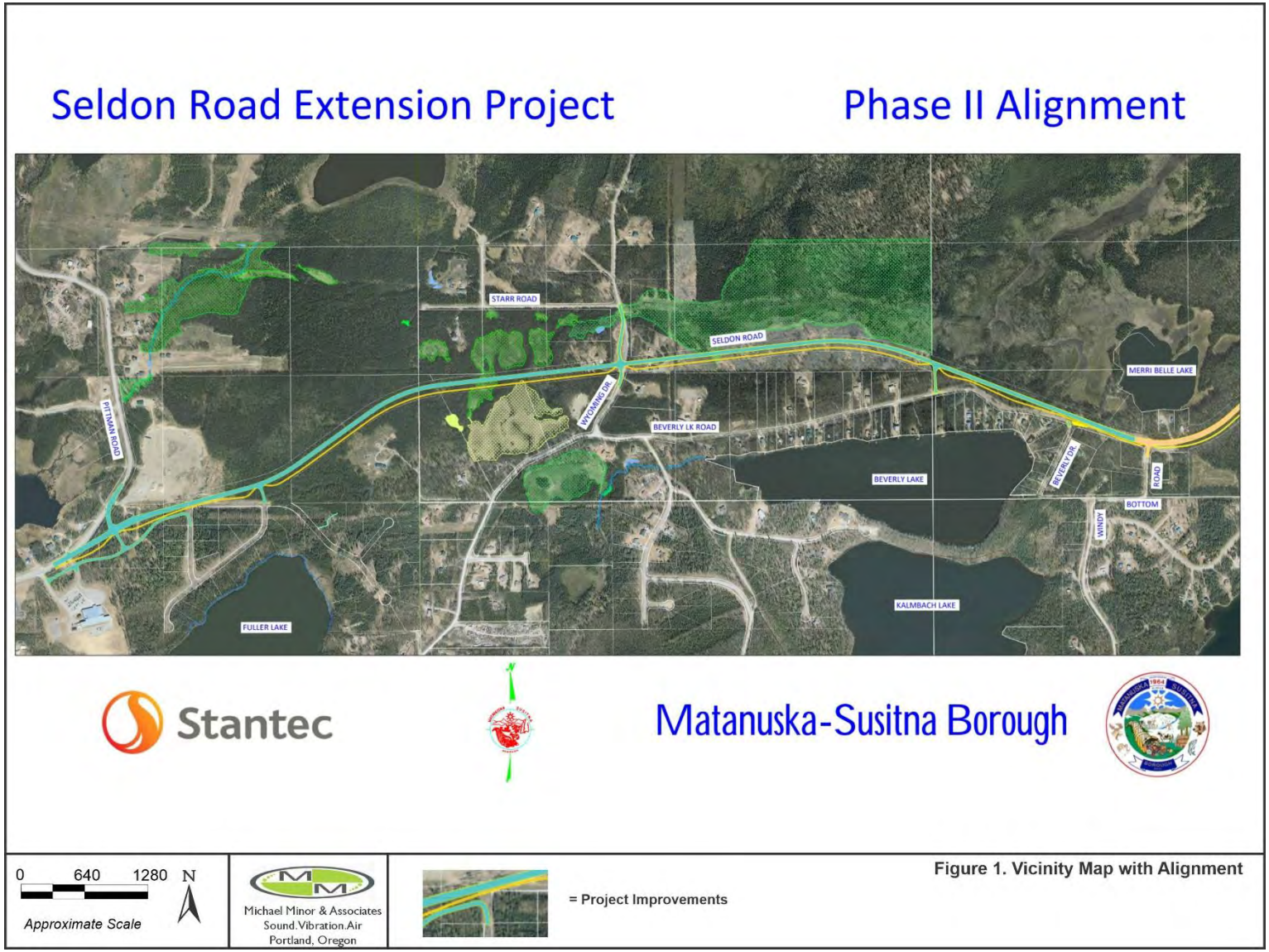


Figure 1. Vicinity Map with Alignment

3. ANALYSIS REQUIREMENT

A Traffic Noise Analysis is required whenever a Type I project is federally funded or requires FHWA approval. A Type I project is a project that includes construction of a new highway or roadway, an increase in the number of traffic lanes, a substantial realignment (horizontal or vertical) of an existing highway, or significant changes to the existing topography around roadways. The proposed project would include a new roadway in a new location, and, therefore, meets the requirements for a detailed noise impact and abatement analysis.

4. METHODOLOGY

This section provides a summary of the methods used for the Traffic Noise Analysis. In general, the methods follow the DOT&PF policy and procedures for a traffic noise study as published in the 2018 DOT&PF Policy. Reference policies, manuals and guides used for this report are provided in Section 13.

4.1. Introduction to Acoustics

Noise is generally defined as unwanted sound. Noise is measured in terms of sound pressure level. It is expressed in decibels (dB), which are defined as 10 log P^2/P^2ref, where P is the root-mean-square (rms) sound pressure and P_{ref} is the reference rms sound pressure of 2 x 10^5 Newtons per square meter.

The number of fluctuation cycles or pressure waves per second of a particular sound is the frequency of the sound. The human ear is less sensitive to higher and lower frequencies than to mid-range frequencies. Therefore, sound level meters used to measure environmental noise generally incorporate a weighing system that filters out higher and lower frequencies in a manner similar to the human ear. This system produces noise measurements that approximate the normal human perception of noise. Measurements made with this weighing system are termed "A-weighted" and are specified as "dBA" readings.

Several noise descriptors are used that take into account the variability of noise over time. The minimum noise level during a measurement period is denoted Lmin. The maximum noise levels (denoted Lmax) that occur during an event, such as the passing of a heavy truck or the flyover of an airplane, can be useful indicators of interference with speech or sleep. The equivalent sound level (Leq) is the level of a constant sound for a specified period of time that has the same sound energy as an actual fluctuating noise over the same period of time. It is an energy average sound level and is the descriptor used for traffic noise studies.

In summary, the noise level descriptors are defined as follows:

Symbol	Description
Leq	The average noise level (energy basis)
Lmin	The minimum noise level
Lmax	The maximum noise level

Noise levels decrease with distance from a noise source. For each doubling of the distance from a point source (such as an engine), noise levels decrease by 6 dBA because of the geometric divergence of the sound waves. Excess noise reduction (attenuation) can be provided by vegetation, terrain, and atmospheric effects that block or absorb noise. The Leq noise level from a line source (such as a road) will decrease by 3 dBA for each doubling of distance (3 dB / DD) because of geometric divergence alone. However, the Lmax from individual vehicles on the road will decrease by 6 dBA / DD. Therefore, the maximum noise levels (Lmax) decrease more rapidly with distance from the road than do the average noise levels (Leq).

It is important to understand how humans perceive noise and changes in noise levels. Subjectively, a 10-dBA change in traffic noise levels is judged by most people to be approximately a twofold change in loudness (e.g., an increase from 50 dBA to 60 dBA causes the loudness to double). A 3-dBA increase in traffic noise is a barely perceptible increase. Therefore, if traffic noise levels increase by 1 to 2 dB, the majority of people may not even notice the change in noise levels.

It is also important to understand the compatibility with land use based on area noise levels. For example, noise levels at night in a quiet rural area are typically between 32 and 35 dBA. Quiet urban nighttime noise levels range from 40 to 50 dBA. Daytime noise levels in a noisy urban area are frequently as high as 70 to 80 dBA.

In summary, areas with PM peak hour traffic noise levels below 50 dBA Leq are typically found in quiet bedroom communities (rural and suburban) that are far from interstate or state highways, major arterial roadways, and urban areas. PM peak hour traffic noise levels from 50 dBA to 60 dBA Leq are typically found in quiet bedroom communities with arterial roadways nearby and primarily passenger traffic accessing the area (little or no truck traffic). Communities with traffic noise levels of 60 dBA to 67 dBA Leq are typically closer to urban areas and / or major arterial roadways, where some truck traffic is present, or near airports.

A more detailed section about acoustics is provided in Appendix C.

4.2. Regulatory Setting and Impact Criteria

The FHWA traffic noise impact criteria, against which the project traffic noise levels are evaluated, are taken from Title 23 of the Code of Federal Regulations (CFR) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. The FHWA criterion applicable for residences is an exterior hourly equivalent sound level (Leq) that

approaches or exceeds 67 dBA. The exterior criterion for places of worship, schools, recreational uses, and similar areas is also 67 dBA Leq. The criterion applicable for hotels, motels, offices, restaurants / bars, and other developed lands is an exterior Leq that approaches or exceeds 72 dBA. There are no FHWA traffic noise impact criteria for retail facilities, industrial, warehousing, undeveloped lands that are not permitted for development, or construction noise. No traffic noise analysis is required for those uses for which no criteria exist.

DOT&PF considers a predicted sound level of 1 dBA below the NAC as sufficient to satisfy the condition of "approach," or approaching the NAC, required by FHWA for all land use categories. For example, where the NAC is 67 dBA for outdoor use at a residence, a noise level of 66 dBA is considered an impact under DOT&PF policy. Receivers are also considered impacted when the peak hour traffic noise level is predicted to increase 15 dBA ("substantial increase") or more between the Existing and Build conditions. Impacts at places of worship, schools, and recreational areas (Category C properties) also occur at 66 dBA or higher in Alaska. Hotel / motel, office building, and restaurant / bar impacts (Category E properties) occur at 71 dBA or higher. Table 1 summarizes the FHWA and the DOT&PF traffic noise abatement criteria.

Table 1. Noise Abatement Criteria (NAC) by Land Use Category				
Activity Category	Activity Criteria in hourly Leq (dBA)		Evaluation Location	Activity Description
	FHWA NAC	DOT&PF NAC		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B[1]	67	66	Exterior	Residential (single and multi-family units)
C[1]	67	66	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E[1]	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	--	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	--	--	Undeveloped lands that are not permitted

Notes:
1. Includes undeveloped lands permitted for this activity category

The primary FHWA categories applicable to this analysis are Category B and Category C, which includes exterior noise levels at residential land uses, including West Lakes Fire Station, and Meadow Lakes Elementary School. Under FHWA policy, the noise impact criteria are applicable to frequently used exterior areas at residences, for example, a backyard deck or patio.

4.3. Analysis and Modeling Procedures

The methodology used for a Type I traffic noise analysis is defined in the 2018 DOT&PF Policy. A summary of the policy follows.

Projected traffic noise level conditions were calculated using the FHWA Traffic Noise Model (TNM). Noise emission levels used in the model were nationwide averages for automobiles, medium trucks, and heavy trucks provided by the FHWA and built into TNM. Model input included traffic volumes, and vehicle type and speed information. The area was evaluated for noise-reducing effects of first row[1] residences, existing outbuildings, roadway depressions, and topography. Actual roadway width and average pavement type were used for existing and future conditions. The effects of controlled intersections (stop signs) were also included where appropriate. A multi-use path proposed along the south side of the Seldon Road Extension was also included in the model to aid in setting topographic conditions.

Traffic volumes and vehicle class percentages used for the modeled roadways were provided by Stantec traffic engineers. The vehicle class percentages include a breakdown of passenger vehicles and light trucks, medium trucks, and heavy trucks. The traffic data used for the analysis is provided in Appendix E. Vehicle speeds used are the current or proposed posted speeds. The PM peak traffic hour on weekdays has the highest total traffic volumes and, therefore, was used throughout the analysis to ensure the worst-case noise levels were predicted.

Finally, it is important to remember that TNM is just that, a traffic noise model. Therefore, the noise levels predicted by TNM is only for traffic on nearby roadways. If there are no nearby roadways, TNM can predict lower than normal noise levels. Under this condition, the measured noise levels in that area are commonly used to supplement the predicted noise levels from TNM. This is frequently the case when construction of a new roadway is in an area where no existing roadways currently exists. In some areas of Phase II of the Seldon Road Extension, the measured noise levels, discussed later in this report, are used to establish an existing background minimum noise level.

1 For the purpose of this report, "first row" refers to noise sensitive receivers located directly adjacent to the Project roadway.

5. AFFECTED ENVIRONMENT

This section provides a summary of the land use in the project area, including planned and permitted developments and project related structure removal.

5.1. Land Use

Land use in the project area includes single-family dwelling units, commercial uses, West Lakes Fire Station 71, Meadow Lakes Elementary School, and undeveloped lands. The highest concentration of single-family residential land uses are south of Zehnder Road just east of Pittman Road and south of Beverly Lake Road. Land uses in the study area are shown on Figure 2 and Figure 3.

5.2. Planned and Permitted Projects

There are currently no planned or permitted projects that would affect this noise study

5.3. Displacements Due to Project Construction

There are no planned displacements as part of this project that would affect the transmission of noise.

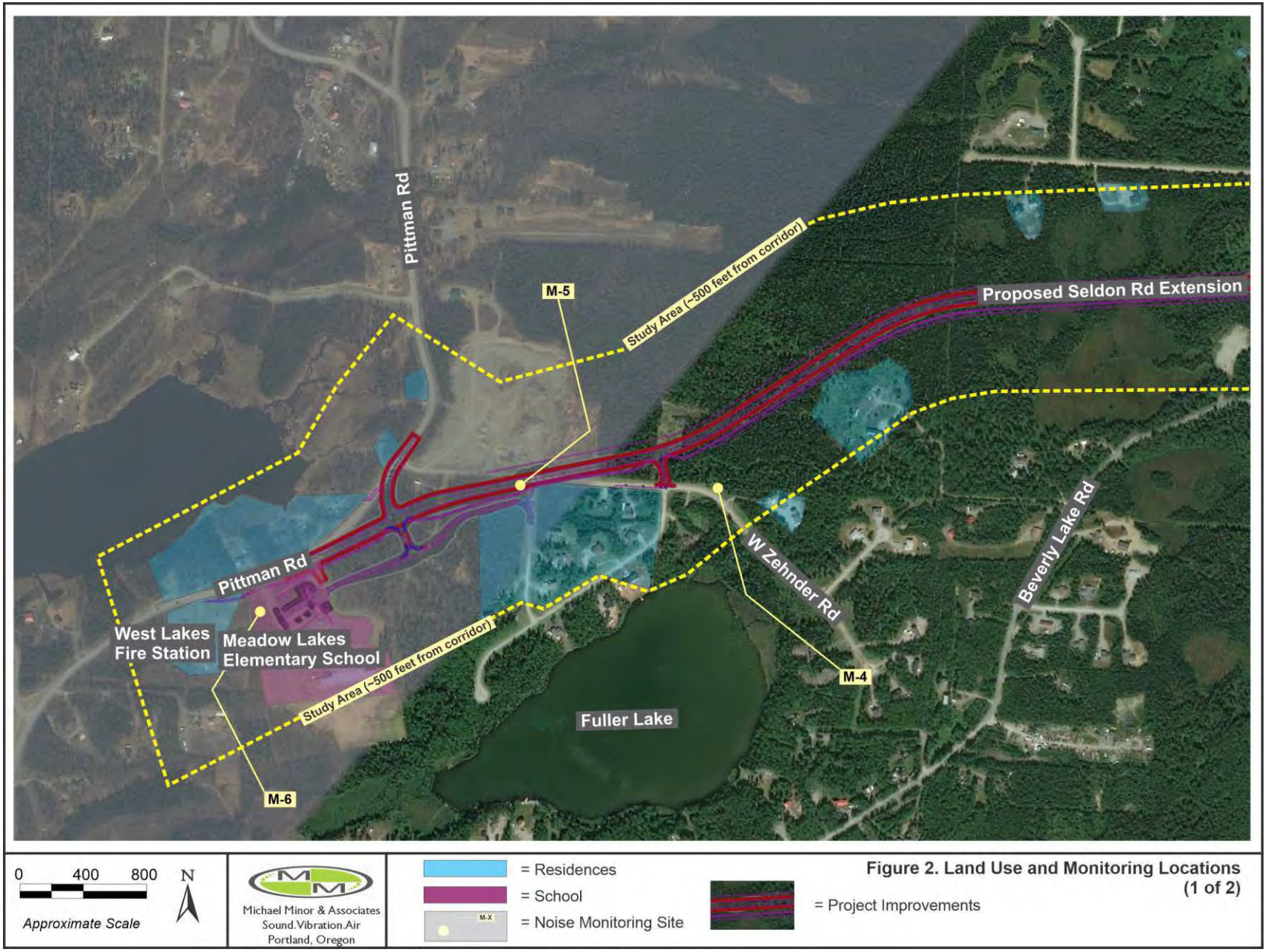


Figure 2. Land Use and Monitoring Locations (1 of 2)

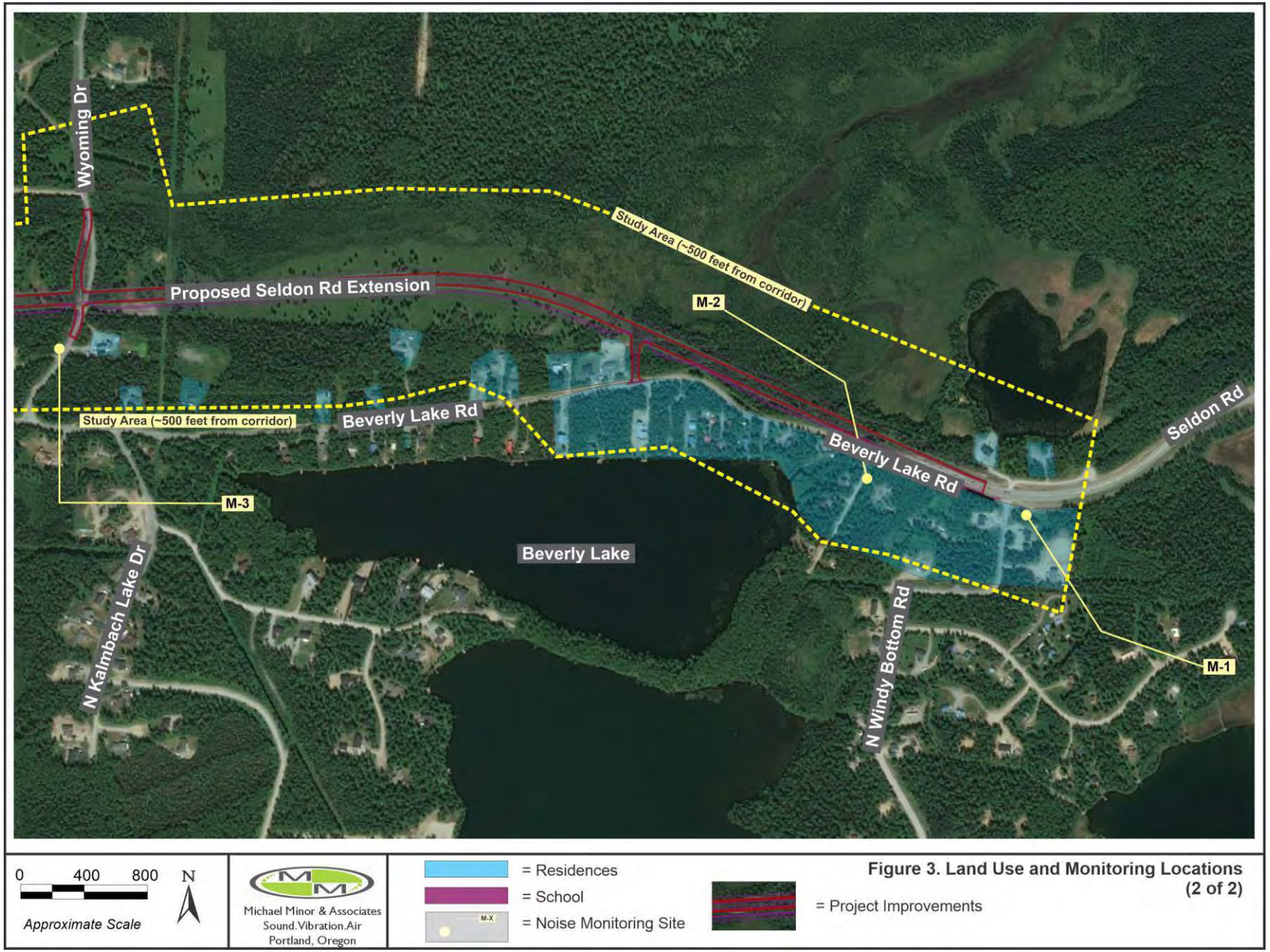


Figure 3. Land Use and Monitoring Locations (2 of 2)

5.4. Noise Monitoring

On-site noise monitoring and traffic counts were performed at six locations and used to verify the noise model as well as provide ambient noise measurements. Figure 2 and Figure 3 provided an overview of the monitoring locations, denoted M-1 through M-6, within the project area. Figures for each noise monitoring sites are included in Appendix D and provide detailed information on each monitoring site, including aerial views, photos showing the exact location of the monitoring site, and traffic counts.

The monitoring for M-1 through M-6 was performed on June 7 and June 8, 2022. Each monitoring site was measured for 30 minutes at approximately the same time each day. Due to the rural area and low traffic volumes the 30-minute measurements were taken instead of the recommended 15-minute measurements by DOT&PF. Noise measurements were taken in accordance with methods provided in the 2018 DOT&PF Policy and in accordance with the American National Standards Institute (ANSI) procedures for community noise measurements (ANSI/ANA S12.9-2013/Part1). The equipment used for noise monitoring were Bruel & Kjaer Type 2238 Sound Level Meters. All meters were calibrated prior to and after the measurement period using a Bruel & Kjaer Type 4231 Sound Level Calibrator. Calibration varied by less than 0.1 dB during the measurement period. Complete system calibration is performed on an annual basis by an accredited instrument calibration laboratory. System calibration is traceable to the National Institute of Standards and Testing (NIST). The system meets or exceeds the requirements for an ANSI Type 1 noise measurement system.

All measurements taken included one-second Leq, Lmax and Lmin. Bruel & Kjaer Type 7820 Evaluation Software was used for data post-processing and calculations of the hour Leq noise levels presented in this report. All data transfer and analysis was performed using a computer interface, preventing any data editing or corruption.

5.5. Measurement Results

The noise monitoring sites were located within the public right-of-way. The measured noise levels on June 7, 2022, ranged from 47.6 to 58.6 dBA Leq and on June 8, 2022, ranged from 44.9 to 57.0 dBA Leq. Traffic on local roads was the primary noise source at most of the monitoring locations.

Table 2 and Table 3 provide summaries of the measured noise levels. A discussion of the measurements for specific areas follows the table.

Table 2. Noise Monitoring Results – June 7, 2022			
Site	**Time**	**Location Description**	**Noise Level[1]**
M-1	8:53-9:23 a.m.	N Windy Bottom Road at Seldon Road	58.6
M-2	9:42-10:12 a.m.	N Beverly Drive at Beverly Lake Road	52.6
M-3	10:26-10:56 a.m.	Wyoming Drive at Beverly Lake Road	57.5
M-4	11:31-12:01 p.m.	W Zehnder Road east of N Monroe Circle	51.9
M-5	12:08-12:38 p.m.	W Zehnder Road at N Fullers Place	57.2
M-6	1:30-1:33 p.m.	Meadow Lakes Elementary School	47.6
Notes: All data is presented as an hourly Leq in short-term measurement of 30 minutes.			

Table 3. Noise Monitoring Results – June 8, 2022			
Site	**Time**	**Location Description**	**Noise Level[1]**
M-1	9:07-9:37 a.m.	N Windy Bottom Road at Seldon Road	57.0
M-2	9:50-10:20 a.m.	N Beverly Drive at Beverly Lake Road	50.0
M-3	10:32-11:02 a.m.	Wyoming Drive at Beverly Lake Road	54.4
M-4	11:18-11:48 a.m.	W Zehnder Road east of N Monroe Circle	46.6
M-5	11:56-12:26 p.m.	W Zehnder Road at N Fullers Place	49.0
M-6	12:37-1:07 p.m.	Meadow Lakes Elementary School	44.9
Notes: 1. All data is presented as an hourly Leq in short-term measurement of 30 minutes.			

As required by ADOT&PF, if measurements at any one site differ by more than 3-dB, justification must be provided. This occurred at sites M-3, M-4 and M-5. The differences are as follows:

- At site M-3 the levels are 3.1 dB higher on June 7 when compared to June 8: Reason for the higher reading on June 7 is due to 5 medium trucks on June 7 and none on June 8.

- At site M-4 the levels are 5.3 dB higher on June 7 when compared to June 8: Reason for the higher levels on June 7 is due to this area being a dirt road with very low traffic, and on June 7 there were 5 vehicles and only two on June 8.

- At site M-5 the levels are 8.2 dB higher on June 7 when compared to June 8: Reason for the higher levels on June 7 is due to this area being a dirt road with very low traffic, and on June 7 there were 5 vehicles and only 2 on June 8 in addition to two plane overflights on June 7 and none on June 8.

6. NOISE MODEL VALIDATION AND RECEIVERS

As previously described, the noise levels used for describing the existing and future conditions are taken from the FHWA TNM. This section describes the noise model validation results and selection of receivers used for modeling noise levels related to the Seldon Road Extension, Phase II Project.

6.1. Noise Model Validation

Traffic noise levels were modeled to assess the agreement of calculated and measured noise levels. For model verification, the actual traffic counts and speeds as observed during the noise monitoring were used as inputs to the model. The noise model was used to predict the traffic noise levels of each of the modeling sites. A comparison of the monitoring locations is provided in Table 4 and Table 5.

Table 4. Measured vs. Modeled Noise Levels, June 7, 2022

Receiver	Measured (dBA)	Modeled (dBA)	Difference (dBA)
M-1	58.6	56.9	-1.7
M-2	52.6	50.4	-2.2
M-3	57.5	58.5	1.0
M-4	51.9	---[1]	---[1]
M-5	57.2	---[1]	---[1]
M-6	47.6	48.5	.09

Notes:

1. Data at M-4 and M-5 is used to determine ambient noise levels where there is little to no traffic. See section 6.2 for a detailed explanation.

Table 5. Measured vs. Modeled Noise Levels, June 8, 2022

Receiver	Measured (dBA)	Modeled (dBA)	Difference (dBA)
M-1	57.0	56.8	-0.2
M-2	50.0	52.9	2.9
M-3	54.4	52.5	-1.9
M-4	46.6	---[1]	---[1]
M-5	49.0	---[1]	---[1]
M-6	44.9	44.7	-0.2

Notes:

1. Data at M-4 and M-5 is used to determine ambient noise levels where there is little to no traffic. See section 6.2 for a detailed explanation.

The modeled and measured noise results at M-1, M-2, M-3, and M-6 agree within +/- 3 dBA. Because a 3 dBA change in noise levels is barely perceptible to a person with average

hearing, the agreement of +/- 3 dBA or less is considered an acceptable deviation for modeled and measured noise levels.

6.2. Ambient Measurements at Sites M-4 and M-5

As previously discussed, TNM only predicts noise from traffic, and in some areas, the traffic volumes are so low, other noise sources, including residential activity, snow machines and all-terrain vehicles, aircraft over-flights, wind, and birds are responsible for the background noise levels. Therefore, the measurements taken at sites M-4 and M-5 are used to establish background noise levels at the residential areas along W Zehnder Road, Beverly Lake Road, and other areas far from roadways in the western part of the project area. In these areas, there is nothing except the very limited local traffic, and therefore, to establish the background noise levels at these residences, measurements were taken on W Zehnder Road near N Monroe Circle and N Fullers Place.

The sound level meter picks up all noise sources in the area and can be a more accurate measurement of the existing background noise level than that produced by the TNM model, which would only include traffic noise on North Pitman Road. M-4 is over 800 feet from North Pitman Road, and M-5 is over 1800 feet from North Pitman Road, both with notable topographical shielding of traffic noise from North Pitman Road. Therefore, the main purpose for the measurements at M-4 and M-5 was to establish a baseline for the existing noise levels to be used if the modeled noise levels were lower than the measured levels. Therefore, the measured noise was used in the existing, future no-build, and future build models when modeled noise levels in the area were less than 47 dBA Leq, the lowest overall measured noise level near residences near W Zehnder Road.

6.3. Selection of Receivers

Noise modeling sites were selected to represent noise-sensitive areas located within the project corridor where traffic noise impacts are most likely to occur. More specifically, the receiver locations were located in areas of frequent outdoor human use such as a front or back yard. Figure 4 through Figure 7 provide aerial views of all project noise modeling locations and project elements. Although some receivers appear to point to an area with no visible structure, there are homes at each of the locations, however, they are too new to show up on the available aerial mapping.

Traffic noise modeling was performed using the FHWA TNM. Existing and future traffic noise levels were predicted throughout the project corridor at 65 locations representing single-family residences, West Lakes Fire Station, and Meadow Lakes Elementary School. In many instances, one receiver location is used to represent a group of two or more neighboring residences expected to experience similar sound levels for both existing and future conditions and have comparable noise reductions if a noise barrier was constructed. Receiver locations are denoted R-1 through R-65.

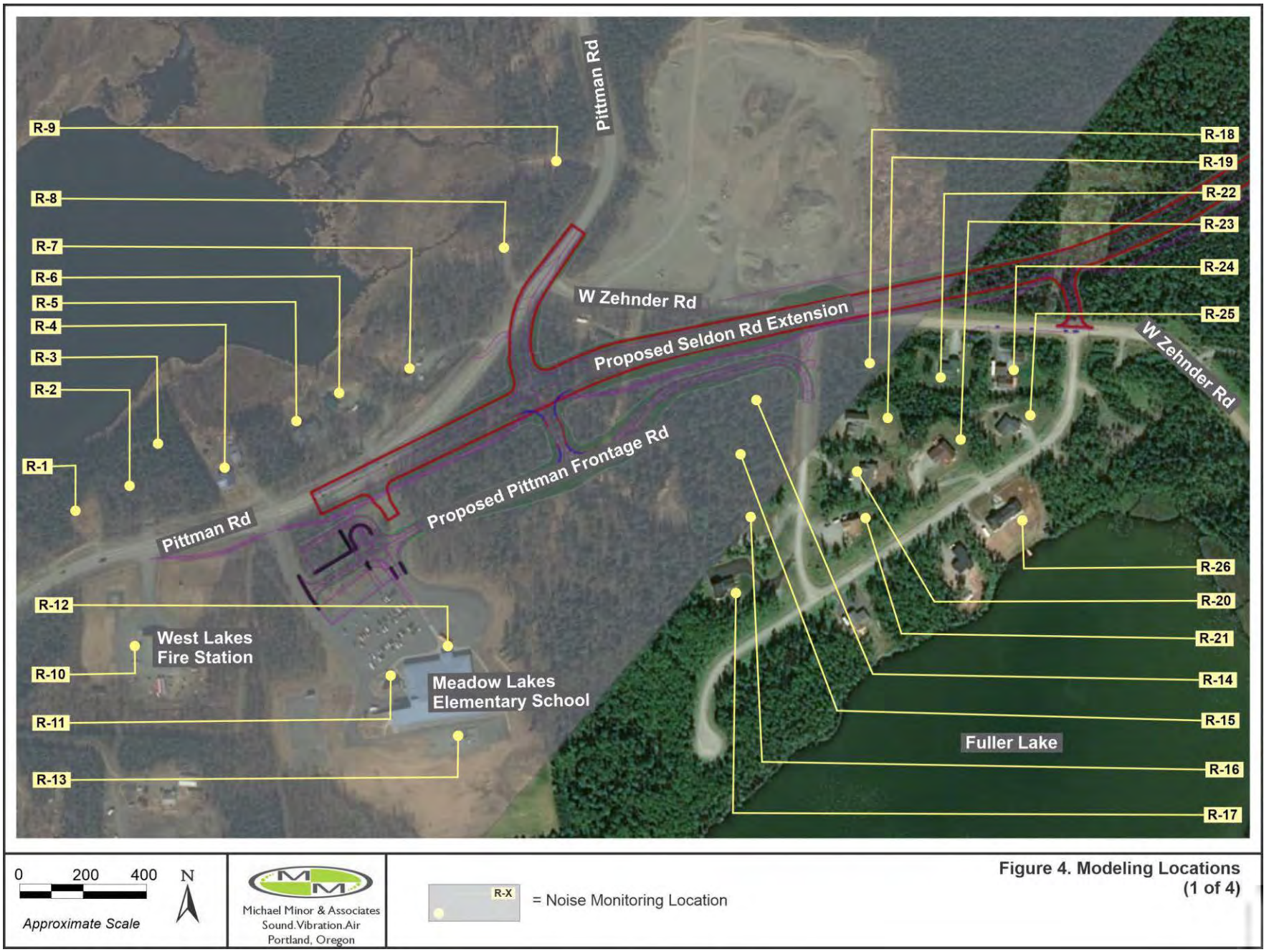


Figure 4. Modeling Locations (1 of 4)

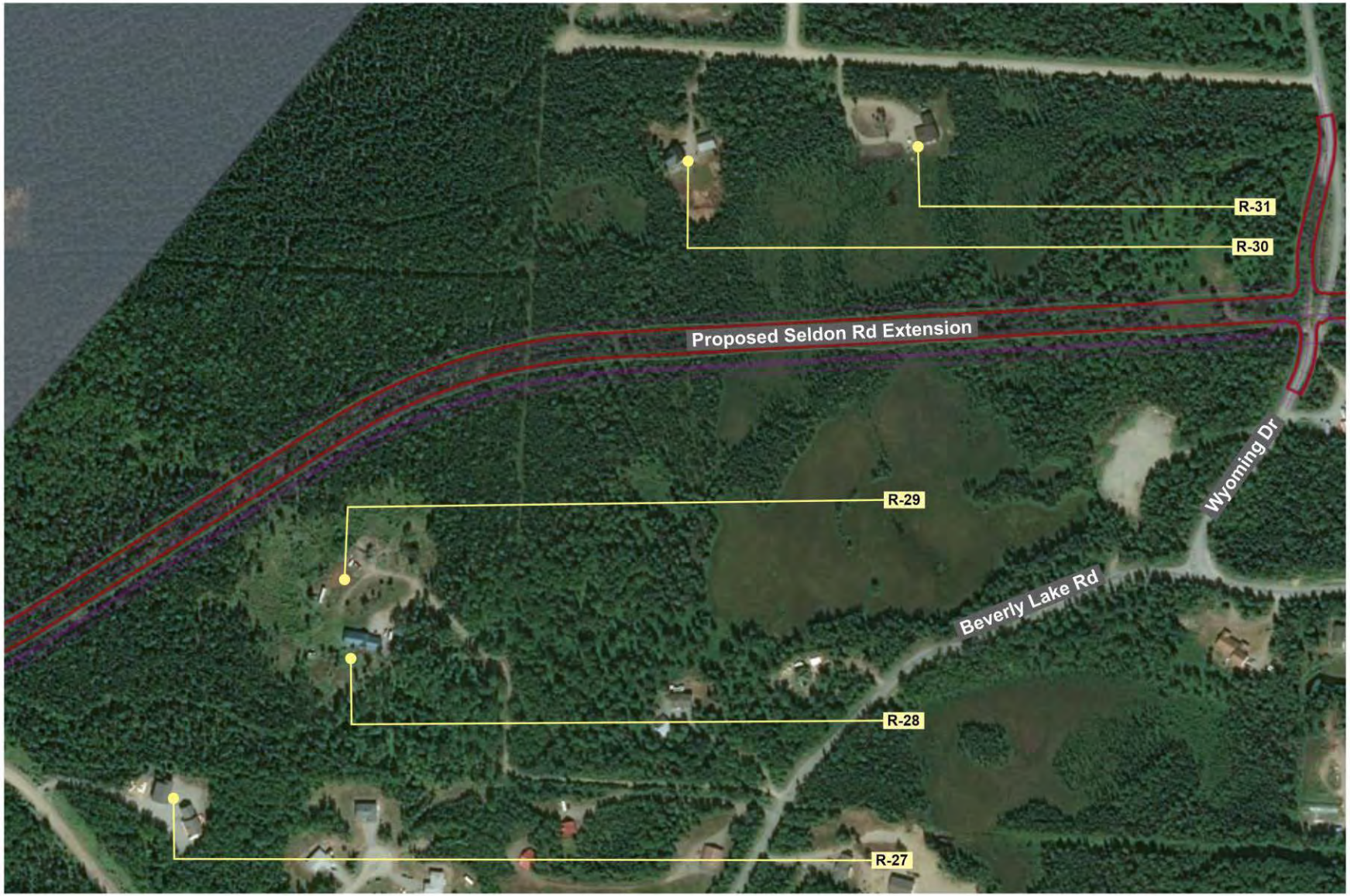


Figure 5. Modeling Locations (2 of 4)

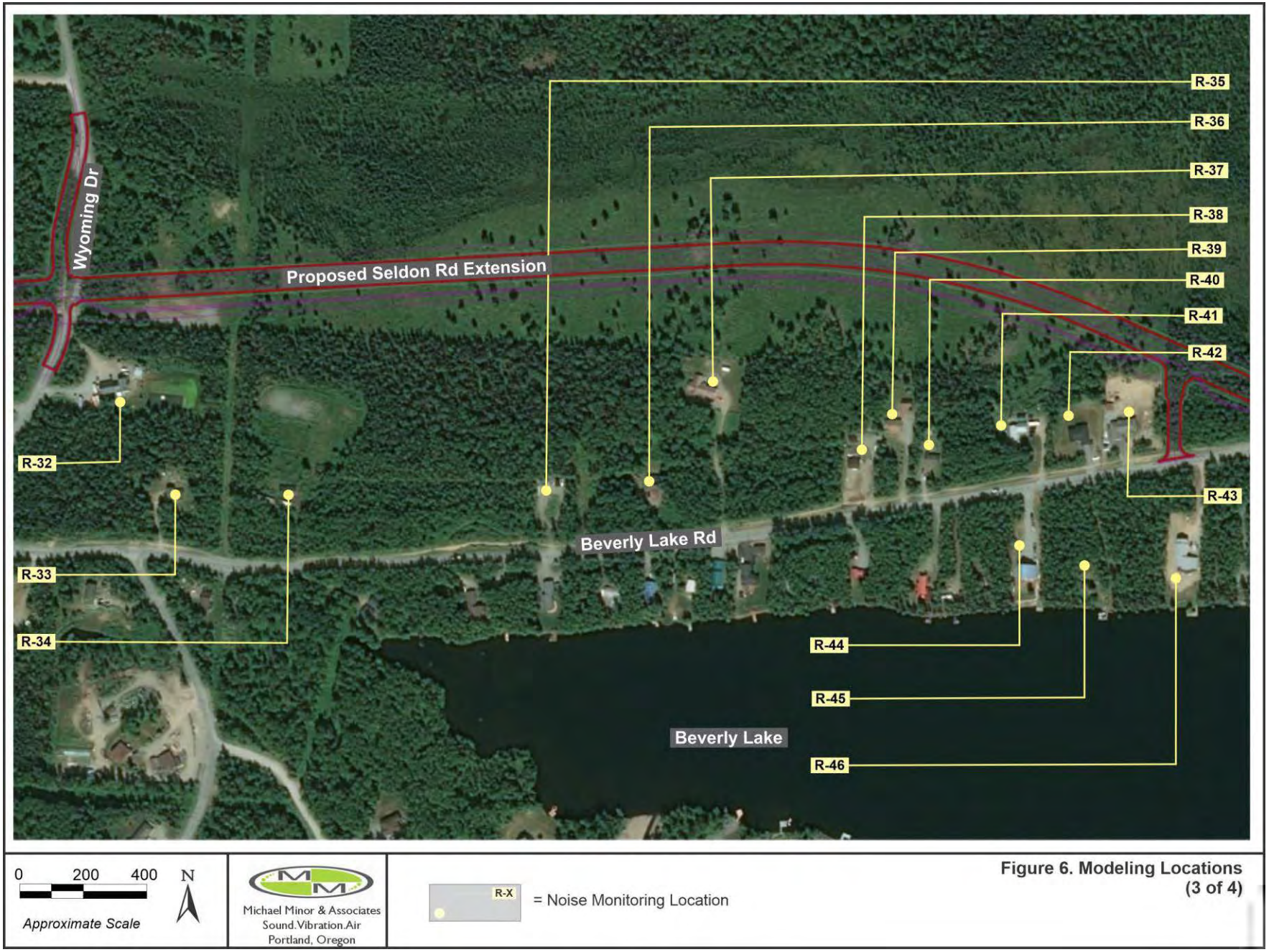


Figure 6. Modeling Locations (3 of 4)

Figure 7. Modeling Locations (4 of 4)

7. EXISTING ENVIRONMENT

Modeling was performed for 65 representative receiver locations shown on Figures 4 through 7 for the existing conditions (year 2022) PM peak traffic hour. Overall, noise levels ranged from 36 to 56 dBA Leq, and no sensitive uses meet the DOT&PF NAC. The lowest noise levels were at the Meadow Lakes Elementary school, modeled at 36-40 dBA Leq. Note that in those locations in the most rural, western part of the corridor, far from any TNM roadways, the minimum measured noise level of 47 dBA Leq was used if levels were below 47 dBA (based on M-4 minimum measured Leq). Table 6 provides a summary of the existing modeled traffic noise levels.

8. FUTURE CONDITIONS

The following two sections provide the modeling results of the year 2040 with (Build) and without (No-Build) the project.

8.1. Future Build Alternative

The same noise modeling locations used to model the existing conditions were modeled for the Build Alternative with year 2048 PM peak hour traffic conditions. The TNM inputs include the proposed Seldon Road Extension, proposed Pittman Frontage Road, proposed Beverly Lake Road and W Zehnder Road connectors from the proposed Seldon Road extension, modifications to W Zehnder Road, the new intersection of Wyoming Drive and Seldon Road, the proposed multi-use path parking lot at the Meadow Lakes Elementary School, the proposed multi-use path south of the proposed Seldon Road extension, and year 2048 traffic volumes and speeds prepared for this project. The traffic noise levels for the Build Alternative are the worst-case noise levels for the year 2048.

Future Build alternative traffic noise levels are predicted to range from 45 to 60 dBA Leq during the PM peak hour. Noise levels in the project area change by 0 to +13 dB over the existing conditions. No sensitive uses are predicted to meet the DOT&PF NAC. The areas with the highest noise increases are typically at the east and west ends of the project corridor where residences are in higher concentrations and closest to the proposed Seldon Road extension. The western rural area was set to a minimum of 47 dBA Leq based on M-4, although under the Build conditions, there are only two sites with TNM predicted levels below 47 dBA, R-26 and R-27. Table 6 provides a summary of the future build traffic noise levels for R-1 through R-65.

8.2. Future No-Build Conditions

Noise modeling was also performed for the No-Build conditions using traffic volumes projected for the year 2048 with no changes to any of the roadways in the project corridor. The same 65 noise modeling locations used to model the existing conditions were modeled

for the No-Build conditions PM peak hour traffic conditions. The TNM inputs include year 2048 traffic data.

Based on the future projected traffic data for the year 2048 without the proposed project, increased traffic volumes along Pittman Road and Beverly Lake Road produced slightly higher noise levels. Overall, noise levels ranged from 38 to 57 dBA Leq. Changes in noise levels range 0 to +2 dB over the existing conditions, and no sensitive uses meet the DOT&PF NAC. The western rural area was set to a minimum of 47 dBA Leq based on M-4. Table 6 provides a summary of the no-build modeled traffic noise levels.

Table 6. Traffic Noise Level Summary										
Receiver[1]	Land Use[2]	Units[3]	Criteria (dBA Leq)[4]	Existing Conditions (2022)	Build Alternative (2048)				No-Build Alternative (2048)	
				Level (Leq dBA)[5]	Level (Leq dBA)[5]	Vs. Exist (in dB)[6]	No. of Impacts[7]	Vs. No-Build (in dB)[8]	Level (Leq dBA)[5]	Vs. Exist (in dB)[9]
R-1	B	1	66	52	59	7	0	5	54	2
R-2	B	1	66	48	55	7	0	5	50	2
R-3	B	1	66	45	52	7	0	5	47	2
R-4	B	1	66	49	55	6	0	5	50	1
R-5	B	1	66	48	54	6	0	4	50	2
R-6	B	1	66	48	54	6	0	5	49	1
R-7	B	1	66	49	54	5	0	3	51	2
R-8	B	1	66	52	54	2	0	1	53	1
R-9	B	1	66	56	58	2	0	1	57	1
R-10	B	1	66	47	52	5	0	4	48	1
R-11	C	1	66	40	48	8	0	6	42	2
R-12	C	1	66	40	48	8	0	6	42	2
R-13	C	1	66	36	45	9	0	7	38	2
R-14[10]	B	1	66	47 (42)	58	11	0	11	47 (44)	0
R-15[10]	B	1	66	47 (41)	54	7	0	7	47 (42)	0
R-16[10]	B	1	66	47 (40)	50	3	0	3	47 (41)	0
R-17[10]	B	1	66	47 (37)	47	0	0	0	47 (38)	0
R-18[10]	B	1	66	47 (38)	60	13	0	13	47 (40)	0
R-19[10]	B	1	66	47 (39)	56	9	0	9	47 (41)	0
R-20[10]	B	1	66	47 (39)	52	5	0	5	47 (40)	0
R-21[10]	B	1	66	47 (36)	49	2	0	2	47 (37)	0
R-22[10]	B	1	66	47 (36)	57	10	0	10	47 (38)	0

Table 6. Traffic Noise Level Summary										
Receiver[1]	Land Use[2]	Units[3]	Criteria (dBA Leq)[4]	Existing Conditions (2022)	Build Alternative (2048)				No-Build Alternative (2048)	
				Level (Leq dBA)[5]	Level (Leq dBA)[5]	Vs. Exist (in dB)[6]	No. of Impacts[7]	Vs. No-Build (in dB)[8]	Level (Leq dBA)[5]	Vs. Exist (in dB)[9]
R-23[10]	B	1	66	47 (35)	53	6	0	6	47 (37)	0
R-24[10]	B	1	66	47 (34)	54	7	0	7	47 (35)	0
R-25[10]	B	1	66	47 (32)	51	4	0	4	47 (33)	0
R-26[10]	B	1	66	47 (32)	47	0	0	0	47 (33)	0
R-27[10]	B	1	66	47 (29)	47	0	0	0	47 (31)	0
R-28[10]	B	1	66	47 (29)	50	3	0	3	47 (31)	0
R-29[10]	B	1	66	47 (29)	53	6	0	6	47(31)	0
R-30[10]	B	1	66	47 (30)	51	4	0	4	47 (31)	0
R-31[10]	B	1	66	47 (31)	50	3	0	3	47 (33)	0
R-32[10]	B	1	66	47 (40)	55	8	0	8	47 (42)	0
R-33	B	1	66	49	50	1	0	-1	51	2
R-34	B	1	66	47	49	2	0	0	49	2
R-35	B	1	66	48	50	2	0	0	50	2
R-36	B	1	66	47	50	3	0	1	49	2
R-37[10]	B	1	66	47 (40)	53	6	0	6	47 (41)	0
R-38	B	1	66	48	51	3	0	1	50	2
R-39[10]	B	1	66	47 (44)	53	6	0	6	47 (45)	0
R-40	B	1	66	50	52	2	0	1	51	1
R-41	B	1	66	48	53	5	0	3	50	2
R-42	B	1	66	50	55	5	0	4	51	1
R-43	B	1	66	50	58	8	0	7	51	1
R-44	B	1	66	47	49	2	0	0	49	2

Table 6. Traffic Noise Level Summary										
Receiver[1]	Land Use[2]	Units[3]	Criteria (dBA Leq)[4]	Existing Conditions (2022)	Build Alternative (2048)				No-Build Alternative (2048)	
				Level (Leq dBA)[5]	Level (Leq dBA)[5]	Vs. Exist (in dB)[6]	No. of Impacts[7]	Vs. No-Build (in dB)[8]	Level (Leq dBA)[5]	Vs. Exist (in dB)[9]
R-45[10]	B	1	66	47 (44)	48	1	0	1	47 (45)	0
R-46[10]	B	1	66	47 (43)	48	1	0	1	47 (45)	0
R-47	B	1	66	45	52	7	0	5	47	2
R-48	B	1	66	48	53	5	0	3	50	2
R-49	B	1	66	50	54	4	0	3	51	1
R-50	B	1	66	49	52	3	0	1	51	2
R-51	B	1	66	51	54	3	0	1	53	2
R-52	B	1	66	53	57	4	0	2	55	2
R-53	B	1	66	55	59	4	0	2	57	2
R-54	B	1	66	46	54	8	0	6	48	2
R-55	B	1	66	42	52	10	0	8	44	2
R-56	B	1	66	45	56	11	0	9	47	2
R-57	B	1	66	45	52	7	0	6	46	1
R-58	B	1	66	49	57	8	0	6	51	2
R-59	B	1	66	50	56	6	0	4	52	2
R-60	B	1	66	49	55	6	0	5	50	1
R-61	B	1	66	39	48	9	0	7	41	2
R-62	B	1	66	44	52	8	0	6	46	2
R-63	B	1	66	44	51	7	0	5	46	2
R-64	B	1	66	47	56	9	0	7	49	2
R-65	B	1	66	50	56	6	0	4	52	2
Summary		**Minimum**		36	45	0	0	-1	38	0

Table 6. Traffic Noise Level Summary

Receiver[1]	Land Use[2]	Units[3]	Criteria (dBA Leq)[4]	Existing Conditions (2022)	Build Alternative (2048)				No-Build Alternative (2048)	
				Level (Leq dBA)[5]	Level (Leq dBA)[5]	Vs. Exist (in dB)[6]	No. of Impacts[7]	Vs. No-Build (in dB)[8]	Level (Leq dBA)[5]	Vs. Exist (in dB)[9]
		Maximum		56	60	13	0	13	57	2
		Total Meeting NAC					**0**			
Substantial increase noise impacts with future noise levels 15 dB or more above existing =							**0**			

Notes:

1. All receivers are shown in Figures 4 through 7.
2. FHWA land use: See Table 1.
3. Number of uses or dwellings represented by each receiver.
4. DOT&PF traffic noise abatement criteria by land use type.
5. Predicted peak hour noise levels in dBA Leq for condition stated, taken from TNM version 2.5 with bold red typeface used to indicate noise levels that are equal to or greater than the NAC of 66 dBA Leq for Category B and C uses.
6. Change in noise: Build compared to existing conditions.
7. Number of uses predicted to meet or exceed the DOT&PF NAC, either the level criteria or substantial increase criteria.
8. Change in noise: Build compared to No-Build for reference only.
9. Change in noise: No-Build compared to existing conditions.
10. The measured noise levels from M-4 were used when the modeled levels were below 47 dB – modeled noise levels are provided in parentheses, e.g., 47 (40).

The summary shows that one receiver, R-33, will have reduced noise levels under the Build Alternative. R-33 has a lower noise level under the Build Alternative because it is located along Beverly Lake Road, which has lower traffic volumes because most traffic is diverted to the new Seldon Road extension. Furthermore, the reason that R-33 has a lower noise level when R-34 has no change, is because R-33 is slightly closer to Beverly Lake Road.

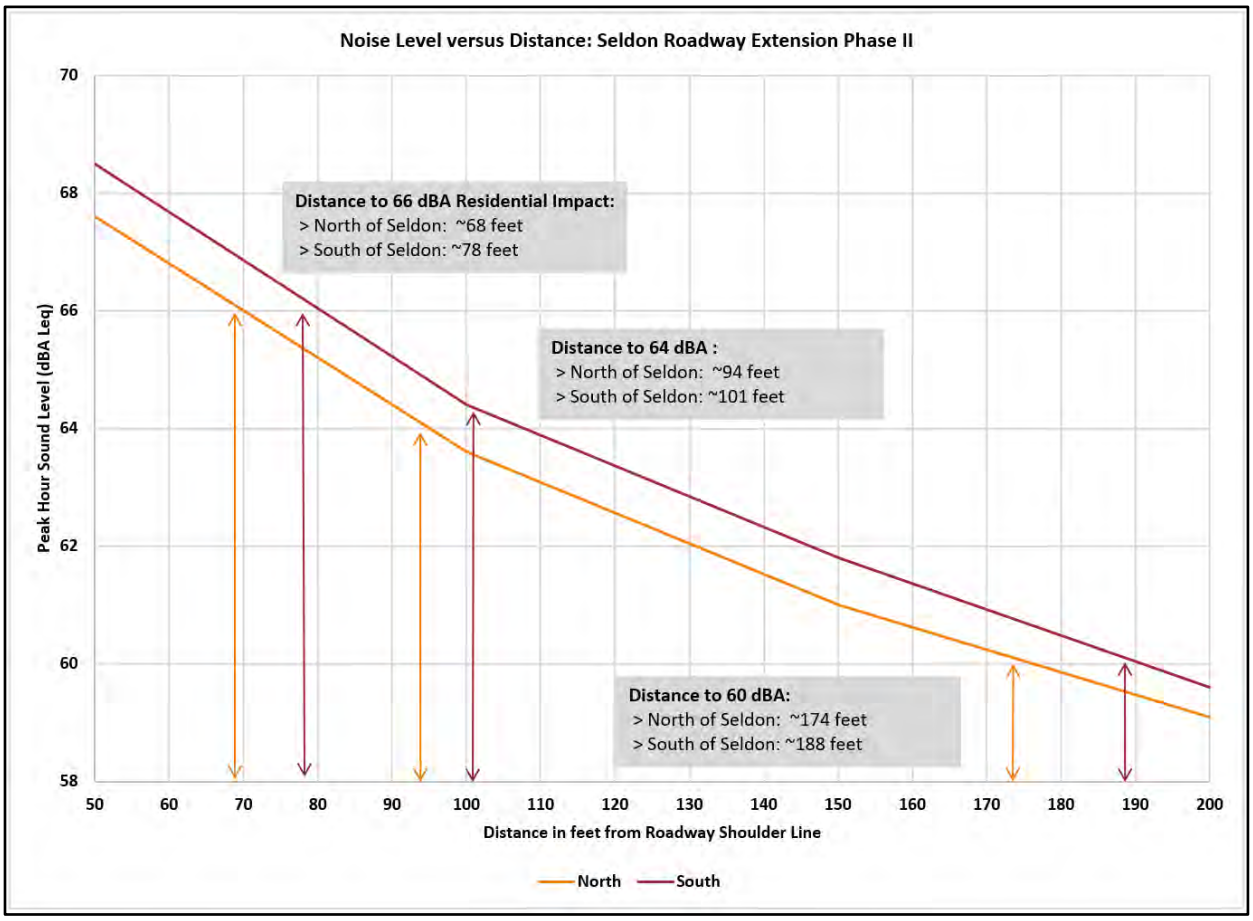
9. NOISE ABATEMENT MEASURES

No noise abatement measures were considered since there are no receivers that meet the impact NAC of 66 dB nor any substantial increases of +15 dB.

10. FUTURE NOISE LEVELS ON UNDELVEOPED LANDS

To aid in future developments along and near the corridor, the distance to the 66 dBA Leq residential impact criteria on each side of the Seldon Road Extension was predicted using future (2045) traffic volumes. Based on the noise modeling, any new developments along the northside of the proposed Seldon Road corridor would need to be at least 68 feet from the shoulder of the roadway. On the southside of Seldon, that distance is increased to 78 feet. 64 dBA Leq would occur at 94 feet along the northside and 101 feet on the southside. 60 dBA Leq would occur at 174 feet on the northside and 188 feet on the southside. Since the northside of the roadway has slightly higher traffic volumes the distance to the 66 dB criteria is slightly lower than it is on the southside of the roadway. Figure 8 is a graph of noise levels versus distance along the north and southsides of Seldon Road during peak hour.

Figure 8. Distance to Residential Impact Criteria



11.CONSTRUCTION NOISE ANALYSIS

Construction noise would result from normal construction activities. Noise levels for these activities can be expected to reach 86 dBA during periods of heavy construction at sites within 100 feet from construction activities. Typical peak noise levels that can be expected at approximately 100 feet from different construction activities are listed in Table 7.

Table 7. Estimated Peak Hour Construction Noise Levels

Construction Phase	Loudest Equipment	Noise Level (dBA Lmax)[a]
Clearing and grubbing	Bulldozer, backhoe	83
Earthwork	Scraper, bulldozer	85
Foundation	Backhoe, loader	82
Base preparation	Trucks, bulldozer, compactor	85
Paving	Paver, trucks	86

a. Estimated maximum noise levels for typical activities measured at 100 feet from the source

11.1. Construction Noise Mitigation Measures

The following construction noise abatement measures could be included in the project specifications.

- No construction shall be performed within 1,000 feet of an occupied dwelling unit on Sundays, legal holidays, or between the hours of 10 p.m. and 7 a.m. on other days, without the approval of the DOT&PF construction project manager.
- All equipment used shall have sound-control devices no less effective than those provided on the original equipment. No equipment shall have unmuffled exhaust.
- All equipment shall comply with pertinent equipment noise standards of the U.S. Environmental Protection Agency.

If a specific noise impact complaint is received during construction of the project, the contractor may be required to implement one or more of the following noise mitigation measures at the contractor's expense, as directed by the project manager:

- Locate stationary construction equipment as far from nearby noise-sensitive properties as feasible.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
- Notify nearby residents whenever extremely noisy work will be occurring.
- Install temporary or portable acoustic barriers around stationary construction noise sources.

- Operate electrically powered equipment using line voltage power or solar power.

12. CONCLUSION

Traffic noise modeling was performed for 65 receiver locations representing several residential uses and Meadow Lakes Elementary School. Inputs to the model included peak-traffic volume and speed provided by Stantec and existing, future No-Build, and future Build Alternative roadways and traffic controls. The existing (2022) modeled noise levels range 36 to 56 dBA Leq.

Under the 2048 Future Build alternative, noise levels throughout the modeled areas range from 45 to 60 dBA Leq, with noise level changes of 0 to +13 dBA when compared to existing conditions. Noise levels for the future No-Build (2048) conditions range from 38 to 57 dB. Although the project will result in changes to noise levels throughout the area, there are no noise sensitive uses that meet or exceed the NAC under the Build Alternative and therefore, no traffic noise mitigation was evaluated.

13. REFERENCES

Alaska Department of Transportation and Public Facilities. 2018 Noise Policy. DOT & PF November 2018.

American National Standards Institute. Quantities and Procedures for Description and Measurement of Environmental Sound - Part 1: Basic Quantities and Definitions. Ansi/ASA S12.9-2013/Part1. February 27, 2013.

U.S. Department of Transportation. FHWA Highway Traffic Noise Model User's Guide, Report No. FHWA-PD-96-009. Federal Highway Administration, Washington, D.C. January 1998.

U.S. Department of Transportation. FHWA Highway Traffic Noise Model User's Guide (Version 2.5 Addendum) Final Report. Federal Highway Administration, Washington, D.C. April 2004.

Appendix A: DOT&PF Noise Policy

THE STATE
of ALASKA
GOVERNOR BILL WALKER

Department of Transportation and Public Facilities

Statewide Design & Engineering Services
Environmental Section

3132 Channel Drive
Juneau, Alaska 99811-2500
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Toll free: 800-467-6955
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November 1, 2018

Sandra Garcia-Aline
P.O. Box 21648
Juneau, AK 99802-1648

Reference: DOT&PF Noise Policy

Dear Mrs. Garcia-Aline,

The Alaska Department of Transportation and Public Facilities (DOT&PF) hereby submits a copy of the DOT&PF Noise Policy dated October 2018 for review and approval by the Federal Highway Administration Alaska Division. We would like to thank your staff and Aileen Varela-Margolles of your Washington D.C. office for your review and comments on previous drafts. This policy is an update of DOT&PFs April 2011 policy and in response to changes in 23CFR 772. It is our intent that this Noise Policy will go into effect upon your approval.

Your approval of the attached noise policy is hereby requested. If you have any questions or wish to discuss further do not hesitate to contact Douglas Kolwaite of my office.

Approved: _____

(Sandra Garcia-Aline, Division Administrator, FHWA Alaska Division)

Sincerely,

Kenneth J. Fisher, P.E.
Chief Engineer

Enclosure: DOT&PF Noise Policy (October 2018)

Alaska Department of Transportation & Public Facilities

Noise Policy

November 2018

ACRONYMS USED IN THIS DOCUMENT

ADT: Average Daily Traffic

ANSI: American National Standards Institute

BR: Benefitted Receptor

CE: Categorical Exclusion (as defined in 23 CFR Part 771)

CEI: Cost Effectiveness Index

CFR: Code of Federal Regulations

CPI: Consumer Price Index

dB: Decibel

dBA: Decibel when referring to an A-weighted sound level

DHV: Design Hourly Volume (for traffic)

DOT&PF: Alaska Department of Transportation and Public Facilities

EA: Environmental Assessment (as defined in 23 CFR 771)

EIS: Environmental Impact Statement (as defined in 23 CFR 771)

FHWA: Federal Highway Administration

FHWA TNM: Federal Highway Administration Traffic Noise Model

FONSI: Finding of No Significant Impact (as defined in 23 CFR 771)

LOS: Level of Service

L_{eq}: Equivalent sound level in dBA

$L_{eq}(h)$: One-hour equivalent sound level in dBA

NAC: Noise Abatement Criterion

NEPA: National Environmental Policy Act

NSA: Noise Study Areas

RCNM: Road Construction Noise Model

REM: Regional Environmental Manager

ROD: Record of Decision (as defined in 23 CFR 771)

TABLE OF CONTENTS

1.0 INTRODUCTION

This document contains the Alaska Department of Transportation and Public Facilities (DOT&PF) policy on highway traffic noise and construction noise as it affects the human environment. The policy describes DOT&PF's implementation of the requirements of the Federal Highway Administration (FHWA) Noise Standard at Title 23 Code of Federal Regulations (CFR) Part 772 (see Appendix A.) The policy also addresses how traffic noise is considered on state funded projects. DOT&PF developed this policy which was then, reviewed and approved by FHWA, and is considered effective as of the date on the title page. This policy replaces DOT&PF's Noise Policy dated April 2011.

During the rapid expansion of the Interstate Highway System and other roadways in the 20th century, communities began to recognize highway traffic noise and construction noise as important environmental impacts. In the 1972 Federal-aid Highway Act, Congress required FHWA to develop a noise standard for new Federal-aid highway projects. While providing national criteria and requirements for all highway agencies, the FHWA Noise Standard gives highway agencies flexibility that reflects state-specific attitudes and objectives in approaching the problem of highway traffic and construction noise. This document contains DOT&PF's policy on how highway traffic and construction noise impacts are defined, how noise abatement is evaluated, and how noise abatement decisions are made.

The FHWA Noise Standard requires noise abatement measures be considered when traffic noise impacts are identified for Type I federal projects, as defined in 23 CFR 772.5. Noise abatement measures found to be feasible and reasonable must be constructed for Type I federal projects. Feasible and reasonable noise abatement measures are eligible for federal-aid participation at the same ratio or percentage as other eligible project costs. As part of NEPA's requirement to consider the environmental effects of federally funded projects, the impact determinations and abatement considerations will be used to support development of the NEPA document.

2.0 PURPOSE

This policy outlines the DOT&PF program to implement the FHWA Noise Standards found in 23 CFR 772. These standards include traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials. Where FHWA has given DOT&PF flexibility in implementing the standard, this policy describes the DOT&PF approach to implementation. This policy also defines how the DOT&PF addresses traffic noise in State-funded projects.

The State of Alaska does not have any traffic noise regulations. It is the DOT&PF policy to follow the federal standards for traffic noise prediction requirements, and noise analyses. Federal noise abatement criteria are followed to determine whether noise

impacts exist and if abatement is feasible and reasonable, however, the decision to provide noise abatement on State-funded projects follows slightly different procedures (see Section 9.0 of this policy, *State-Funded Projects.*)

3.0 DEFINITIONS

A-Weighted Sound Level: The sound level in decibels measured with a frequency weighting network corresponding to the A-scale on a standard Type 1 or 2 sound level meter as specified by ANSI S1.4-1983 (R2006)/ANSI S1.4a-1985 (R2006,) American National Standard Specification for Sound Level meters (or latest version.) This is the most widely used weighting system for assessing transportation-related noise because it best approximates sound as heard by the normal human ear.

Acoustically Representative: A receptor location that represents the same land use category and magnitude of noise as another location. Proper acoustical representation includes nearly the same roadway geometry, topography, traffic flow, and distance from source to receptor.

Benefited Receptor: A receptor that receives at least a 5dBA noise reduction from an abatement measure.

Common Noise Environment: A group of receptors within the same Activity Category in 23 CFR 772, Table 1 that are exposed to similar noise sources and levels; traffic volumes, traffic mix, and speed; and topographic features. Generally, common noise environments occur between two secondary noise sources such as interchanges, intersections, and cross-roads.

Date of Development: The date at which land is permitted for development.

Date of Public Knowledge: The date of approval of the Categorical Exclusion (CE), the Finding of No Significant Impact (FONSI), the Record of Decision (ROD), or in the case of a state-funded project, approval of the State Environmental Checklist.

Decibel (dB): A unit of sound pressure level which denotes the ratio between two sound pressures; the number of decibels is 10 times the base 10 logarithm of this ratio.

Design Hourly Volume (DHV): The 30th highest hourly volume of the future year traffic assigned for the design, expressed in vehicles per hour.

Design Year: The future year used to estimate the probable traffic volume for which a highway is designed. This is determined by adding the project's design life to the anticipated date of construction completion.

Existing Noise Levels: The representative worst noise hour level resulting from the combination of natural and mechanical sources and human activity usually present in a particular area.

Feasibility: The combination of acoustical and engineering factors considered in the evaluation of a noise abatement measure.

Federal-aid Project: Any project utilizing federal funds for one or more phases (*i.e.*, Environmental, Design, Right of Way, or Construction) or that is otherwise subject to federal approval.

Field Measurement Point: Physical noise measurement site within the noise study boundary used to validate TNM and document existing noise levels. A field noise measurement point may also serve as a receiver in the TNM.

First Row Receptors: Closest residences or businesses impacted by noise from the highway facility.

Impacted Receptor: A noise-sensitive location for which a traffic noise impact has been calculated.

L_{eq}: The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with $L_{eq}(h)$ being the L_{eq} for one hour.

Multifamily Dwelling: A residential structure containing more than one residence. Each residence with a private exterior space in a multifamily dwelling shall be counted as one receptor when determining impacted receptors and benefited receptors and determining barrier reasonableness.

Noise Analysis Boundary: Limits of analysis for the proposed project(s). Boundaries typically extend 500 feet on either side of a proposed projects improvements; however, some geometric conditions and traffic volumes/mixes may cause noise impacts beyond 500 feet. The boundaries must encompass all potential noise impacts.

Noise Barrier: A physical obstruction constructed between the highway noise source and the noise sensitive receptor(s) that lowers the noise level by reducing the transmission of sound, including stand-alone noise walls, noise berms (earth or other material), and combination berm/wall systems.

Noise Contour: A line on a map representing points of equal sound level (similar to ground elevation contour lines on a topographic map.)

Noise Reduction Design Goal: The minimum desired sound level reduction, determined by calculating the difference between future build noise levels with and without abatement. The DOT&PF noise reduction design goal is 7 dBA.

Permitted: A definite commitment to develop land with an approved specific design of land use activities as evidenced by the issuance of a building permit.

Property Owner: An individual or group of individuals that holds a title, deed, or other legal documentation of ownership of a property or a residence.

Reasonableness: The combination of social, economic, and environmental factors considered in the evaluation of a noise abatement measure.

Receiver: A modeling point in the FHWA Traffic Noise Model (TNM) at which sound levels are predicted. An individual receiver may represent multiple receptors.

Receptor: A discrete or representative location (such as a residence or an activity area on a parcel of land) being studied for noise impacts.

Residence: A dwelling unit, such as a single family home or each dwelling unit in a multifamily dwelling.

Resident: Someone who resides at a dwelling unit. May not necessarily be the owner of the dwelling unit.

State-funded Project: A project that is solely funded by state monies appropriated by the Alaska State Legislature and requires no federal approvals for implementation.

Statement of Likelihood: A statement provided in the environmental clearance document based on the feasibility and reasonableness analysis completed at the time the environmental document is being approved.

Substantial Noise Increase: One of two types of highway traffic noise impacts. For a Type I project, DOT&PF defines it as an increase in design year noise levels of 15 or more dBA over the existing noise level.

Traffic Noise Impacts: Design year build condition noise levels that create a substantial noise increase (defined above) over existing noise levels or design year build condition noise levels that approach or exceed the Noise Abatement Criteria (NAC) listed in Table 1 in 23 CFR 772 for the future build condition. The DOT&PF defines "approach" as one dBA below the NAC.

Type I Project: As defined in 23 CFR 772:
(1) The construction of a highway on new location; or,
(2) The physical alteration of an existing highway where there is either:
    (i) Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or,
    (ii) Substantial Vertical Alteration. A project that removes shielding therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor; or,

(3) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,
(4) The addition of an auxiliary lane, except when the auxiliary lane is a turn lane; or,
(5) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,
(6) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,
(7) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza.
(8) If a project is determined to be a Type I project under this definition, the entire project area as defined in the environmental document is a Type I project.

Type II Project: A Federal or Federal aid highway project for noise abatement on an existing highway. For a Type II project to be eligible for Federal-aid funding, the highway agency must develop and implement a Type II program in accordance with section 772.7(e). DOT&PF does not have a Type II program.

Type III Project: A Federal or Federal aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

Worst Noise Hour: A period of 60 minutes within a 24-hour day that reflects the noisiest hour resulting from the maximum amount of traffic traveling at the greatest speed. The worst noise hour may be when the vehicle mix is dominated by truck traffic rather than a high volume of automobile traffic.

4.0 APPLICABILITY

This Noise Policy applies to all Federal or Federal Aid Highway Projects authorized under Title 23, United States Code; therefore, this Noise Policy applies to any highway or multimodal project that:

1. Requires FHWA approval regardless of funding sources, or

2. Is funded with Federal Aid highway funds. This includes Federal or Federal-aid projects that are administered by Local Public Agencies as well as Alaska DOT&PF.

All projects without an approved noise report before the 2018 Noise Policy update adoption date shall use the 2018 Noise Policy update. Projects that have an approved noise report under the 2011 Noise Policy may continue to use the existing noise report or prepare a new noise report using the 2018 Noise Policy update. Projects that have an approved noise report under the 2011 Noise Policy have three years from the adoption date of the 2018 Noise Policy update to obtain an Authority to Proceed with Construction; otherwise, the noise report shall be updated to conform to the 2018 Noise Policy update.

4.1 Type I Projects

The requirements of this policy apply uniformly and consistently to all Type I federal projects, Type I State-funded projects (see Section 9.0 of this policy), and Type I Toll Authority projects within the State of Alaska. If a project is determined to be a Type I project under the definition outlined in 23 CFR 772.5, then the entire project area as defined in the environmental document is a Type I project.

4.2 Type II Projects

DOT&PF has elected not to participate in the voluntary Type II noise program; therefore, no noise analyses will be completed for Type II projects. Type II projects are not discussed further in this policy.

4.3 Type III Projects

Type III projects are those projects that neither meet the definition of a Type I or Type II project nor require a noise analysis or consideration of noise abatement. However, it may be necessary to consider conducting a construction noise analyses in certain circumstances (*e.g.*, pile driving near residences.) Construction noise is discussed in Section 8.0 of this policy.

5.0 ANALYSIS OF TRAFFIC NOISE IMPACTS

It is important to determine early on in project scoping if a noise analysis is necessary, in order to accurately plan a project timeline.

5.1 Minimum Qualifications for Noise Analysts

DOT&PF highway traffic noise analyses must be performed by qualified personnel who have successfully completed training in the area of highway noise analysis and are proficient in the use of the latest version of the FHWA-approved traffic noise modeling software. These personnel must have experience conducting noise analysis studies for highway transportation projects and have a working knowledge of this policy and the regulations outlined in 23 CFR 772.

5.2 General Requirements for All Type I Projects

All Type I projects require a noise analysis; however, projects may not require the same level of analysis. This policy describes three levels of analyses:

- Narrative Analysis – a non-quantitative analysis of noise impacts where noise impacts are not anticipated.
- Screening Analysis – a streamlined quantitative analysis where noise impacts are unlikely or abatement actions are clearly not feasible and/or reasonable.

- Detailed Analysis – a comprehensive quantitative analysis where noise impacts are possible and noise abatement may be feasible and reasonable.

Coordination with the Statewide Environmental Office (SEO) is required before a narrative or screening analysis is conducted. Failure to coordinate with the SEO may result in a need to reanalyze the project using a detailed analysis. There are limitations to the narrative and screening procedures, and they are not applicable to all projects. The appropriate level of noise analysis will depend on the presence of noise sensitive land uses (existing or permitted), probable occurrence of highway traffic noise impacts, the potential for noise abatement measures, and/or noise-related public controversy. The levels of analysis are described in detail in Sections 5.4 through 5.6 of this policy.

For Type I projects, a traffic noise analysis is required for all build alternatives under detailed study in the NEPA process. All reasonable alternatives that have been carried forward for detailed analysis and were not rejected as unreasonable during the alternatives screening process will be analyzed for noise impacts. For Environmental Impact Statements or other studies that will examine broad corridors, the appropriate scope and methodology of the noise analysis should be discussed with participating agencies early in the project planning process.

A Type I traffic noise analysis generally consists of the following steps, which are described in more detail in subsequent sections of this policy:

1. Identify noise analysis boundaries and receptors by land use Activity Category (Section 5.3) and distance to the edge of the closest travel lane of the proposed project;
2. Determine existing noise levels at a representative subset of receptors;
3. Predict future "build" noise levels at a larger representative subset of receptors. Predict future "no-build" noise levels for the proposed project;
4. Determine traffic noise impacts;
5. Evaluate abatement feasibility and reasonableness if there are traffic noise impacts;
6. Address coordination with local officials;
7. Address construction noise; and
8. Prepare the noise analysis report (Section 6.7.)

Noise impact modeling and abatement evaluation/design for DOT&PF projects require use of the latest approved version of the FHWA Traffic Noise Model (FHWA TNM) or another model determined by FHWA to be consistent with the methodology of the FHWA TNM, pursuant to 23 CFR 772.9(a.)

If any segment or component of an alternative meets the definition of a Type I project, then the entire alternative is considered to be Type I and is subject to these noise analysis requirements. The noise analysis boundaries will be consistent with project limits, from the beginning of the project to the end of the project based on logical termini for that specific project (BOP to EOP).

5.3 Land Use Activity Categories

Federal land use activity categories are defined in 23 CFR 772. DOT&PF has accepted the FHWA definition of these activity categories (Appendix B, Table 1.) Noise analyses must address each activity category present within the noise analysis boundaries. If undeveloped land has been permitted for development (*i.e.*, a building permit has been issued on or before the date of public knowledge,) that land should be assigned to the appropriate activity category and analyzed in the same manner as developed lands in that category.

Activity Category A: Lands on which serenity and quiet are of extraordinary significance and serve an important public need and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.

Activity Category B: Residential (single-family and multi-family homes.) Noise receivers should be located in exterior areas that receive frequent human use (*i.e.*, patios, balconies, playgrounds, gardens, etc.) When an area of frequent use cannot be determined, an area mid-way between the residence and the right-of-way line should be chosen. For residences and structures that face the highway, choose an area of frequent use in the front, such as a front door landing. For apartment buildings, second-floor or higher balconies should be used in addition to ground floor units. For any shared-use exterior areas, the number of residential equivalents will be equal to the total number of dwelling units in multi-family building(s).

Activity Category C: Exterior areas of non-residential lands such as schools, parks, cemeteries, etc., as listed in Appendix B. Receivers should be located in areas that receive the most frequent human use and represent the typical use of the area. Since impact determinations are based on each area of frequent human use, the number of areas impacted should be calculated and an equivalent number of residential units should then be calculated to assess the feasibility and reasonableness of abatement measures. The equivalent number of residential units is calculated by determining the average residential lot size for the vicinity and dividing it into the non-residential area, for a total number of residential units. For example: if a park has an area of 87,120 square feet, and the average residential lot size is 60 feet by 200 feet, or 12,000 square feet, use 8 equivalent residential units to assess the feasibility and reasonableness of a proposed abatement measure. Receiver placement for non-residential use sites is similar to that of the residential analysis. Receivers should be placed at the closest location to the highway right of way (ROW) line where outdoor activity normally occurs to determine if the NAC is exceeded. In addition, receivers should be placed at locations away from the ROW line to determine the extent of impact and to consider sensitive receptors if the NAC are exceeded at the ROW line.

Activity Category D: Interiors of certain Category C facilities, such as those listed in Appendix B. Interior receptor locations should only be used if there are no reasonable

exterior (Category C) receptor options. Only consider the interior levels at these land uses after fully completing an analysis of any outdoor activity areas or determining that exterior abatement measures are not feasible or reasonable. The 52 dB(A) criteria for the category only apply to the interior areas of this category.

An interior analysis will only be performed after exhaustion all exterior options.

This will involve:

1,) identify the expected noise reduction due to the composition of the building envelope: Table 6.1 found in the FHWA publication HEP-18-065, Noise Measurement Handbook Final Report (2018)

www.fhwa.dot.gov/environment/noise/measurement/handbook.cfm#toc492990722

2.) Determine if interior noise levels should assume an open-window or closed window conditions; Open window should be assumed unless there is reliable information that the windows are in fact kept closed almost all of the time while the facility is in use.

3.) If the expected reductions cannot be determined as identified in #1 or #2, physical measurements of the amount of noise reduction provided by the building envelop will be conducted consistent with methodology found in the FHWA publication HEP-18-065, Noise Measurement Handbook Final Report (2018)

www.fhwa.dot.gov/environment/noise/measurement/handbook.cfm#toc492990722

Activity Category E: Exteriors of developed lands that are less sensitive to highway noise that are not included in Categories A-D of F. Noise measurements will be taken and predictions will be made at locations that receive the most frequent use. Category E are specifically excluded from Category D and no interior noise analysis is required. The FHWA research publication A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations shall be used to assess whether noise abatement is feasible and/or reasonable.

www.fhwa.dot.gov/environMent/noise/noise_barriers/abatement/reasonableness_2009/met02.cfm

Activity Category F: Land uses that are not sensitive to highway noise (examples listed in Appendix B.) No highway noise analysis is required under 23 CFR 772 for Activity Category F land uses. The noise analysis report should identify any Category F land uses by name, location, and type of land use.

Activity Category G: Undeveloped lands that are not permitted. Land permitted for development (*i.e.,* a building permit has been issued on or before the date of public knowledge) shall be analyzed under the Activity Category for that type of development. When possible, use the filed plat to choose receptor locations representing the exterior

areas of frequent human use. For residential plats, determine if each lot represents a single-family or multifamily dwelling. Choose representative receptor locations for second row residences as well (these receptors may be grouped two or three at a time.)

For lands not permitted for development by the date of public knowledge, DOT&PF shall determine future noise levels pursuant to 23 CFR 772.17(a). For detailed noise analyses, this analysis should report (at a minimum) the distances from the proposed edge of the near travel lane out to where worst hour $L_{eq}(h)$ levels of 60 and 64 dBA are modeled to occur. The results shall be documented in the project environmental documentation and in the noise analysis report, when applicable. Federal participation in noise abatement measures will not be considered for Category G lands unless another future Type I project is planned adjacent to such lands.

5.4 Narrative Analysis for Type I Projects

A narrative analysis is a qualitative analysis that may be completed for Type I projects where noise-related impacts are not anticipated. If there are no receptors that could potentially be exposed to traffic noise impacts, a narrative analysis is appropriate, and no further analysis is required. If there are receptors that could potentially be exposed to traffic noise impacts, and the project has the potential to adversely affect the acoustic environment based on an evaluation of the following factors, a quantitative analysis (i.e., screening or detailed analysis) is required and a narrative analysis is not applicable.

- The identification of any existing activities, developed lands, and undeveloped lands for which development is permitted which may be affected by noise from the proposed project;
- Change of traffic volume (greater than 10%);
- Change of traffic composition (increased truck volumes);
- Change of traffic speed (greater than 10 miles per hour);
- Change of geometric relationships (either horizontal or vertical) between the roadway facility and receptors;
- Projects on new location;
- Change in distribution of traffic patterns; and/or;
- Public controversy based on noise-related issues or perceptions.

It is impossible to identify and account for every special consideration that may arise on a specific highway project and address it in the corresponding noise analysis. Therefore, the list above is to be used as a guide and not considered inclusive.

A narrative analysis will consist of a discussion of the proposed project, its relationship to receptors (if present) and why further analysis is not required. If no receptors are present, a brief statement should be included that summarizes the fact that there are no noise-sensitive land uses within the noise analysis boundaries. Depending on the project circumstances, some analysis may be required to justify the results of the narrative analysis and to document the non-significance of the change in the acoustical

environment (*e.g.* noise measurements or using a simplified two-dimensional FHWA TNM run to assess the worst-case conditions.)

If local officials associated with undeveloped lands in the project area could benefit from information regarding future noise levels for planning purposes, then that information still needs to be provided even if a narrative analysis has been performed. This can be done using the simplified modeling procedure described in Section 5.5, below.

5.5 Screening Analysis for Type I Projects

For some Type I projects, a screening analysis may be appropriate. The screening analysis is a streamlined procedure in which simplified TNM modeling is used to predict traffic noise levels and make a conservative estimation of noise impacts. This procedure can be effective for reducing time and resources associated with a detailed analysis. If a project passes the screening analysis, additional noise analysis under 23 CFR 772 is normally not necessary. If a project is considered controversial, a detailed analysis (see "Detailed Analysis") is warranted regardless of whether the screening procedure indicates otherwise.

A screening analysis is generally appropriate for projects where the following conditions occur:

- No noise impacts are anticipated;
- Noise impacts are anticipated but potential noise abatement actions will clearly not be feasible and reasonable.

Typically, these will be rural highway projects with uncontrolled access, few receptors, and large distances between receptors.

For example, acoustical feasibility (Section 6.4.1) requires that at least three receptors be protected by a continuous proposed noise barrier that guarantees at least a 5 dBA reduction in noise. If there are less than three receptors in the area where noise abatement is being considered, then no further analysis of noise abatement is required.

Unless or until there are other FHWA-approved screening methods available, TNM modeling must still be performed. However, the models may be simpler than for a detailed analysis. There are several simplifying measures that can be used in screening TNM template models, including using flat ground elevation data with straight-line roads. Receptors will be offset perpendicularly from the center of the model roads at distances that represent the distances from project roads to the nearest noise-sensitive receptors, and/or spaced at 50-foot intervals out to 500 feet to identify distances to NAC approach levels. The model roads will extend a minimum of 1,500 feet past the model receptors at each end of the study area.

The following items must be considered when using a screening analysis:

- Model validation is not required, but the need for onsite noise measurements will be determined on a case by case basis;
- Non-traffic noise sources important to the analysis area must be taken into account;
- Existing conditions for the analysis area must be modeled to determine if future noise levels may increase by 15 dBA or more;
- All of the future alternatives under consideration for the project must be modeled;
- Future noise levels must be evaluated for noise impacts according to the criteria in Section 3;
- If design year noise levels are 64 dBA or less or if noise levels are not predicted to increase more than 10 dBA over existing, then the screening analysis is sufficient;
- Traffic noise abatement actions will not be modeled;
- Noise measurements may be needed to justify results of a screening analysis that has identified impacts and feasible abatement appears unlikely.

This procedure can be used for Type I projects void of sensitive receptors in order to satisfy the requirement of analyzing noise impacts for undeveloped lands for use in local noise compatible planning (see Sections 5.4. and 5.6.4 of this policy.)

The decision to use a screening analysis in place of a detailed analysis should be made carefully. If the screening procedure is passed and no need for a detailed analysis is indicated, the results of the screening procedure are documented in a Noise Analysis report. If impacts are noted and abatement is clearly NOT feasible (*e.g.* driveway access), the screening procedure should suffice and a detailed analysis is not needed. However, impacts and the rationale for determining that noise abatement would not be feasible and reasonable must be clearly documented in a Noise Analysis report. If a project does not pass the screening procedure or if warranted by other conditions (*e.g.* public controversy), a detailed noise impact analysis must be performed.

5.6 Detailed Analysis for Type I Projects

A detailed noise analysis is the level of analysis performed for DOT&PF Type I projects when a narrative or screening analysis has been determined to not be appropriate. DOT&PF's processes for determining which projects qualify for a narrative or screening level analysis are described in Sections 5.4 and 5.5, respectively.

5.6.1 Identification of Analysis Boundaries, Noise Study Areas, and Receptors

Noise analysis boundaries must encompass all potential impacts. Potential benefits and impacts outside of the project limits may also need to be considered (*e.g.*, changes in traffic volumes on other facilities due to the proposed project.) All land uses within the noise analysis boundaries are identified and assigned to the appropriate Activity Categories.

It is usually beneficial on large projects to group land uses together into smaller noise study areas for the purposes of noise modeling and abatement evaluation. A noise

study area (NSA) is generally not longer than a mile. Decision factors for dividing a project into NSAs include the extents of individual neighborhoods or residential subdivisions, major terrain features, location of large tracts of undeveloped lands, and boundaries defining major changes in land use. Individual receptor locations within the land uses are also chosen, as outlined above in Section 5.3, Land Use Activity Categories.

5.6.2 Determination of Existing Noise Levels and Model Validation

For projects on new alignments, determine the worst hour existing noise levels (including non-highway traffic noise sources) for developed land uses and activities by field noise measurements. For projects on existing alignments, existing noise levels can be determined by modeling, although field measurements are recommended.

5.6.2.1 Ambient Noise Level Measurements

Field measurements are conducted in accordance with procedures outlined in FHWA's *Measurement of Highway-Related Noise* report (FHWA Report Number FHWA-PD-96-046, 1996) or the most recent available protocols. Field measurement points are generally a subset of all identified receptors, and should be chosen to be acoustically representative of a grouping of similarly located receptors.

Noise measurements typically consist of a series of 15-minute measurements (minimum of two at roughly the same time of day.) If these measurements differ by more than 3 dBA, a third measurement is needed, unless the variation can be explained by specific noise events that occurred during the measurement period.

On rural or smaller widening road projects, there may be a small number of receptors, such that determination of existing noise levels along the entire project may not be necessary. One approach to this situation is to make a longer term measurement (including peak traffic periods and daytime off-peak periods) at one measurement location close to the existing road. The results can then be used to determine the worst noise hour. Short term measurements taken at other locations during this longer term measurement can be adjusted later to represent the worst hour based on data from the longer term measurement location. While ambient noise level measurements should be made during the worst noise hour, it may not always be practical to do so in rural areas of Alaska.

5.6.2.2 Model Validation

Model validation is done by comparing measured noise levels with modeled noise levels using the same traffic volumes, mix, and speeds tallied during field noise measurements. Noise measurements for model validation do not have to be during the worst noise hour, but should not be made during periods of slow-moving traffic congestion.

Validation measurement locations should be representative of first-row receptor locations and should not be blocked by buildings or terrain features. Two or three measurements of at least 15 minutes in length are made at each location. Directional

traffic classification counts and average travel speeds of the five FHWA TNM vehicle types are made during each measurement. Pavement type must be noted and used in FHWA TNM.

For a FHWA TNM run of an NSA to be considered valid, two of the three modeled levels at each validation location must be within +/-3 dBA of the corresponding measured levels. When a discrepancy is over 3 dBA, the model input data should be examined for errors and refinements made. If a measured/modeled difference remains over 3 dBA after revision of the model, the discrepancy (and potential explanation) is noted in the noise analysis report.

5.6.3 Prediction of Future Noise Levels

Future condition noise predictions are made for each alternative under consideration, including the no-build alternative, using the latest version of the FHWA TNM program. Design year traffic conditions representing the worst noise hour (generally, Level of Service (LOS) C or D,) are used. Highway traffic noise analysis should consider absolute noise levels as well as substantial increases in noise levels for abatement evaluations.

Where appropriate, take into account any seasonal variations in traffic. Use the guidance in Sections 5.3 and 5.4.1 of this policy when choosing receptors for modeling as receivers in FHWA TNM. Loss of shielding of the roadway due to topography, buildings, or vegetation that may be eliminated when the roadway is built should be taken into account.

5.6.4 Determination of Future Noise Levels on Undeveloped Lands

Design year noise levels based on design hourly volumes need to be predicted for Category G lands. This can be done using the simplified modeling procedure described in Section 5.5 of this policy. At a minimum, this analysis should report the distances from the proposed edge of the near travel lane out to where worst hour $L_{eq}(h)$ levels of 60 and 64 dBA are modeled to occur. These results are then provided to local public agencies to assist them in planning.

Creation of noise contours for undeveloped lands will be considered on an individual project basis. Noise contours may only be used for project alternative screening or for land use planning purposes. They may not be used for determining highway traffic noise impacts.

5.6.5 Determination of Traffic Noise Impacts

For Type I projects, noise impacts must be determined for all Activity Category A-E land uses in the analysis area. Impacts occur when a proposed project results in a substantial noise increase or when the predicted design year noise levels approach, meet, or exceed the NAC. As defined in Section 3.0, a "substantial noise increase" occurs when a design year noise level ($L_{eq}(h)$) is predicted to increase 15 or more dBA above the existing level and "approach" means a design year noise level is predicted to be one decibel below the NAC for Activity Categories A-E (Appendix B, Table 1.) When

one or both impact type(s) occur, noise abatement measures must be evaluated for Type I projects.

6.0 ANALYSIS OF NOISE ABATEMENT MEASURES

Depending upon the date of public knowledge of the project and the Activity Category of the receptors, traffic noise abatement measures are to be considered when traffic noise impacts have been identified through the noise analysis process, with the exceptions noted in Sections 5.4 and 5.5.

6.1 Date of Public Knowledge

The date of public knowledge of a proposed transportation project is used to determine whether noise abatement should be considered as part of the project. This date (as defined in 23 CFR 772) is the date that a NEPA decision document was approved for the project. DOT&PF will only consider abatement measures if the impacted receptor was developed or permitted for development before the date of public knowledge.

6.2 Abatement Considerations

Noise abatement measures must be found to be both feasible and reasonable in order to be included in a proposed project. A Noise Abatement Recommendation Worksheet (located in Appendix C) should be completed to assist in the decision-making process. Feasibility and reasonableness are each described in detail later in this section.

For Type I projects that have had a Detailed Noise Analysis conducted, DOT&PF will evaluate noise abatement when traffic noise impacts are predicted for land use Activity Categories A-E, with some exceptions as noted in Section 5.3. When an impact is identified, noise abatement measures will be evaluated after first considering whether project design changes (*e.g.*, altering the horizontal and/or vertical alignment) may reduce or eliminate the impact.

6.3 Possible Noise Abatement Measures

Federal funds may be used for the following noise abatement measures when traffic noise impacts have been identified and abatement measures have been determined to be feasible and reasonable, pursuant to 23 CFR 772.13(d). The costs of such measures may be included in Federal-aid participation project costs with the Federal share being the same as that for the system on which the project is located.

The following noise abatement measures may be considered for incorporation into a Type I project to reduce traffic noise impacts.

(1) Construction of noise barriers, including acquisition of property rights, either within or outside the highway right-of-way. Landscaping is not a viable noise abatement measure.

(2) Traffic management measures including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
(3) Alteration of horizontal and vertical alignments.
(4) Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise.
(5) Noise insulation of Activity Category D land use facilities listed in Table 1. Post-installation maintenance and operational costs for noise insulation are not eligible for federal-aid funding.

Alternative (quieter) pavement is not a FHWA-approved noise abatement measure for Federal-aid projects and consequently cannot be used as noise abatement on Federal-aid projects. DOT&PF may consider using alternative pavements to reduce traffic noise on State-funded projects (see Section 9.0 of this policy.)

At this time, DOT&PF does not use absorptive treatments as a functional enhancement of noise barriers.

6.4 Feasibility

Determinations of noise abatement measure feasibility are made by considering whether a certain amount of noise reduction can be achieved by the measure and whether the measure is possible to design and construct.

6.4.1 Acoustical Feasibility

Acoustical feasibility refers to the minimum number of impacted receptors that must receive 5 dBA highway traffic noise reduction for a proposed abatement measure to be feasible. For DOT&PF projects, a 5 dBA or more reduction must be achieved for at least three impacted front row receptors in order for the abatement measure to be considered acoustically feasible.

If significant non-highway noise sources exist in the project area, such as rail lines or airports, noise barrier effectiveness may be compromised. These situations will be carefully evaluated to determine if a noise barrier for the highway noise sources is feasible.

6.4.2 Engineering Feasibility

Noise abatement measures are not feasible if they create a safety hazard to the driving public, protected receptors, or maintenance personnel. The project development team will consult with the appropriate DOT&PF functional groups when determining whether it is possible to design and construct a noise abatement measure. Noise abatement measures should be consistent with the following general design principles:

- Noise abatement measures should be located beyond the recovery zone of the traveled way; if a noise abatement measure must be located within the recovery zone, a traffic barrier may be warranted.

- Noise abatement measures may not block the recommended sight distance (Alaska Highway Preconstruction Manual, Chapter 11) between vehicles and intersecting roadways or on/off-ramps.
- Protrusions on noise abatement measures near a traffic lane should be avoided.
- Facings on noise abatement measures that can become dislodged, or barrier components that could shatter during an accident, or facings that create excessive glare should be avoided.
- Access should be provided to all sides of noise abatement measures to allow for maintenance activities to take place.

All noise abatement measures should consider the design principles outlined in the "*Guide on Evaluation and Abatement of Traffic Noise*", AASHTO, 1993 and the *"FHWA Highway Noise Barrier Design Handbook*", FHWA, 2000.

6.5 Reasonableness

The following three reasonableness factors must be evaluated in order for a noise abatement measure to be considered reasonable, pursuant to 23 CFR 772.13:

1) Viewpoints of the property owners and residents of the benefitted receptors.
2) Cost Effectiveness.
3) Noise Reduction Design Goal.

These three reasonableness factors must collectively be achieved in order for a noise abatement measure to be deemed reasonable. Refer to Section 9.0 for a list of additional optional reasonableness factors that may be used only on State-funded projects.

6.5.1 Viewpoints of the property owners and residents of the benefited receptors

Public involvement for noise abatement is required for all categories of environmental document. To determine the views of benefited households and property owners, DOT&PF will contact all benefited households and property owners to determine the level of interest for a noise abatement measure. This contact can be in the form of a mail out questionnaire, phone call survey, or door to door interviews - whichever is most practical and cost effective for the size of the proposed project.

Noise abatement will be carried forward if there is a 60% majority of viewpoints received in support of the barrier. If a property has multiple dwelling units, the owner(s) of the multi-unit dwelling will provide input for the property as a whole, not for each individual dwelling unit. A second outreach attempt will be made if the response rate is less than 40% of all possible respondents.

6.5.2 Cost Effectiveness

The noise abatement measure cost is no more than $38,000[1] per benefitted receptor, based upon the design engineer's estimate. This is determined by counting all receptors (including owner-occupied, rental units, mobile homes, and businesses) benefited by the noise abatement measure in any subdivision and/or given development, and dividing that number into the total cost of the noise abatement measure. A benefited receptor is defined as the recipient of an abatement measure that receives a noise reduction at or above the minimum threshold of 5 dBA. Each unit in a multi-family building will be counted as a separate receptor. Cost per benefited receptor must be reanalyzed at a regular interval not to exceed 5 years.

When the design engineer determines abatement measure cost, the estimate will include all items necessary for the construction of the noise abatement measure. Examples of cost items that should be included are traffic control (related to the noise barrier), drainage modification, foundations, retaining walls and right-of-way. Include a cost item only if it is directly related to the construction of the noise abatement measure[2]. If a necessary project feature such as a retaining wall is included, then that cost will not be added into the noise abatement construction cost estimate. If the project incorporates visual mitigation such as the use of a transparent barrier with surface texture, the additional cost will not be included in the abatement construction cost estimate for the purpose of determining reasonableness. Aesthetic treatments, such as artwork, re-vegetation, landscaping, and barrier treatments will not be included in the abatement measure cost estimate for the purpose of determining reasonableness.

6.5.3 Noise Reduction Design Goal

The DOT&PF noise reduction design goal is 7 dBA. At least 50 percent of the benefited receptors in the first row of structures must achieve this design goal for the noise abatement to be considered reasonable. If this design goal is not attainable, then the noise abatement cannot be carried forward. Refer to Section 9.0 for a list of additional criteria that apply only to State-funded projects.

6.5.4 Noise Abatement Recommendation Worksheet

A noise abatement recommendation worksheet (Appendix C) will be filled out for each NSA in the noise analysis. The REM will approve and sign the worksheets. If an abatement measure is determined to not be feasible, then the reasonableness analysis section of the worksheet does not need to be completed. Likewise, if it is determined that the abatement measure is not reasonable, the feasibility portion of the worksheet does not have to be filled out.

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[1] DOT&PFs April 2011 cost per benefited receptor was adjusted for inflation (CPI September 2018) to $38,000 cost per benefited receptor.

[2] DOT&PF will need to provide proof to the FHWA Division Office that the cost of any of these are solely and directly related to the noise abatement measure

DOT&PF will only implement a noise abatement measure if it has been determined to be both feasible and reasonable. The REM will recommend or not recommend that a noise abatement measure be implemented. The recommendation worksheet will be submitted to the Project Manager (PM) who will sign the recommendation worksheet. If the PM does not approve the recommendation then the Preconstruction Engineer will resolve the dispute. The Preconstruction Engineer only needs to sign the noise abatement recommendation worksheet if alternative pavements are recommended as abatement on State-funded projects. The REM will ensure that the recommendation is included in the project's environmental document.

6.6 Third Party Funding

For Type I Federal-aid projects, third party funding cannot be used if the noise abatement would require the additional funding in order to be considered feasible and/or reasonable. Third party funding can be used to pay for additional features such as landscaping, aesthetic treatments, and functional enhancements for noise barriers that have already been determined to be feasible and reasonable.

6.7 Information Required for a NEPA Decision

It is important to maintain accurate and complete documentation of noise impact analyses and any decisions to provide noise abatement. The noise analysis reports for Type I projects are stand-alone documents. Information is taken from the noise analysis report to support the NEPA analysis and decision. The specific information required is outlined in 23 CFR 772.13.

Decisions to provide or not provide noise abatement must be well-explained and defensible. Prior to the NEPA decision, DOT&PF must identify and document:

1) Where noise impacts occur;
2) The prospective noise abatement measures that are feasible and reasonable, and are likely to be incorporated into the project; and
3) Noise impact locations for which no abatement appears to be feasible and reasonable.

For noise abatement measures that have been found to be feasible and reasonable, a statement of likelihood, similar to the following, should be included in the environmental document narrative in the interest of public disclosure:

"As a result of the feasibility and reasonableness analysis conducted as a part of the environmental document, the DOT&PF proposes to incorporate the following noise abatement measures (type, locations) into the proposed project. These noise abatement recommendations are preliminary and based upon the feasibility and reasonableness analysis completed at the time the environmental document. Final recommendations for noise abatement will be based upon the feasibility and reasonable analysis conducted during the detailed design of the project. Any changes in the final abatement

recommendations will result in the reevaluation of the approved NEPA document and the solicitation of additional public comment."

The noise analysis report should include a description of each abatement measure considered, a discussion of the anticipated costs, problems, and disadvantages associated with that abatement measure, and a discussion of the anticipated benefits. The noise analysis must be appended to the environmental document, and should be in the following general format:

Cover Page
Table of Contents
Summary
Project Background
Purpose of Analysis
Methods
    Model
    Validation Process
Description of Land Use Categories along the Corridor
Results
Identification of Noise Impacts
Noise Abatement Analysis
Abatement Recommendations
Statement of Likelihood
Construction Noise
Conclusion
Appendices
    DOT&PF NOISE POLICY
    TNM Model inputs/outputs and supporting CAD/design files

During the detailed design of the proposed project, recommendations for noise abatement made in the environmental document will be reevaluated to determine if they are still valid. If it is determined that any noise abatement measure recommendation is no longer valid, then the affected public will be notified and the environmental document will be reevaluated or supplemented as appropriate.

6.8 Design-Build Projects

For design-build projects, as with any DOT&PF project, DOT&PF is ultimately responsible for the NEPA decisions and as such, noise abatement measures must be considered, developed, and constructed in accordance with the provisions of 23 CFR 772, 23 CFR 636.109, and this policy.

6.9 Inventory and Reporting of Abatement Measures

DOT&PF will maintain an inventory of all constructed noise abatement measures and will on a periodic basis provide the Alaska Division of FHWA the parameters outlined in

23 CFR 772.13(f). DOT&PF will enter the data into a spreadsheet as abatement measures are implemented.

7.0 INFORMATION FOR LOCAL OFFICIALS

In an effort to reduce future traffic noise impacts on currently undeveloped lands and to maintain compatibility between highways and future development, DOT&PF will provide the results of Type I highway traffic noise analyses to local government officials. With regard to undeveloped lands that have not been permitted for development, the results will include at a minimum the distances from the proposed edge of the traveled way to where the design year $L_{eq}(h)$ of 60 and 64 dBA are predicted to occur.

8.0 CONSTRUCTION NOISE

Construction of a highway project may cause localized, short-duration noise impacts. Construction noise can adversely affect people living in the area. Analysis and mitigation of construction noise impacts will be addressed when noise and vibration issues arise during project development or if complaints are received by the public.

For all Type I Federal and State Projects, it is DOT&PF policy to:

(a) Identify land uses or activities that may be affected by noise from construction of the project. The identification is to be performed during the project development studies.
(b) Determine the measures that are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community. This determination shall include a weighing of the benefits achieved and the overall adverse social, economic, and environmental effects and costs of the abatement measures.
(c) Incorporate the needed abatement measures in the plans and specifications.

The REM, environmental analyst and design engineering manager will coordinate to incorporate appropriate mitigation measures for construction noise as determined appropriate by DOT&PF. These may be incorporated into the plans and specifications and include: requirements for staging areas, time periods where no noise generating activities can occur, and public outreach requirements.

In the event that construction noise complaints occur during the course of construction activities, measures will be taken by the Construction Project Engineer, in consultation with the REM, to resolve the problem to the extent practical. Measures might include locating stationary construction equipment as far from nearby noise sensitive receivers as possible, shutting off idling equipment, rescheduling construction operations to avoid periods of noise annoyance, notifying nearby residents whenever extremely noisy operations will be occurring, and installing permanent or portable acoustic abatement measures around stationary construction noise sources.

In some cases there are no alternatives to conducting construction activities during the night, on weekends, or on holidays. When deemed necessary, DOT&PF will make every effort to notify the public prior to conducting these activities. Public involvement in these cases should occur during design and throughout the construction duration. In some communities, local ordinances may restrict noise generating activities. DOT&PF and its contractor(s) will comply with local noise ordinances and acquire any necessary noise permits for construction activities prior to their initiation.

While construction noise modeling is not regularly done for Type I noise studies, the FHWA Roadway Construction Noise Model (RCNM) may be used to predict noise levels from various types of equipment and construction activities. In some cases (*e.g.*, pile driving near residences,) construction noise modeling may be warranted for Type III projects as well.

9.0 STATE-FUNDED PROJECTS

In general, the same methods are followed in the identification of noise impacts for Type I State-funded projects as for Type I Federal-aid projects. Results of noise analyses will be documented in the State Project Environmental Checklist. If noise abatement is determined to be feasible and reasonable, then the REM will make a recommendation to the Preconstruction Engineer. The Preconstruction Engineer will decide whether the recommended abatement measure will be constructed. Abatement will be provided only if it meets the feasibility and reasonableness criteria of this policy and the Preconstruction Engineer determines that the state funded appropriation can accommodate the expenditure.

In addition to the reasonableness factors outlined for Federal-aid projects in Section 6.5, above, the following optional reasonableness factors may be used to increase the cost allowed on State-funded projects:

1) Date of development.
2) Length of time receivers have been exposed to highway traffic noise impacts.
3) Exposure to higher absolute traffic noise levels.
4) Changes between existing and future build conditions.
5) Percentage of mixed zone development.
6) Use of noise compatible planning concepts by the local government.

No single optional reasonableness factor shall be used to determine that a noise abatement measure is unreasonable.

In addition to the criteria outlined for Federal-aid projects in Section 6.5.3, above, the following noise reduction design goal criteria apply only to State-funded projects:

1) Development vs. Highway Timing. At least 50 percent of impacted receptors in the development (subdivision, apartment complex, etc.) were built before initial construction of the highway. The date of development is an important part of the determination of reasonableness. More consideration is given to developments that were built before the highway was built.
2) Development Existence. At least 50 percent of impacted receptors in the development have existed for at least 10 years. More consideration is given to residents who have experienced traffic noise impacts for long periods of time.
3) Absolute Predicted Build Noise Level. The predicted future build noise levels are at least 66 dBA. More consideration should be given to areas with higher absolute traffic noise levels. Absolute noise levels typically found along highways, 60-75 dBA, are deemed undesirable and cause complaints from adjacent residents. In general, the higher the absolute noise, the more complaints.
4) Relative Predicted Build Noise Level. The predicted future build noise levels are at least 10 dBA greater than the existing noise levels. More consideration is given to areas with larger increases over existing noise levels. This gives greater consideration to projects for highways on new location and major reconstruction than it does to projects of smaller magnitude. For most people, a 3 dBA increase is barely perceptible, a 5 dBA increase is readily perceptible, and a 10 dBA increase doubles the perceived loudness of the noise.
5) Build vs. No-Build Noise Levels. The future build noise levels are at least 5 dBA greater than the future no-build noise levels. More consideration should be given to areas where larger changes in traffic noise levels are expected to occur if the project is constructed than if it is not.
6) Land use. Land use is not changing rapidly and there are local ordinances or zoning in place to control the new development of noise sensitive land uses adjacent to transportation corridors.

DOT&PF may consider using alternative pavements to reduce traffic noise on State-funded projects. However, the decision to provide such a measure will be made by the Preconstruction Engineer.

10.0 UPDATES TO POLICY

This policy is effective upon signature and replaces the Alaska DOT&PF April 2011 Noise Policy. Changes to the policy will be made as needed, or every 5 years, per FHWA recommendation.

REFERENCES

"*Guide on Evaluation and Abatement of Traffic Noise*" (AASHTO, 1993)

"FHWA Highway Noise Barrier Design Handbook" (FHWA, 2000)

"Measurement of Highway-Related Noise" report (FHWA Report Number FHWA-PD-96-046, 1996)

http://www.fhwa.dot.gov/environment/noise/

FHWA *Highway Traffic Noise: Analysis and Abatement Guidance* June 2010 is available at the following website
http://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/guidancedoc.pdf

Noise Model Web site at the following URL http://www.fhwa.dot.gov/environment/noise/index.htm.

APPENDIX A - FHWA 23 CFR 772

Code of Federal Regulations

Current as of October 12, 2018

Title 23 → Chapter I → Subchapter H → Part 772

PART 772—PROCEDURES FOR ABATEMENT OF HIGHWAY TRAFFIC NOISE AND CONSTRUCTION NOISE

Contents

AUTHORITY: 23 U.S.C. 109(h) and (i); 42 U.S.C. 4331, 4332; sec. 339(b), Pub. L. 104-59, 109 Stat. 568, 605; 49 CFR 1.48(b).

SOURCE: 75 FR 39834, July 13, 2010, unless otherwise noted.

§772.1 Purpose.

To provide procedures for noise studies and noise abatement measures to help protect the public's health, welfare and livability, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to title 23 U.S.C.

§772.3 Noise standards.

The highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials in this regulation constitute the noise standards mandated by 23 U.S.C. 109(1). All highway projects which are developed in conformance with this regulation shall be deemed to be in accordance with the FHWA noise standards.

§772.5 Definitions.

Benefited receptor. The recipient of an abatement measure that receives a noise reduction at or above the minimum threshold of 5 dB(A), but not to exceed the highway agency's reasonableness design goal.

Common Noise Environment. A group of receptors within the same Activity Category in Table 1 that are exposed to similar noise sources and levels; traffic volumes, traffic mix, and speed; and topographic features. Generally, common noise environments occur between two secondary noise sources, such as interchanges, intersections, cross-roads.

Date of public knowledge. The date of approval of the Categorical Exclusion (CE), the Finding of No Significant Impact (FONSI), or the Record of Decision (ROD), as defined in 23 CFR part 771.

Design year. The future year used to estimate the probable traffic volume for which a highway is designed.

Existing noise levels. The worst noise hour resulting from the combination of natural and mechanical sources and human activity usually present in a particular area.

Feasibility. The combination of acoustical and engineering factors considered in the evaluation of a noise abatement measure.

Impacted Receptor. The recipient that has a traffic noise impact.

L10. The sound level that is exceeded 10 percent of the time (the 90th percentile) for the period under consideration, with L10(h) being the hourly value of L10.

Leq. The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with Leq(h) being the hourly value of Leq.

Multifamily dwelling. A residential structure containing more than one residence. Each residence in a multifamily dwelling shall be counted as one receptor when determining impacted and benefited receptors.

Noise barrier. A physical obstruction that is constructed between the highway noise source and the noise sensitive receptor(s) that lowers the noise level, including stand alone noise walls, noise berms (earth or other material), and combination berm/wall systems.

Noise reduction design goal. The optimum desired dB(A) noise reduction determined from calculating the difference between future build noise levels with abatement, to future build noise levels without abatement. The noise reduction design goal shall be at least 7 dB(A), but not more than 10 dB(A).

Permitted. A definite commitment to develop land with an approved specific design of land use activities as evidenced by the issuance of a building permit.

Property owner. An individual or group of individuals that holds a title, deed, or other legal documentation of ownership of a property or a residence.

Reasonableness. The combination of social, economic, and environmental factors considered in the evaluation of a noise abatement measure.

Receptor. A discrete or representative location of a noise sensitive area(s), for any of the land uses listed in Table 1.

Residence. A dwelling unit. Either a single family residence or each dwelling unit in a multifamily dwelling.

Statement of likelihood. A statement provided in the environmental clearance document based on the feasibility and reasonableness analysis completed at the time the environmental document is being approved.

Substantial construction. The granting of a building permit, prior to right-of-way acquisition or construction approval for the highway.

Substantial noise increase. One of two types of highway traffic noise impacts. For a Type I project, an increase in noise levels of 5 to 15 dB(A) in the design year over the existing noise level.

Traffic noise impacts. Design year build condition noise levels that approach or exceed the NAC listed in Table 1 for the future build condition; or design year build condition noise levels that create a substantial noise increase over existing noise levels.

Type I project. (1) The construction of a highway on new location; or,

(2) The physical alteration of an existing highway where there is either:

(i) Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or,

(ii) Substantial Vertical Alteration. A project that removes shielding therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor; or,

(3) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,

(4) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,

(5) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,

(6) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,

(7) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza.

(8) If a project is determined to be a Type I project under this definition then the entire project area as defined in the environmental document is a Type I project.

Type II project. A Federal or Federal-aid highway project for noise abatement on an existing highway. For a Type II project to be eligible for Federal-aid funding, the highway agency must develop and implement a Type II program in accordance with section 772.7(e).

Type III project. A Federal or Federal-aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

§772.7 Applicability.

(a) This regulation applies to all Federal or Federal-aid Highway Projects authorized under title 23, United States Code. Therefore, this regulation applies to any highway project or multimodal project that:

(1) Requires FHWA approval regardless of funding sources, or

(2) Is funded with Federal-aid highway funds.

(b) In order to obtain FHWA approval, the highway agency shall develop noise policies in conformance with this regulation and shall apply these policies uniformly and consistently statewide.

(c) This regulation applies to all Type I projects unless the regulation specifically indicates that a section only applies to Type II or Type III projects.

(d) The development and implementation of Type II projects are not mandatory requirements of section 109(i) of title 23, United States Code.

(e) If a highway agency chooses to participate in a Type II program, the highway agency shall develop a priority system, based on a variety of factors, to rank the projects in the program. This priority system shall be submitted to and approved by FHWA before the highway agency is allowed to use Federal-aid funds for a project in the program. The highway agency shall re-analyze the priority system on a regular interval, not to exceed 5 years.

(f) For a Type III project, a highway agency is not required to complete a noise analysis or consider abatement measures.

§772.9 Traffic noise prediction.

(a) Any analysis required by this subpart must use the FHWA Traffic Noise Model (TNM), which is described in "FHWA Traffic Noise Model" Report No. FHWA-PD-96-010, including Revision No. 1, dated April 14, 2004, or any other model determined by the FHWA to be consistent with the methodology of the FHWA TNM. These publications are incorporated by reference in accordance with section 552(a) of title 5, U.S.C. and part 51 of title 1, CFR, and are on file at the National Archives and Record Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030 or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.* These documents are available for copying and inspection at the Federal Highway Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590, as provided in part 7 of title 49, CFR. These documents are also available on the FHWA's Traffic Noise Model Web site at the following URL: *http://www.fhwa.dot.gov/environment/noise/index.htm.*

(b) Average pavement type shall be used in the FHWA TNM for future noise level prediction unless a highway agency substantiates the use of a different pavement type for approval by the FHWA.

(c) Noise contour lines may be used for project alternative screening or for land use planning to comply with §772.17 of this part, but shall not be used for determining highway traffic noise impacts.

(d) In predicting noise levels and assessing noise impacts, traffic characteristics that would yield the worst traffic noise impact for the design year shall be used.

§772.11 Analysis of traffic noise impacts.

(a) The highway agency shall determine and analyze expected traffic noise impacts.

(1) For projects on new alignments, determine traffic noise impacts by field measurements.

(2) For projects on existing alignments, predict existing and design year traffic noise impacts.

(b) In determining traffic noise impacts, a highway agency shall give primary consideration to exterior areas where frequent human use occurs.

(c) A traffic noise analysis shall be completed for:

(1) Each alternative under detailed study;

(2) Each Activity Category of the NAC listed in Table 1 that is present in the study area;

(i) *Activity Category A.* This activity category includes the exterior impact criteria for lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential for the area to continue to serve its intended purpose. Highway agencies shall submit justifications to the FHWA on a case-by-case basis for approval of an Activity Category A designation.

(ii) *Activity Category B.* This activity category includes the exterior impact criteria for single-family and multifamily residences.

(iii) *Activity Category C.* This activity category includes the exterior impact criteria for a variety of land use facilities. Each highway agency shall adopt a standard practice for analyzing these land use facilities that is consistent and uniformly applied statewide.

(iv) *Activity Category D.* This activity category includes the interior impact criteria for certain land use facilities listed in Activity Category C that may have interior uses. A highway agency shall conduct an indoor analysis after a determination is made that exterior abatement measures will not be feasible and reasonable. An indoor analysis shall only be done after exhausting all outdoor analysis options. In situations where no exterior activities are to be affected by the traffic noise, or where the exterior activities are far from or physically shielded from the roadway in a manner that prevents an impact on exterior activities, the highway agency shall use Activity Category D as the basis of determining noise impacts. Each highway agency shall adopt a standard practice for analyzing these land use facilities that is consistent and uniformly applied statewide.

(v) *Activity Category E.* This activity category includes the exterior impact criteria for developed lands that are less sensitive to highway noise. Each highway agency shall adopt a standard practice for analyzing these land use facilities that is consistent and uniformly applied statewide.

(vi) *Activity Category F.* This activity category includes developed lands that are not sensitive to highway traffic noise. There is no impact criteria for the land use facilities in this activity category and no analysis of noise impacts is required.

(vii) *Activity Category G.* This activity includes undeveloped lands.

(A) A highway agency shall determine if undeveloped land is permitted for development. The milestone and its associated date for acknowledging when undeveloped land is considered permitted shall be the date of issuance of a building permit by the local jurisdiction or by the appropriate governing entity.

(B) If undeveloped land is determined to be perrmitted, then the highway agency shall assign the land to the appropriate Activity Category and analyze it in the same manner as developed lands in that Activity Category.

(C) If undeveloped land is not permitted for development by the date of public knowledge, the highway agency shall determine noise levels in accordance with 772.17(a) and document the results in the project's environmental clearance documents and noise analysis documents. Federal participation in noise abatement measures will not be considered for lands that are not permitted by the date of public knowledge.

(d) The analysis of traffic noise impacts shall include:

(1) Identification of existing activities, developed lands, and undeveloped lands, which may be affected by noise from the highway;

(2) For projects on new or existing alignments, validate predicted noise level through comparison between measured and predicted levels;

(3) Measurement of noise levels. Use an ANSI Type I or Type II integrating sound level meter;

(4) Identification of project limits to determine all traffic noise impacts for the design year for the build alternative. For Type II projects, traffic noise impacts shall be determined from current year conditions;

(e) Highway agencies shall establish an approach level to be used when determining a traffic noise impact. The approach level shall be at least 1 dB(A) less than the Noise Abatement Criteria for Activity Categories A to E listed in Table 1 to part 772;

(f) Highway agencies shall define substantial noise increase between 5 dB(A) to 15 dB(A) over existing noise levels. The substantial noise increase criterion is independent of the absolute noise level.

(g) A highway agency proposing to use Federal-aid highway funds for a Type II project shall perform a noise analysis in accordance with §772.11 of this part in order to provide information needed to make the determination required by §772.13(a) of this part.

§772.13 Analysis of noise abatement.

(a) When traffic noise impacts are identified, noise abatement shall be considered and evaluated for feasibility and reasonableness. The highway agency shall determine and analyze alternative noise abatement measures to abate identified impacts by giving weight to the benefits and costs of abatement and the overall social, economic, and environmental effects by using feasible and reasonable noise abatement measures for decision-making.

(b) In abating traffic noise impacts, a highway agency shall give primary consideration to exterior areas where frequent human use occurs.

(c) If a noise impact is identified, a highway agency shall consider abatement measures. The abatement measures listed in §772.15(c) of this part are eligible for Federal funding.

(1) At a minimum, the highway agency shall consider noise abatement in the form of a noise barrier.

(2) If a highway agency chooses to use absorptive treatments as a functional enhancement, the highway agency shall adopt a standard practice for using absorptive treatment that is consistent and uniformly applied statewide.

(d) *Examination and evaluation of feasible and reasonable noise abatement measures for reducing the traffic noise impacts.* Each highway agency, with FHWA approval, shall develop feasibility and reasonableness factors.

(1) *Feasibility*: (i) Achievement of at least a 5 dB(A) highway traffic noise reduction at impacted receptors. The highway agency shall define, and receive FHWA approval for, the number of receptors that must achieve this reduction for the noise abatement measure to be acoustically feasible and explain the basis for this determination; and

(ii) Determination that it is possible to design and construct the noise abatement measure. Factors to consider are safety, barrier height, topography, drainage, utilities, and maintenance of the abatement measure, maintenance access to adjacent properties, and access to adjacent properties (*i.e.* arterial widening projects).

(2) *Reasonableness*:(i) *Consideration of the viewpoints of the property owners and residents of the benefited receptors.* The highway agency shall solicit the viewpoints of all of the benefited receptors and obtain enough responses to document a decision on either desiring or not desiring the noise abatement measure. The highway agency shall define, and receive FHWA approval for, the number of receptors that are needed to constitute a decision and explain the basis for this determination.

(ii) *Cost effectiveness of the highway traffic noise abatement measures.* Each highway agency shall determine, and receive FHWA approval for, the allowable cost of abatement by determining a baseline cost reasonableness value. This determination may include the actual construction cost of noise abatement, cost per square foot of abatement, the maximum square

footage of abatement/benefited receptor and either the cost/benefited receptor or cost/benefited receptor/dB(A) reduction. The highway agency shall re-analyze the allowable cost for abatement on a regular interval, not to exceed 5 years. A highway agency has the option of justifying, for FHWA approval, different cost allowances for a particular geographic area(s) within the State, however, the highway agancy must use the same cost reasonableness/construction cost ratio statewide.

(iii) *Noise reduction design goals for highway traffic noise abatement measures.* When noise abatement measure(s) are being considered, a highway agency shall achieve a noise reduction design goal. The highway agency shall define, and receive FHWA approval for, the design goal of at least 7 dB(A) but not more than 10 dB(A), and shall define the number of benefited receptors that must achieve this design goal and explain the basis for this determination.

(iv) The reasonableness factors listed in §772.13(d)(5)(i), (ii) and (iii), must collectively be achieved in order for a noise abatement measure to be deemed reasonable. Failure to achieve §772.13(d)(5)(i), (ii) or (iii), will result in the noise abatement measure being deemed not reasonable.

(v) In addition to the required reasonableness factors listed in §772.13(d)(5)(i), (ii), and (iii), a highway agency has the option to also include the following reasonableness factors: Date of development, length of time receivers have been exposed to highway traffic noise impacts, exposure to higher absolute highway traffic noise levels, changes between existing and future build conditions, percentage of mixed zoning development, and use of noise compatible planning concepts by the local government. No single optional reasonableness factor can be used to determine reasonableness.

(e) Assessment of Benefited Receptors. Each highway agency shall define the threshold for the noise reduction which determines a benefited receptor as at or above the 5 dB(A), but not to exceed the highway agency's reasonableness design goal.

(f) *Abatement measure reporting*: Each highway agency shall maintain an inventory of all constructed noise abatement measures. The inventory shall include the following parameters: type of abatement; cost (overall cost, unit cost per/sq. ft.); average height; length; area; location (State, county, city, route); year of construction; average insertion loss/noise reduction as reported by the model in the noise analysis; NAC category(s) protected; material(s) used (precast concrete, berm, block, cast in place concrete, brick, metal, wood, fiberglass, combination, plastic (transparent, opaque, other); features (absorptive, reflective, surface texture); foundation (ground mounted, on structure); project type (Type I, Type II, and optional project types such as State funded, county funded, tollway/turnpike funded, other, unknown). The FHWA will collect this information, in accordance with OMB's Information Collection requirements.

(g) Before adoption of a CE, FONSI, or ROD, the highway agency shall identify:

(1) Noise abatement measures which are feasible and reasonable, and which are likely to be incorporated in the project; and

(2) Noise impacts for which no noise abatement measures are feasible and reasonable.

(3) *Documentation of highway traffic noise abatement*: The environmental document shall identify locations where noise impacts are predicted to occur, where noise abatement is feasible and reasonable, and locations with impacts that have no feasible or reasonable noise abatement alternative. For environmental clearance, this analysis shall be completed to the extent that design information on the alterative(s) under study in the environmental document is available at the time the environmental clearance document is completed. A statement of likelihood shall be included in the environmental document since feasibility and reasonableness determinations may change due to changes in project design after approval of the environmental document. The statement of likelihood shall include the preliminary location and physical description of noise abatement measures determined feasible and reasonable in the preliminary analysis. The statement of likelihood shall also indicate that final recommendations on the construction of an abatement measure(s) is determined during the completion of the project's final design and the public involvement processes.

(h) The FHWA will not approve project plans and specifications unless feasible and reasonable noise abatement measures are incorporated into the plans and specifications to reduce the noise impact on existing activities, developed lands, or undeveloped lands for which development is permitted.

(i) For design-build projects, the preliminary technical noise study shall document all considered and proposed noise abatement measures for inclusion in the NEPA document. Final design of design-build noise abatement measures shall be based on the preliminary noise abatement design developed in the technical noise analysis. Noise abatement measures shall be considered, developed, and constructed in accordance with this standard and in conformance with the provisions of 40 CFR 1506.5(c) and 23 CFR 636.109.

(j) Third party funding is not allowed on a Federal or Federal-aid Type I or Type II project if the noise abatement measure would require the additional funding from the third party to be considered feasible and/or reasonable. Third party funding is acceptable on a Federal or Federal-aid highway Type I or Type II project to make functional enhancements, such as absorptive treatment and access doors or aesthetic enhancements, to a noise abatement measure already determined feasible and reasonable.

(k) On a Type I or Type II projects, a highway agency has the option to cost average noise abatement among benefited receptors within common noise environments if no single common noise environment exceeds two times the highway agency's cost reasonableness criteria and collectively all common noise environments being averaged do not exceed the highway agency's cost reasonableness criteria.

§772.15 Federal participation.

(a) *Type I and Type II projects.* Federal funds may be used for noise abatement measures when:

(1) Traffic noise impacts have been identified; and

(2) Abatement measures have been determined to be feasible and reasonable pursuant to §772.13(d) of this chapter.

(b) *For Type II projects.* (1) No funds made available out of the Highway Trust Fund may be used to construct Type II noise barriers, as defined by this regulation, if such noise barriers were not part of a project approved by the FHWA before the November 28, 1995.

(2) Federal funds are available for Type II noise barriers along lands that were developed or were under substantial construction before approval of the acquisition of the rights-of-ways for, or construction of, the existing highway.

(3) FHWA will not approve noise abatement measures for locations where such measures were previously determined not to be feasible and reasonable for a Type I project.

(c) *Noise abatement measures.* The following noise abatement measures may be considered for incorporation into a Type I or Type II project to reduce traffic noise impacts. The costs of such measures may be included in Federal-aid participating project costs with the Federal share being the same as that for the system on which the project is located.

(1) Construction of noise barriers, including acquisition of property rights, either within or outside the highway right-of-way. Landscaping is not a viable noise abatement measure.

(2) Traffic management measures including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.

(3) Alteration of horizontal and vertical alignments.

(4) Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise. This measure may be included in Type I projects only.

(5) Noise insulation of Activity Category D land use facilities listed in Table 1. Post-installation maintenance and operational costs for noise insulation are not eligible for Federal-aid funding.

§772.17 Information for local officials.

(a) To minimize future traffic noise impacts on currently undeveloped lands of Type I projects, a highway agency shall inform local officials within whose jurisdiction the highway project is located of:

(1) Noise compatible planning concepts;

(2) The best estimation of the future design year noise levels at various distances from the edge of the nearest travel lane of the highway improvement where the future noise levels meet the highway agency's definition of "approach" for undeveloped lands or properties within the project limits. At a minimum, identify the distance to the exterior noise abatement criteria in Table 1;

(3) Non-eligibility for Federal-aid participation for a Type II project as described in §772.15(b).

(b) If a highway agency chooses to participate in a Type II noise program or to use the date of development as one of the factors in determining the reasonableness of a Type I noise abatement measure, the highway agency shall have a statewide outreach program to inform local officials and the public of the items in §772.17(a)(1) through (3).

§772.19 Construction noise.

For all Type I and II projects, a highway agency shall:

(a) Identify land uses or activities that may be affected by noise from construction of the project. The identification is to be performed during the project development studies.

(b) Determine the measures that are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community. This determination shall include a weighing of the benefits achieved and the overall adverse social, economic, and environmental effects and costs of the abatement measures.

(c) Incorporate the needed abatement measures in the plans and specifications.

Table 1 to Part 772—Noise Abatement Criteria

[Hourly A-Weighted Sound Level_decibels (dB(A))[1]]

Activity category	Activity Leq(h)	Criteria[2] L10(h)	Evaluation location	Activity description
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[3]	67	70	Exterior	Residential.
C[3]	67	70	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of

				worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[3]	72	75	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F				Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G				Undeveloped lands that are not permitted.

[1]Either Leq(h) or L10(h) (but not both) may be used on a project.

[2]The Leq(h) and L10(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[3]Includes undeveloped lands permitted for this activity category.

APPENDIX B - Land Use Activity Categories and Noise Abatement Criteria

Table 1. Land Use Activity Categories and Noise Abatement Criteria

Activity Category	Activity Criteria[1] $L_{eq}(h)$, dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential.
C[2]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A–D or F.
F	---	---	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	---	---	Undeveloped lands that are not permitted.

[1]Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[2]Includes undeveloped lands permitted for this activity category.

APPENDIX C - Feasibility and Reasonableness Worksheet

Feasibility and Reasonableness Worksheet Example

HIGHWAY TRAFFIC NOISE ABATEMENT FOR PROJECT:

Receiver ID No.(s):

Location/Description:

Activity Category type:

Noise Abatement Criteria for this Activity Category(Leq) (Table 1 DOT&PF Noise Policy):

Existing Noise Level (Leq):

Future Build Noise Level (Leq):

Future No-Build Noise Level:

Has a noise impact been identified (If yes continue filling out worksheet. If no, no noise abatement is required. Sign worksheet and recommend no noise abatement)?: Yes No

Highway Traffic Noise Abatement Feasibility and Reasonableness Analysis:

Feasibility

Is the proposed noise abatement measure acoustically feasible?	Yes	No

Is the proposed noise abatement measure engineering feasible	Yes	No

Reasonableness

Is the proposed noise abatement measure considered reasonable?	Yes	No

Federal Mandatory Factors

1 **Cost Effectiveness.** Is the abatement measure cost effective?

2 **Views of Benefited Residents and Property Owners.** Do at least 60 percent of the impacted residents and property owners' surveyed desire noise abatement?

3 **Noise reduction design goal**? Does the noise abatement measure provide 7 dBA reduction to 50 percent or more of the benefitted receptors in the first row of structures?

DOT&PF Mandatory Factors (State funded only)

4. Development vs. Highway Timing. Were at least 50 percent of benefited receptors in the development built before highway construction?

5 **Development Existence.** Have at least 50 percent of benefited receptors in the development existed for at least 10 years?

6 **Absolute Predicted Build Noise Level**. Are the predicted future build noise levels at least 66dBA?

7 **Relative Predicted Build Noise Level**. Are the predicted future build noise levels at least 10 dBA greater than the existing noise levels?

8 **Build vs. No-Build Noise Levels**. Are the future build noise levels at least 5 dBA greater than the future No-Build noise levels?

9..**Land Use**. Is the land use changing rapidly and are there local ordinances or zoning in place to control the new development of noise sensitive land uses adjacent to transportation corridors?

Is Noise Abatement recommended for this impacted receptor(s)?

What type of noise abatement is recommended? (Note – The use of quiet pavements is not an approved noise abatement measure on Federal- Aid Projects. Quiet pavements can be utilized as an abatement measure on State-funded projects with the approval of the Regional Preconstruction Engineer)

What is the basis for this recommendation?

_____ _____

Regional Environmental Manager Date

_____ _____

DOT&PF Project Manager Date

I have determined that the use of quiet pavement to mitigate noise impacts on a state-funded project is within the cost constraints of the legislative appropriation for the proposed project.

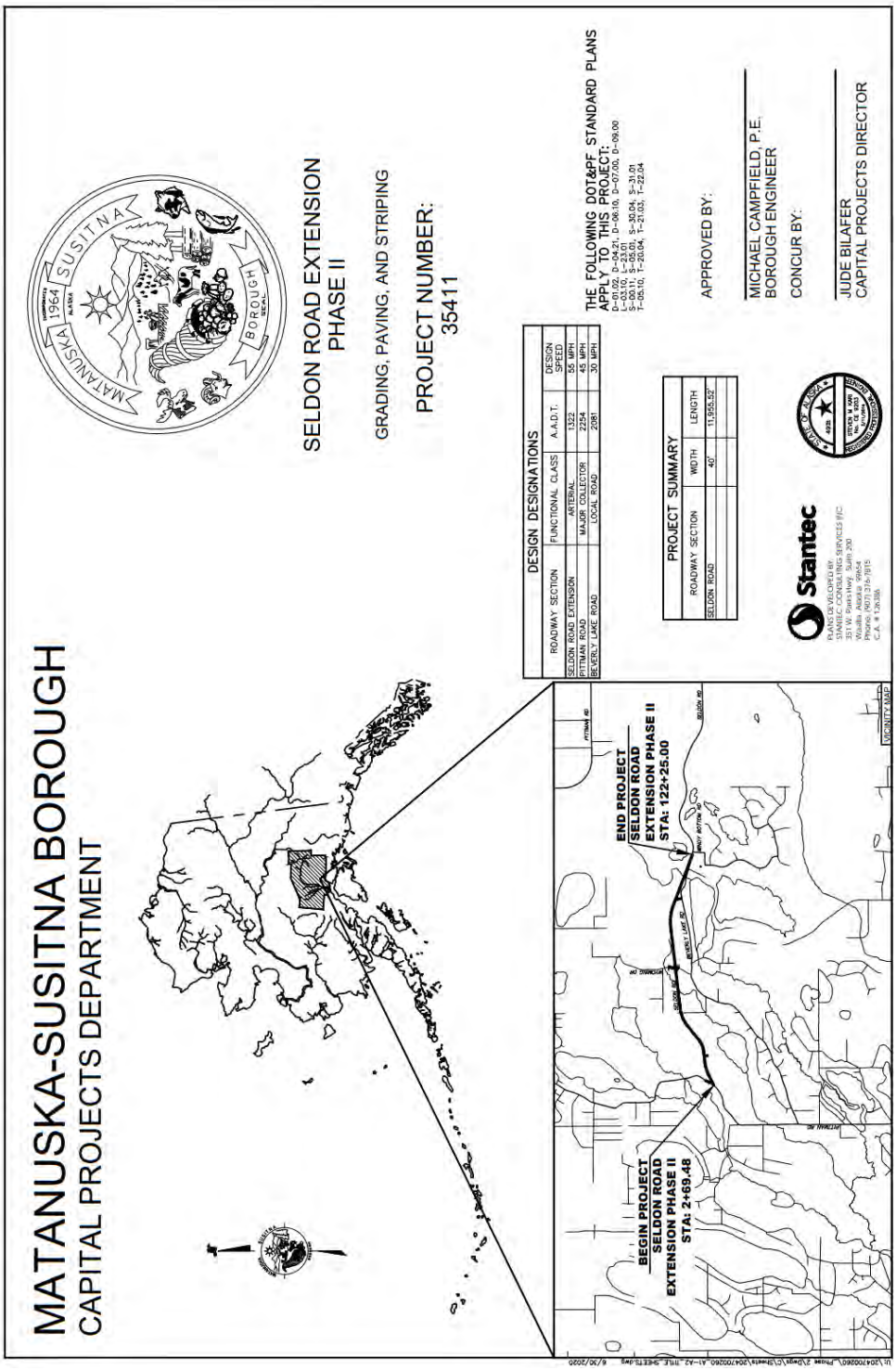
_____ _____

Preconstruction Engineer [3] Date

[3] The Preconstruction Engineer's signature is only required if quiet pavements are recommended on State-funded projects. The Preconstruction Engineer must determine whether the incorporation of quiet pavements into the State-funded project is within the cost constraints of the legislative appropriation

Appendix B: Project Design

The analysis is based on the following design files available from Stantec.



Appendix C: Introduction to Acoustics

Sound is defined as any pressure variation that the human ear can detect, from barely perceptible sounds to sound levels that can cause hearing damage. The magnitude of the variations of the air pressure from the static air pressure is a measure of the sound level. The number of cyclic pressure variations per second is the frequency of sound. When sounds are unpleasant, unwanted, or disturbingly loud, we tend to classify them as noise.

Compared with the static air pressure, the audible sound pressure variations range from the threshold of hearing, a very small 20 μPa (20 x 10^{-6} Pascal), to 100 Pa, a level so loud it is referred to as the threshold of pain. Because the ratio between these numbers is more than a million to one, using Pascal to describe sound levels can be awkward. The "dB" measurement is a logarithmic conversion of air pressure level variations from Pascal to a unit of measure with a more convenient numbering system. This conversion not only allows for a more convenient scale but is also a more accurate representation of how the human ear reacts to variations in air pressure. Measurements made using the decibel scale will be denoted dB.

The smallest noise level change that can be detected by the human ear is approximately 3 dB. A doubling in the static air pressure amounts to a change of 6 dB, and an increase of 10 dB is roughly equivalent to a doubling in the perceived sound level. Under free-field conditions, where there are no reflections or additional attenuation, sound is known to decrease at a rate of 6 dB for each doubling of distance. This is commonly known as the inverse square law. For example, a sound level of 70 dB at a distance of 100 feet would decrease to 64 dB at 200 feet, or 58 dB at 400 feet. The mathematical definition of sound pressure level in dB is listed below.

L_p (sound pressure level). The sound pressure in dB is 20 times the log of the ratio of the measured pressure, p, to the static pressure, p_o, where p_o is 20 μPa.

$$L_{pa} = 20Log_{10}\left(\frac{p}{p_o}\right)dB \quad (re\ 20\mu Pa)$$

In acoustic measurements where the primary concern is the effect on humans, the sound readings are sometimes compensated by an "A"-weighted filter. The A-weighted filter accounts for people's limited hearing response in the upper and lower frequency bands. Sound pressure level measurements made using the A-weighted filter are denoted dBA.

General Measurement Descriptors

- **Leq (equivalent continuous sound level).** The constant sound level in dBA that, lasting for a time "T," would have produced the same energy in the same time period "T" as an actual A-weighted noise event.

$$L_{eq} = 20Log_{10}\frac{1}{T}\int_{T}^{0}\left(\frac{p(t)}{p_o}\right)^2 dt$$

- **MaxPeak (maximum A-weighted sound level).** The greatest continuous sound level, in dBA, measured during the preset measurement period.
- **Lmax (maximum A-weighted RMS sound level).** The greatest RMS (root-mean square) sound level, in dBA, measured during the preset measurement period.
- **Lmin (minimum A-weighted RMS sound level).** The lowest RMS (root-mean square) sound level, in dBA, measured during the preset measurement period.

Statistical Noise Level Descriptors

Public response to sound depends greatly upon the range that the sound varies in a given environment. For example, people generally find a moderately high, constant sound level more tolerable than a quiet background level interrupted by high-level noise intrusions. In light of this subjective response, it is often useful to look at a statistical distribution of sound levels over a given time period. Such distributions identify the sound level exceeded and the percentage of time exceeded. Therefore, it allows for a more complete description of the range of sound levels during the given measurement period.

The sound level descriptor L_{xx} is defined as the sound level exceeded XX percent of the time. Some of the more common versions of this descriptor and their corresponding definitions are listed below:

- L01 The sound level is exceeded 1 percent of the time. This is a measure of the loudest sound levels during the measurement period. Example: During a 1-hour measurement, an L01 of 95 dBA means the sound level was at or above 95 dBA for 36 seconds.
- L50 The sound level is exceeded 50 percent of the time. This level corresponds to the median sound level. Example: During a 1-hour measurement, an L50 of 67 dBA means the sound level was at or above 67 dBA for 30 minutes.
- L90 The sound level is exceeded 90 percent of the time. This is a measure of the nominal background level. Example: During a 1-hour measurement, an L90 of 50 dBA means the sound level was at or above 50 dBA for 54 minutes.

Other commonly used LXX values include L2.5, L8.3, and L25. These correspond to the 5-, 10-, and 15-minute time levels for a 1-hour measurement period, respectively.

Typical Sound Levels

Table B-1 contains some common noise sources, their nominal maximum sound level in dBA, and the usual public response. The levels in this graph are comparable to the Lmax noise level descriptor. This graph would be useful when comparing the loudest noise produced with other familiar noise sources a person may have experienced.

Table B-1. Typical Maximum Sound Levels

Noise Source or Activity	Sound Level (dBA)	Subjective Impression	Relative Loudness (human judgment of different sound levels)
Jet aircraft takeoff from carrier (50 feet)	140	Threshold of pain	64 times as loud
50-horsepower siren (100 feet)	130		32 times as loud
Loud rock concert near stage, Jet takeoff (200 feet)	120	Uncomfortably loud	16 times as loud
Float plane takeoff (100 feet)	110		8 times as loud
Jet takeoff (2,000 feet)	100	Very loud	4 times as loud
Heavy truck or motorcycle (25 feet)	90		2 times as loud
Garbage disposal, food blender (2 feet), Pneumatic drill (50 feet)	80	Moderately loud	Reference loudness
Vacuum cleaner (10 feet), Passenger car at 65 mph (25 feet)	70		1/2 as loud
Large store air-conditioning unit (20 feet)	60		1/4 as loud
Light auto traffic (100 feet)	50	Quiet	1/8 as loud
Bedroom or quiet living room Bird calls	40		1/16 as loud
Quiet library, soft whisper (15 feet)	30	Very quiet	
High quality recording studio	20		
Acoustic Test Chamber	10	Just audible	
	0	Threshold of hearing	

Sources: Beranek (1988) and U.S. EPA (1971).

Appendix D: Noise Monitoring

Photo 1: Aerial View

Photo 2: Looking North

Photo 3: Looking Northeast

Photo 4: Looking Northwest

Monitoring Location M-1
Seldon Road east of N Windy Bottom Road

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Detailed Noise Monitoring Site Photos
Seldon Road Extension, Phase II Project

Photo 1: Aerial View

Photo 2: Looking North

Photo 3: Looking South

Photo 4: Looking East

Monitoring Location M-2
Northeast corner of N Beverly Drive
at Beverly Lake Road

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Portland, Oregon

Detailed Noise Monitoring Site Photos
Seldon Road Extension, Phase II Project

Photo 1: Aerial View

Photo 2: Looking South

Photo 3: Looking North

Photo 4: Looking West

Monitoring Location M-3
Northwest on Wyoming Drive
at Beverly Lake Road

Michael Minor & Associates
Sound. Vibration. Air
Portland, Oregon

Detailed Noise Monitoring Site Photos
Seldon Road Extension, Phase II Project

Photo 1: Aerial View

Photo 2: Looking East

Photo 3: Looking Southwest

Photo 4: Looking North

Monitoring Location M-4
W Zehnder Road east of N Monroe Circle

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Detailed Noise Monitoring Site Photos
Seldon Road Extension, Phase II Project

Photo 1: Aerial View

Photo 2: Looking West

Photo 3: Looking Southeast

Photo 4: Looking Northwest

Monitoring Location M-5
W Zehnder Road at N Fullers Place

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Sound. Vibration. Air
Portland, Oregon

Detailed Noise Monitoring Site Photos
Seldon Road Extension, Phase II Project

Photo 1: Aerial View

Photo 2: Looking Southeast

Photo 3: Looking Northeast

Photo 4: Looking West

Monitoring Location M-1
Meadow Lakes Elementary School Entrance

Michael Minor & Associates
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Detailed Noise Monitoring Site Photos
Seldon Road Extension, Phase II Project

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Traffic Noise Monitoring Information Sheet

Project Name: Seldon Rd Extension, Phase II **Date:** 10-7-2022 **Site Number:** M-1

Monitoring Location: Seldon Rd at Windy Bottom **Meter:** 2238 **Color:** Green **Rec #:** M-1

Start Time: 8:53 am **End Time:** 9:23 am **Last 1-Secnod Leq:** _____ **Overall Leq:** 58.6

Temp: 55 **Cloud Cover:** Cloudy **Wind:** Slight **Precipitation:** Ø

Traffic Counts:

Roadway Name: Seldon - Eastbound **Cars** 27 **MTrucks** 2 **HTrucks** 1 **Speeds:** 50

Roadway Name: Seldon - Westbound **Cars** 17 **MTrucks** 1 **HTrucks** Ø **Speeds:** 50

Roadway Name: Windy Bottom - Nbound **Cars** 6 **MTrucks** Ø **HTrucks** Ø **Speeds:** 30

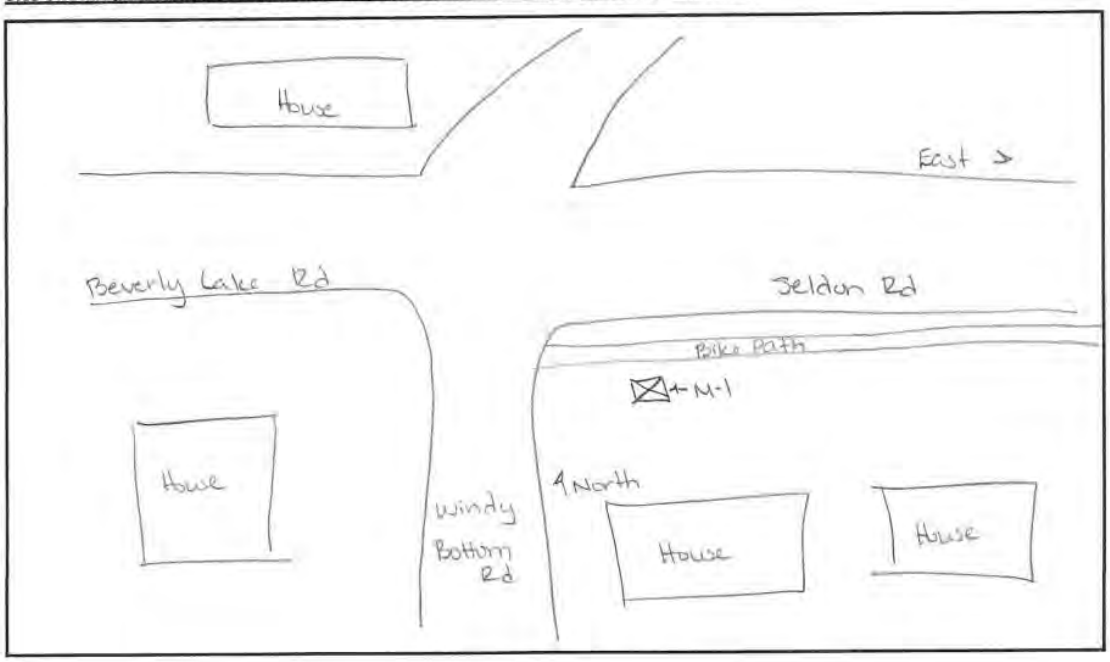
Roadway Name: Windy Bottom - Sbound **Cars** 3 **MTrucks** Ø **HTrucks** Ø **Speeds:** 30

Area Observations: _____

Non-Traffic Noise Sources: Jet - 8:54 ; Plane - 8:56 ; Plane - 9:01 ; Jet - 9:02 ; Jet - 9:10 ; Dog Barking

Topographical Information: _____

Site Sketch (*include direction arrow and approximate distance to roadway/curb*):



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Traffic Noise Monitoring Information Sheet

Supplemental Monitoring Sheet *(see site details on previous page)*

Project Name: Seldon Rd Extension, Phase II Date: 6.8.222 Site Number: M-1(2)

Monitoring Location: Windy Bottom Rd at Seldon Meter: 2239 Color: Green Rec #: M-1

Measurement Session 2

Start Time: 9:07 End Time: 9:37 Last 1-Secnod Leq: _____ Overall Leq: 57.0

Temp: 64° Cloud Cover: Clear Wind: Light Precipitation: Ø

Traffic Counts:

Roadway Name: Seldon EB	Cars 31	MTrucks Ø	HTrucks 1	Speeds: 50	
Roadway Name: Seldon WB	Cars 23	MTrucks Ø	HTrucks Ø	Speeds: 50	
Area Observations: Windy Bottom NB	7	Ø	Ø	30	
Windy Bottom SB	6	Ø	Ø	30	

Non-Traffic Noise Sources: Plane - 9:13 , Equipment Noise in Distance - 9:26

Topographical Information: _____

Measurement Session 3

Start Time: _____ End Time: _____ Last 1-Secnod Leq: _____ Overall Leq: _____

Temp: _____ Cloud Cover: _____ Wind: _____ Precipitation: _____

Traffic Counts:

Roadway Name: _____ Cars _____ MTrucks _____ HTrucks _____ Speeds: _____

Roadway Name: _____ Cars _____ MTrucks _____ HTrucks _____ Speeds: _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

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Traffic Noise Monitoring Information Sheet

Project Name: Seldon Rd Ext Phase II **Date:** 6-7-22 **Site Number:** M-2

Monitoring Location: Beverly Lake Rd at Bev. Dr **Meter:** 2238 **Color:** Green **Rec #:** M-2

Start Time: 9:42 **End Time:** 10:12 **Last 1-Secnod Leq:** _____ **Overall Leq:** 52.6

Temp: 55° **Cloud Cover:** Heavy **Wind:** Slight **Precipitation:** Ø

Traffic Counts:

Roadway Name: Bev. Lake - EB **Cars** 14 **MTrucks** 1 **HTrucks** Ø **Speeds:** 50

Roadway Name: Bev. Lake - WB **Cars** 9 **MTrucks** Ø **HTrucks** Ø **Speeds:** 50

Roadway Name: Bev. Dr - NB **Cars** Ø **MTrucks** Ø **HTrucks** Ø **Speeds:** —

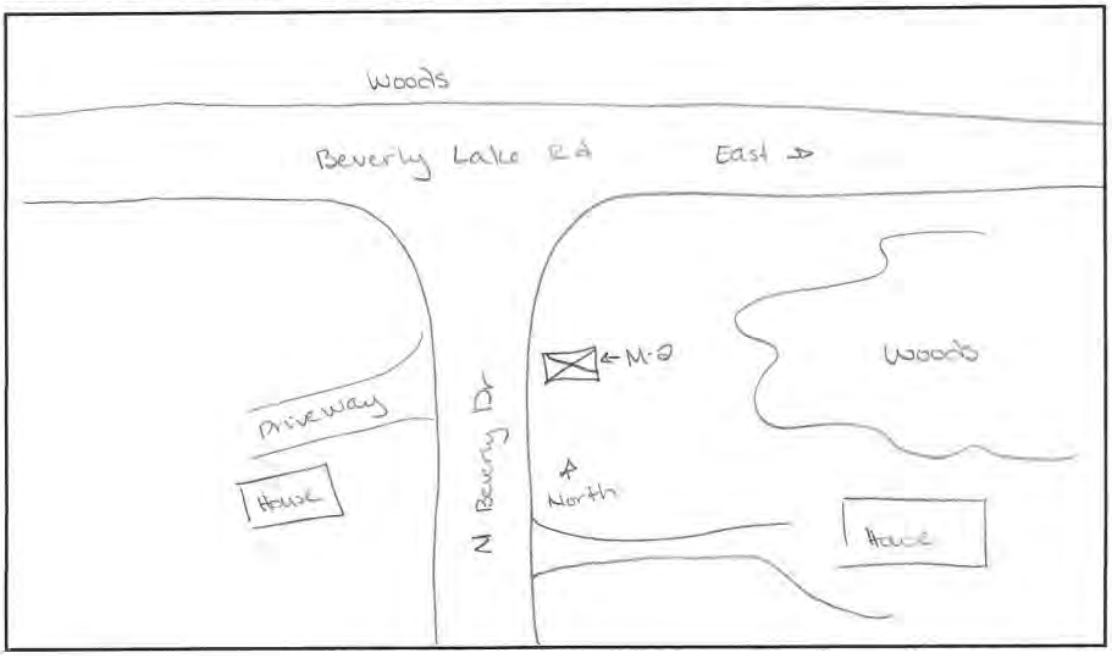
Roadway Name: Bev. Dr - SB **Cars** Ø **MTrucks** Ø **HTrucks** Ø **Speeds:** —

Area Observations: _____

Non-Traffic Noise Sources: Plane - 9:54 ; Plane - 10:00 ; Jet - 10:04 ; Dog Barking

Topographical Information: _____

Site Sketch (*include direction arrow and approximate distance to roadway/curb*):



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Traffic Noise Monitoring Information Sheet

Supplemental Monitoring Sheet *(see site details on previous page)*

Project Name: Seldon Rd Extension, Phase II **Date:** 6·8·2022 **Site Number:** M·2 (2)

Monitoring Location: Bev. Lake Rd at Bev. Dr. **Meter:** 2238 **Color:** Green **Rec #:** M·2

Measurement Session 2

Start Time: 9:50 **End Time:** 10:20 **Last 1-Secnod Leq:** _____ **Overall Leq:** 50.0

Temp: 64 **Cloud Cover:** Partial **Wind:** Slight **Precipitation:** Ø

Traffic Counts:

Roadway Name: Bev. Lake EB	**Cars** 25	**MTrucks** Ø	**HTrucks** Ø	**Speeds:** 50	
Roadway Name: Bev. Lake WB	**Cars** 14	**MTrucks** 2	**HTrucks** Ø	**Speeds:** 50	
Area Observations: Bev. Dr NB	Ø	Ø	Ø	Ø	
Bev. Dr SB	Ø	Ø	Ø	Ø	

Non-Traffic Noise Sources: Engine Drone : Chainsaw: 9:55, 10:17; Plane - 10:18; Jet - 10:07, 10:12

Topographical Information: woodchopper in distance

Measurement Session 3

Start Time: _____ **End Time:** _____ **Last 1-Secnod Leq:** _____ **Overall Leq:** _____

Temp: _____ **Cloud Cover:** _____ **Wind:** _____ **Precipitation:** _____

Traffic Counts:

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

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Traffic Noise Monitoring Information Sheet

Project Name: Seldon Rd Ext. Phase II **Date:** 6.7.22 **Site Number:** M.3

Monitoring Location: Wyoming Dr at Bev. Lake Rd **Meter:** 2238 **Color:** Green

Start Time: 10:26 **End Time:** 10:56 **Last 1-Secnod Leq:** _____ **Overall Leq:** 57.5

Temp: 58 **Cloud Cover:** Heavy **Wind:** Slight **Precipitation:** Ø

Traffic Counts:

Roadway Name: Bev. Lake WB **Cars** 4 **MedTrucks** 1 **HvyTrucks** Ø **Speeds:** 45

Roadway Name: Bev. Lake EB **Cars** 11 **MedTrucks** 1 **HvyTrucks** Ø **Speeds:** 45

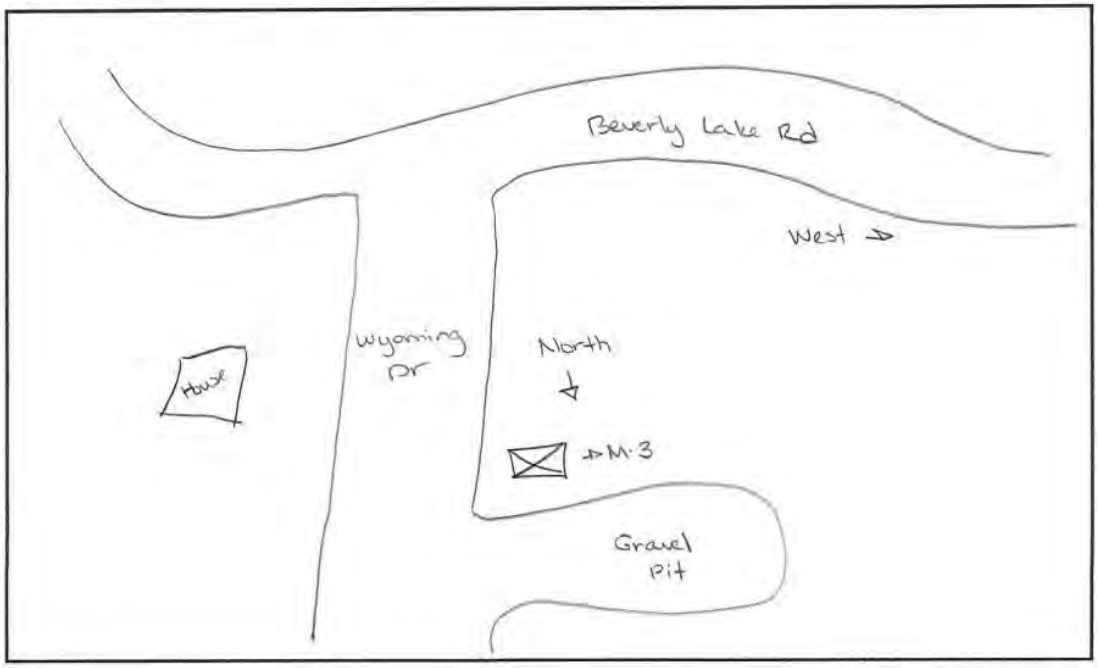
Roadway Name: Wyoming N **Cars** 7 **MedTrucks** Ø **HvyTrucks** Ø **Speeds:** 30

Roadway Name: Wyoming S **Cars** 1 **MedTrucks** 4 **HvyTrucks** Ø **Speeds:** 30

Area Observations: Jet - 10:26 ; Horn - 10:30 ; Dog - 10:36 ; Plane - 10:42, 10:45 ; Horn - 10:50

Sporadic Dog Barking

Site Sketch



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Traffic Noise Monitoring Information Sheet

Supplemental Monitoring Sheet *(see site details on previous page)*

Project Name: Seldon Rd Ext, Phase II **Date:** 6.8.22 **Site Number:** M.3(2)

Monitoring Location: Wyoming Dr at Bev. Lake Rd **Meter:** 2238 **Color:** Green **Rec #:** M.3

Measurement Session 2

Start Time: 10:32 **End Time:** 11:02 **Last 1-Secnod Leq:** _____ **Overall Leq:** 54.4

Temp: 66 **Cloud Cover:** Light **Wind:** Calm **Precipitation:** Ø

Traffic Counts:

Roadway Name: Bev. Lake WB **Cars** 8 **MTrucks** Ø **HTrucks** 0 **Speeds:** 30

Roadway Name: Bev. Lake EB **Cars** 10 **MTrucks** Ø **HTrucks** 1 **Speeds:** 30

Area Observations: Wyoming NB 1 Ø Ø 45
Wyoming SB 4 1 Ø 45

Non-Traffic Noise Sources: Dog Barking @ 10:33 ; Phone - 10:33, 10:38, 10:45, 10:47, 10:50

Topographical Information: _____

Measurement Session 3

Start Time: _____ **End Time:** _____ **Last 1-Secnod Leq:** _____ **Overall Leq:** _____

Temp: _____ **Cloud Cover:** _____ **Wind:** _____ **Precipitation:** _____

Traffic Counts:

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

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Traffic Noise Monitoring Information Sheet

Project Name: Seldon Rd Ext, Phase II **Date:** 6-7-22 **Site Number:** M-4

Monitoring Location: W Zehnder Rd at Monroe Cr. **Meter:** 2238 **Color:** Green **Rec #:** M-4

Start Time: 11:31 **End Time:** 12:01 **Last 1-Secnod Leq:** _____ **Overall Leq:** 51.9

Temp: 58 **Cloud Cover:** Heavy **Wind:** Slight **Precipitation:** Ø

Traffic Counts:

Roadway Name: Zehnder Rd - EB **Cars** 4 **MTrucks** 9 **HTrucks** Ø **Speeds:** 20

Roadway Name: Zehnder Rd - WB **Cars** 1 **MTrucks** Ø **HTrucks** Ø **Speeds:** 20

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

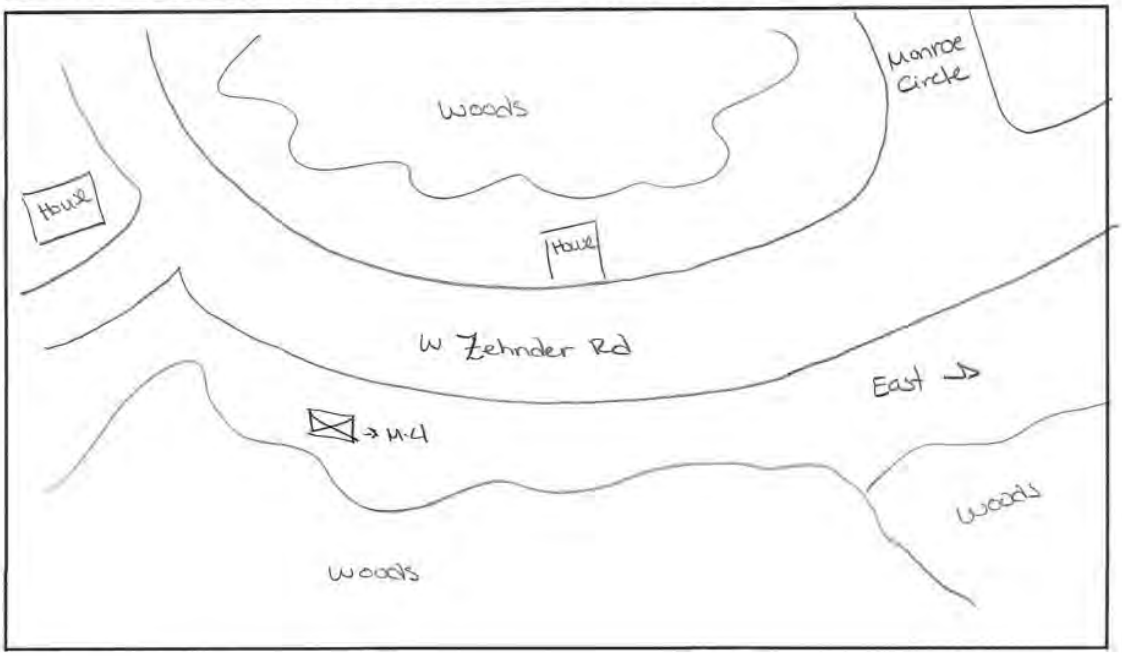
Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Area Observations: Gravel Road

Non-Traffic Noise Sources: Dog Barking - 12:01

Topographical Information: Zehnder & Monroe both gravel roads.

Site Sketch (*include direction arrow and approximate distance to roadway/curb*):



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Traffic Noise Monitoring Information Sheet

Supplemental Monitoring Sheet *(see site details on previous page)*

Project Name: Seldon Rd Ext, Phase II **Date:** 6.8.22 **Site Number:** M.4 (2)

Monitoring Location: Zehnder Rd at Monroe Circle **Meter:** 22390 **Color:** Green **Rec #:** M.41

Measurement Session 2

Start Time: 11:18 **End Time:** 11:48 **Last 1-Secnod Leq:** _____ **Overall Leq:** 46.6

Temp: 66° **Cloud Cover:** Light **Wind:** Calm **Precipitation:** Ø

Traffic Counts:

Roadway Name: Zehnder EB **Cars** Ø **MTrucks** Ø **HTrucks** Ø **Speeds:** 20

Roadway Name: Zehnder WB / Monroe Circle **Cars** 1 / 1 **MTrucks** Ø / Ø **HTrucks** Ø / Ø **Speeds:** 20

Area Observations: _____

Non-Traffic Noise Sources: Plane - 11:19 ; Dirtbike - 11:20 ; Plane - 11:29, 11:35, 11:36

Topographical Information: Zehnder ; Monroe both gravel roads

Measurement Session 3

Start Time: _____ **End Time:** _____ **Last 1-Secnod Leq:** _____ **Overall Leq:** _____

Temp: _____ **Cloud Cover:** _____ **Wind:** _____ **Precipitation:** _____

Traffic Counts:

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

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Traffic Noise Monitoring Information Sheet

Project Name: Seldon Rd Ext, Phase II **Date:** 6.7.22 **Site Number:** M-5

Monitoring Location: Zehnder at Fullers PL **Meter:** 2238 **Color:** Green

Start Time: 12:08 **End Time:** 12:38 **Last 1-Secnod Leq:** _____ **Overall Leq:** 57.2

Temp: 55 **Cloud Cover:** Heavy **Wind:** Moderate **Precipitation:** Light Rain

Traffic Counts:

Roadway Name: Zehndr WB **Cars** 4 **MedTrucks** Ø **HvyTrucks** Ø **Speeds:** 30

Roadway Name: Zehndr EB **Cars** 1 **MedTrucks** Ø **HvyTrucks** Ø **Speeds:** 30

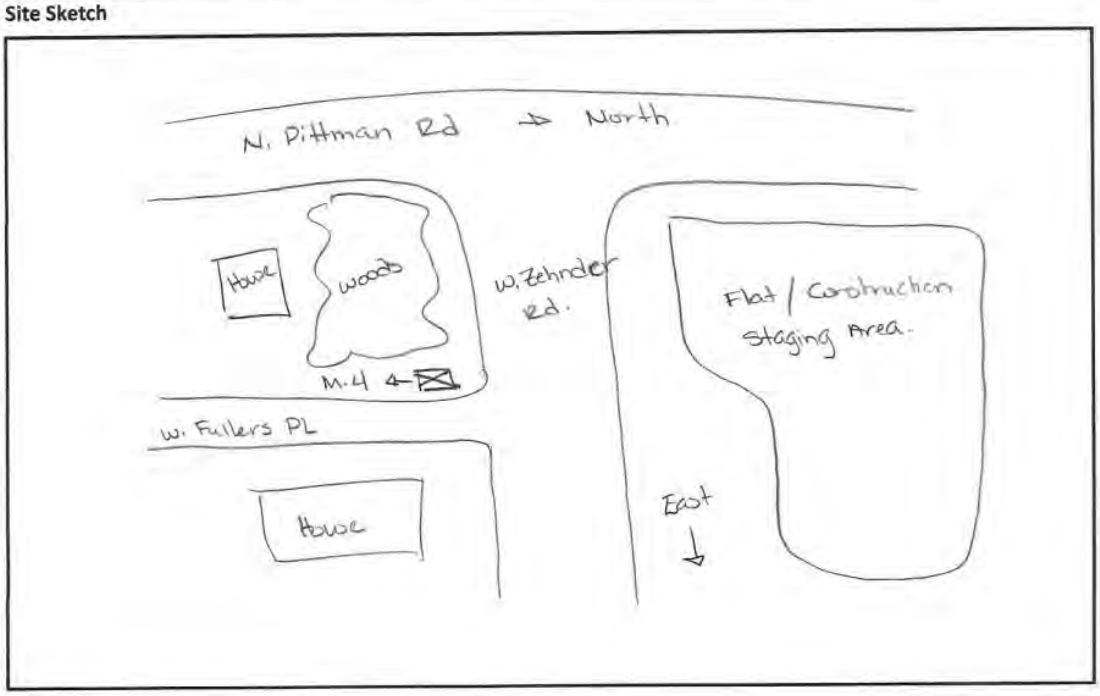
Roadway Name: Pitman NB **Cars** 9 **MedTrucks** Ø **HvyTrucks** 3 **Speeds:** 45

Roadway Name: Pittman SB **Cars** 5 **MedTrucks** Ø **HvyTrucks** 1 **Speeds:** 45

Area Observations: Plane: 12:09, 12:28

Zehndrer is a gravel Rd.

Site Sketch



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Traffic Noise Monitoring Information Sheet

Supplemental Monitoring Sheet *(see site details on previous page)*

Project Name: Seldon Rd Ext, Phase II **Date:** 6.8.22 **Site Number:** M-5(2)

Monitoring Location: Zehndor at Fullers Pl **Meter:** 2238 **Color:** Green **Rec #:** M-5

Measurement Session 2

Start Time: 11:56 **End Time:** 12:26 **Last 1-Secnod Leq:** _____ **Overall Leq:** 49

Temp: 48° **Cloud Cover:** Light **Wind:** Slightly **Precipitation:** Ø

Traffic Counts:

Roadway Name: Zehndr WB	**Cars** 2	**MTrucks** Ø	**HTrucks** Ø	**Speeds:** 20	
Roadway Name: Zehndr EB	**Cars** Ø	**MTrucks** Ø	**HTrucks** Ø	**Speeds:** 20	
Area Observations: Pittman NB	14	1	2	45	
Pittman SB	18	1	1	45	

Non-Traffic Noise Sources: _____

Topographical Information: Meter at higher elevation than Pittman Rd
Zehndr is a gravel Rd

Measurement Session 3

Start Time: _____ **End Time:** _____ **Last 1-Secnod Leq:** _____ **Overall Leq:** _____

Temp: _____ **Cloud Cover:** _____ **Wind:** _____ **Precipitation:** _____

Traffic Counts:

Roadway Name: _____	**Cars** _____	**MTrucks** _____	**HTrucks** _____	**Speeds:** _____
Roadway Name: _____	**Cars** _____	**MTrucks** _____	**HTrucks** _____	**Speeds:** _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

Michael Minor & Associates
Sound . Vibration . Air
4923 SE 36th Avenue
Portland, Oregon 97202
503.220.0495 ~ fax 866.847.0495

Traffic Noise Monitoring Information Sheet

Project Name: Seldon Rd Ext, Phase II **Date:** 6-7-22 **Site Number:** M-6

Monitoring Location: Meadow Lakes Elementary at Pittman **Meter:** 2238 **Color:** Green **Rec #:** M-6

Start Time: 13:03 **End Time:** 13:33 **Last 1-Secnod Leq:** _____ **Overall Leq:** 47.6

Temp: 56° **Cloud Cover:** Heavy **Wind:** Slight **Precipitation:** Light

Traffic Counts:

Roadway Name: Pittman NB **Cars** 21 **MTrucks** 0 **HTrucks** 0 **Speeds:** 30

Roadway Name: Pittman SB **Cars** 25 **MTrucks** 5 **HTrucks** 4 **Speeds:** 30

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

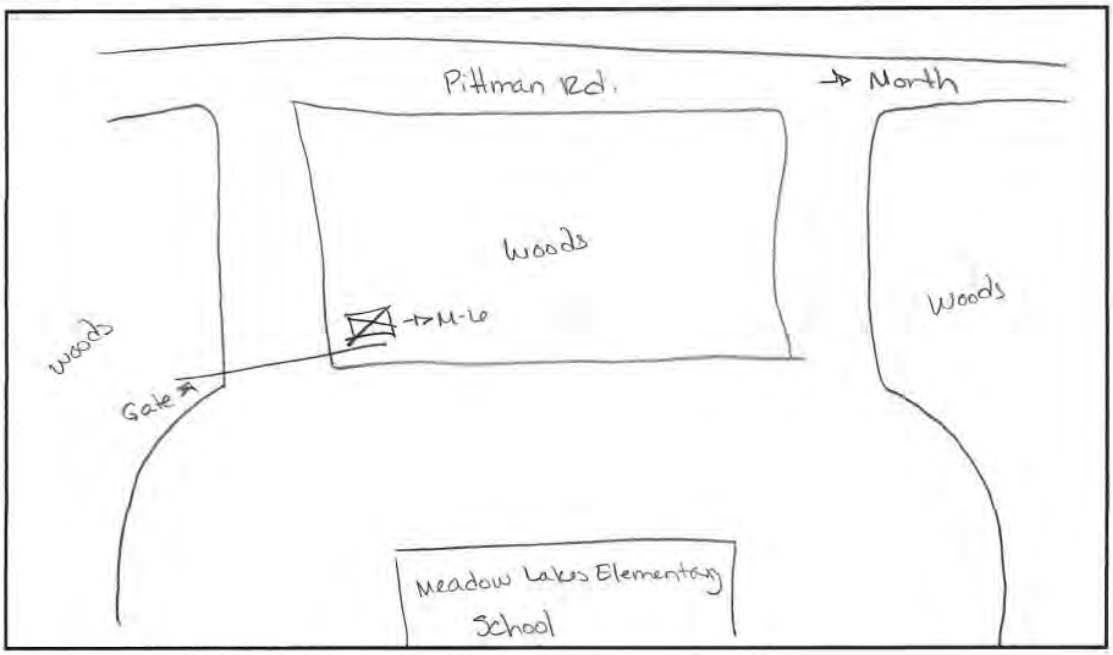
Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

Site Sketch (*include direction arrow and approximate distance to roadway/curb*):



Michael Minor & Associates
Sound . Vibration . Air
4923 SE 36th Avenue
Portland, Oregon 97202
503.220.0495 ~ fax 866.847.0495

Traffic Noise Monitoring Information Sheet

Supplemental Monitoring Sheet *(see site details on previous page)*

Project Name: Seldon Rd Ext, Phase II **Date:** 6.8.22 **Site Number:** M.L (2)

Monitoring Location: Meadow Lakes Elementary at Pittman Rd. **Meter:** 2238 **Color:** Green **Rec #:** M.L

Measurement Session 2

Start Time: 12:57 **End Time:** 13:07 **Last 1-Secnod Leq:** _____ **Overall Leq:** 44.9

Temp: 68° **Cloud Cover:** Sparse **Wind:** Calm **Precipitation:** Ø

Traffic Counts:

Roadway Name: Pittman NB **Cars** 19 **MTrucks** 1 **HTrucks** Ø **Speeds:** 50

Roadway Name: Pittman SB **Cars** 21 **MTrucks** Ø **HTrucks** 2 **Speeds:** 50

Area Observations: _____

Non-Traffic Noise Sources: Jet - 12:39 ; Plane - 12:46, 12:49, 13:03

Topographical Information: _____

Measurement Session 3

Start Time: _____ **End Time:** _____ **Last 1-Secnod Leq:** _____ **Overall Leq:** _____

Temp: _____ **Cloud Cover:** _____ **Wind:** _____ **Precipitation:** _____

Traffic Counts:

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Roadway Name: _____ **Cars** _____ **MTrucks** _____ **HTrucks** _____ **Speeds:** _____

Area Observations: _____

Non-Traffic Noise Sources: _____

Topographical Information: _____

CERTIFICATE OF CALIBRATION
27170-5
FOR BRÜEL & KJÆR
SOUND LEVEL METER

Model **2238** Serial No. **2301300**
ID No. **N/A**
With Microphone Model **4188** Serial No. **2288971**

Customer: **Michael Minor & Associates**
Portland, OR 97202 P.O. No. **Letter/M. Minor**

was tested and met factory specifications at the points tested and as outlined in ANSI S1.4-1983 Type 1; IEC 651-1979 Type 1; IEC-61672-3:2006 Class 1

on **02 JUN 2022** **BY HAROLD LYNCH**
Service Manager

As received and as left condition: Within Specification.
Re-calibration due on: **02 JUN 2023**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	1051	1777523	28 SEP 2021	28 SEP 2022
B&K	2636	1423390	03 JAN 2022	03 JAN 2023
B&K	4226	3274134	30 NOV 2021	30 NOV 2022
B&K	4231	1770857	09 SEP 2021	09 SEP 2022
HP	34401A	MY45023668	25 JAN 2022	25 JAN 2023
HP	3458A	2823A07179	21 AUG 2021	21 AUG 2022

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2015 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left" condition.

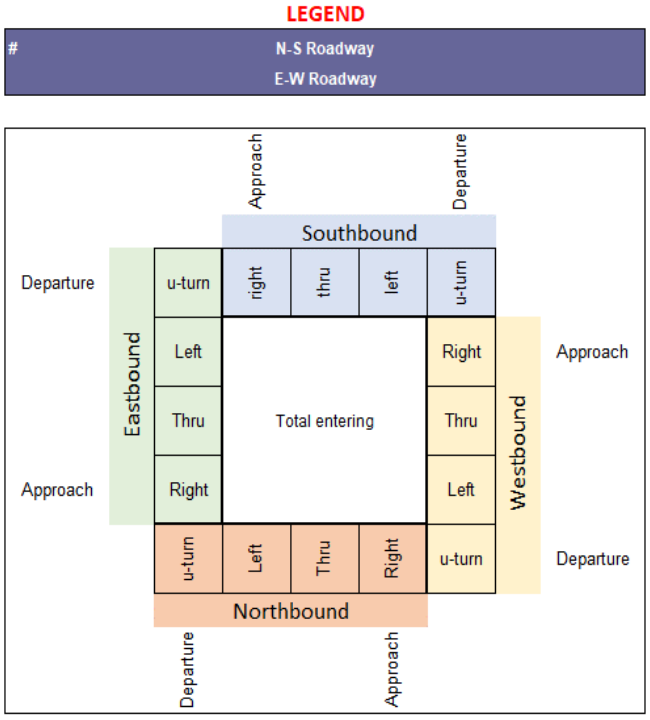
Reference Test Procedure: **ACCT Procedure 2238 Version 2.1.0.** (Rev. Aug 2013)
Brüel & Kjær Factory Service Instructions: **2238**

Temperature	Relative Humidity	Barometric Pressure
23°C	**36** %	**989.34** hPa

Signed: Harold Lynch

ODIN METROLOGY, INC.
CALIBRATION OF BRÜEL & KJÆR INSTRUMENTS
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

Appendix E: Traffic Volumes



2022 Existing PM Peak Traffic Volumes

1	NB+SB	N Windy Bottom Rd
	EB+WB	Beverly Lake Rd/Seldon Rd

		0			0	
201	0	0	0	0	0	
	0				0	201
	139		340		201	
139	0				0	
	0	0	0	0	0	139
	0			0		

1	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	30
Westbound	95%	5%	0%	50
Northbound	95%	5%	0%	25
Southbound	95%	5%	0%	25

2	NB+SB	Wyoming Dr
	EB+WB	Beverly Lake Rd

		11			18	
179	0	4	0	7	0	
	7				11	190
	117		354		168	
139	15				11	
	0	7	0	7	0	131
	26			14		

2	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	30
Westbound	95%	5%	0%	30
Northbound	95%	5%	0%	30
Southbound	95%	5%	0%	30

3	NB+SB	Pittman Rd
	EB+WB	Meadow LakesElementary School

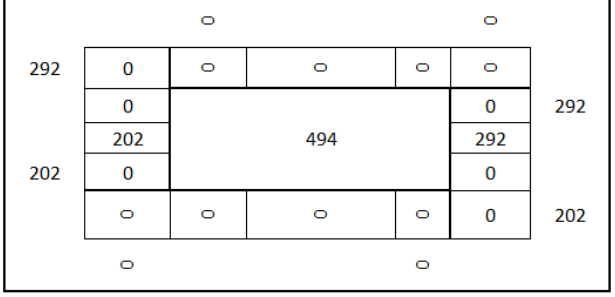
		141			172	
0	0	0	141	0	0	
	0				0	0
	0		313		0	
0	0				0	
	0	0	172	0	0	0
	141			172		

3	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	25
Westbound	95%	5%	0%	25
Northbound	95%	5%	0%	45
Southbound	95%	5%	0%	45

Traffic data provided by Stantec.

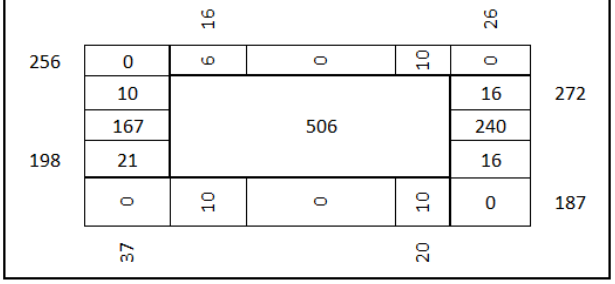
2048 Future No-Build PM Peak Traffic Volumes

1 NB+SB N Windy Bottom Rd
EB+WB Beverly Lake Rd/Seldon Rd



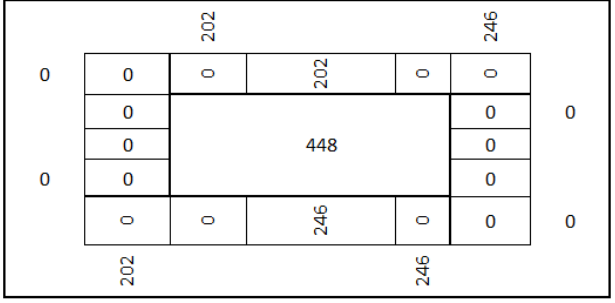
1 Vehicle Class Percentage Vehicle Speeds				
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	30
Westbound	95%	5%	0%	50
Northbound	95%	5%	0%	25
Southbound	95%	5%	0%	25

2 NB+SB Wyoming Dr
EB+WB Beverly Lake Rd



2 Vehicle Class Percentage Vehicle Speeds				
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	30
Westbound	95%	5%	0%	30
Northbound	95%	5%	0%	30
Southbound	95%	5%	0%	30

3 NB+SB Pittman Rd
EB+WB Meadow LakesElementary School



3 Vehicle Class Percentage Vehicle Speeds				
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	25
Westbound	95%	5%	0%	25
Northbound	95%	5%	0%	45
Southbound	95%	5%	0%	45

Traffic data provided by Stantec.

2048 Future Build PM Peak Traffic Volumes

1	NB+SB	N Windy Bottom Rd			
	EB+WB	Beverly Lake Rd/Seldon Rd			
		0			0
484	0	0	0	0	0
	0				0
	416		998		472
435	19				60
	0	12	0	19	0
	79			31	

1	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	55
Westbound	95%	5%	0%	50
Northbound	95%	5%	0%	25
Southbound	95%	5%	0%	25

2	NB+SB	Beverly Lake Rd Connection			
	EB+WB	Seldon Rd			
		0			0
455	0	0	0	0	0
	0				0
	408		928		452
413	5				32
	0	3	0	28	0
	37			31	

2	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	55
Westbound	95%	5%	0%	55
Northbound	95%	5%	0%	30
Southbound	95%	5%	0%	30

3	NB+SB	Wyoming Dr			
	EB+WB	Seldon Rd			
		78			89
375	0	14	0	64	0
	26				63
	308		924		346
362	28				32
	0	15	0	28	0
	60			43	

3	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	55
Westbound	95%	5%	0%	55
Northbound	95%	5%	0%	30
Southbound	95%	5%	0%	30

Traffic data provided by Stantec.

2048 Future Build PM Peak Traffic Volumes

4	NB+SB	Pittman Rd			
	EB+WB	Seldon Rd			
		254			288
426	0	165	1	88	0
	198				89
	248		1,064		260
447	1				8
	0	1	1	4	0
	10			6	

3	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	55
Westbound	95%	5%	0%	55
Northbound	95%	5%	0%	45
Southbound	95%	5%	0%	45

5	NB+SB	Frontage Rd Connection			
	EB+WB	Frontage Rd			
		10			5
1	0	0	0	10	0
	0				5
	0		16		1
0	0				0
	0	0	0	0	0
	0			0	

3	Vehicle Class Percentage Vehicle Speeds			
Movement Direction	Passenger Vehicles	Medium Trucks	Heavy Trucks	Speeds
Eastbound	95%	5%	0%	35
Westbound	95%	5%	0%	35
Northbound	95%	5%	0%	35
Southbound	95%	5%	0%	35

Traffic data provided by Stantec.

APPENDIX F

Public and Agency Scoping

1. DOT&PF Notice of Intent, 2022
2. Agency Scoping Email & Letter, 2022
3. ADEC, Air Quality Division Comment, 2022
4. ADEC, Contaminated Sites Program Comment, 2022
5. ADF&G, Habitat Division Comment, 2022
6. ADEC, Drinking Water Program Recommendations, 2022
7. Public Involvement Plan, 2022
8. Project Fact Sheet, 2022
9. Meadow Lakes Presentation Outline, 2022
10. Public Meeting Postcard, 2014
11. Public Meeting Flier, 2014
12. Mat-Su Valley Frontiersman Advertisement, 2014
13. DOT&PF Website, 2022
14. MSB Website, 2022MSB Website
15. Project Fact Sheet, 2014
16. Public Meeting Summary, 2014
17. Agency Scoping Email & Letter, 2014
18. U.S. Fish & Wildlife Service Comment, 2014

Notice of Intent to Begin Engineering and Environmental Studies. Seldon Road Extension Phase II

The Alaska Department of Transportation and Public Facilities (DOT&PF has assumed the responsibilities of the Federal Highway Administration under 23 U.S.C. 327 and is soliciting comments and information on a proposal to complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska. The purpose of the proposed project is to continue the roadway connection between Church Road and Pittman Road, the next link in the east-west corridor running from Palmer to Houston. The project will provide an alternate route to the Parks Highway, improve overall traffic circulation in the area, and provide better facilities for pedestrians.

The proposed work would include:

Extend Seldon Road with a 2.25 mile two-lane arterial facility
Construct frontage roads to tie into the existing road network
Reconstruct portions of adjacent roads to meet current standards and create new intersections
Construct a new 10-foot wide separated pedestrian pathway on the south side of the new facility
Construct a new trailhead parking area at the new Pittman Road intersection
Relocate utilities
Construct new drainage facilities
Clear and grub vegetation
Install new or replace roadside hardware, including signing and striping

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 2025. To ensure that all possible factors are considered, please provide written comments to the following address by March 4, 2022.

Brian Elliott, Regional Environmental Manager
DOT&PF Preliminary Design & Environmental
P.O. Box 196900
Anchorage, Alaska 99519-6900
Brian.Elliott@Alaska.gov

If you have any questions or require additional information, please contact Chris Bentz, P.E., Project Manager, at 269-0652 or Chris.Bentz@Alaska.gov.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated November 3, 2017, and executed by FHWA and DOT&PF.

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.

The DOT&PF complies with Title II of the Americans with Disabilities Act of 1990. Individuals with a hearing impairment can contact DOT&PF at our Telephone Device for the Deaf (TDD) at (907) 269-0473.

Attachments, History, Details

Attachments
None

Details

Department:	Transportation and Public Facilities

Revision History
Created 1/28/2022 12:57:42 PM by kjshelby

Category:	Public Notices
Sub-Category:	
Location(s):	Wasilla
Project/Regulation #:	CFHWY00562
Publish Date:	1/28/2022
Archive Date:	3/4/2022
Events/Deadlines:	

From:	Vonlindern, Drew A (DOT)
To:	Shannon.R.Morgan@usace.army.mil; regpagemaster@usace.army.mil; sturges.susan@epa.gov; R10-NEPA@epa.gov; Chu.Rebecca@epa.gov; Fordham.Tami@epa.gov; ak_fisheries@fws.gov; stuart.hartford@bia.gov; mark.kahklen@bia.gov; transportation.alaska@bia.gov; Heil, Cynthia L (DEC); DEC-Webmaster (DEC sponsored); CS.Scoping (DEC sponsored); jim.rypkema@alaska.gov; Chambon, Katrina M (DEC); Palmer, Charley (DEC); Buck, Teri A (DEC); Myers, Sarah E E (DFG); Williams, Kim (DFG); Peltier, Tim C (DFG); Rinaldi, Todd A (DFG); Brooks, Henry C (DNR); Kim.Sollien@matsugov.us; ted.eischeid@matsugov.us; ccb@matsugov.us; tripleb@mtaonline.net; judith.bittner@alaska.gov; cvadmin@chickaloon-nsn.gov; bewinnestaffer@chickaloon-nsn.gov; jewinnestaffer@chickaloon-nsn.gov; Alwade@chickaloon-nsn.gov; jbrune@ciri.com; kfoster@eklutnainc.com; info@eklutnainc.com; rweldin@eklutnainc.com; BDoss@eklutnainc.com; ksmith@eklutnainc.com; naspiras@eklutnainc.com; ldelgado@eklutnainc.com; bhattenburg@eklutnainc.com; knikcorp@gci.net; cvadmin@chickaloon.org; roads@chickaloon.org; rporter@kniktribe.org; ktoothaker@kniktribe.org; nve@eklutna-nsn.gov; Buss, Stephanie D (DEC)
Cc:	Bentz, Chris L (DOT); Elliott, Brian A (DOT)
Subject:	Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road
Date:	Wednesday, April 13, 2022 4:24:00 PM
Attachments:	CFHWY00562_Agency Scoping Materials.pdf

Dear Agency Staff:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is soliciting comments and information on a proposed project that would complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska. The project's scoping materials are attached to this email.

After reviewing the attached scoping materials, please reply with the following information:

1. Further analysis needed to evaluate sensitive resources potential impacted by the proposed project.
2. Regulatory permits and/or clearances required from your agency.
3. Any concerns or issues your agency or organization might have with the proposed project.

We are requesting that comments be delivered by May 15, 2022. If you feel that someone else in your organization should receive this notification, please forward this email to them so they may comment.

Thank you,

Drew von Lindern
Environmental Team Leader
Alaska Dept. of Transportation & Public Facilities
Preliminary Design and Environmental Section
P.O. Box 196900, Anchorage, Alaska 99519-6900
Phone (907) 269-0551 | Fax (907) 243-6927
Email: drew.vonlindern@alaska.gov

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Transportation and Public Facilities

DESIGN & ENGINEERING SERVICES
PRELIMINARY DESIGN & ENVIRONMENTAL

PO Box 196900
Anchorage, Alaska 99519-6900
Main: 907.269.0542
Toll Free: 800.770.5263
TDD: 907.269.0473

April 13, 2022

Project: Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road
Project No.: 0001723/CFHWY00562

Re: Request for scoping comments

The Alaska Department of Transportation and Public Facilities (DOT&PF) has assumed the responsibilities of the Federal Highway Administration under 23 U.S.C. 327, and is soliciting comments and information on a proposed project that would complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska (Figures 1-2).

Purpose and Need

The purpose of the proposed project is to continue the roadway connection between Church Road and Pittman Road, the next link in the east-west corridor running from Palmer to Houston. The project will provide an alternate route to the Parks Highway, improve overall traffic circulation in the area, and provide better facilities for pedestrians.

Proposed Action

The proposed project would include:

- Extend Seldon Road with a 2.25-mile two-lane arterial facility
- Construct frontage roads to tie into the existing road network
- Reconstruct portions of adjacent roads to meet current standards and create new intersections
- Construct a new 10-foot-wide separated pedestrian pathway on the south side of the new facility
- Construct a new trailhead parking area at the new Pittman Road intersection
- Relocate utilities
- Construct new drainage facilities
- Clear and grub vegetation
- Install new or replace roadside hardware, including signing and striping

Existing Site Conditions or Facilities

The project proposes to complete the Seldon Road extension by constructing a new two-lane arterial facility and frontage roads to tie into the existing road network. Within the project corridor, a majority of the area consists of undeveloped and wooded lots adjacent to a mix of residential, industrial, and institutional land uses. The topography is generally flat, with multiple wetlands and lakes in the vicinity, including Merri Belle, Beverly, Kalmbach, Fuller, and Cloudy Lakes. Though the project proposes to construct along new alignment, an existing road network is present

adjacent the project corridor, consisting primarily of local roads and minor and major collectors. Additional discussion of site conditions can also be found in the attached preliminary environmental research.

Preliminary Environmental Research

The proposed project is not expected to involve any significant environmental impacts and a Categorical Exclusion will be prepared. DOT&PF conducted preliminary research using the most current available data to identify environmental resources within the proposed project vicinity (attached). To ensure that all factors are considered in developing the proposed project, please provide your written comments, recommendations, and the additional requested information to our office no later than May 15, 2022.

If you have any questions on the environmental effects, please contact Drew von Lindern, Environmental Impact Analyst, at (907) 269-0551, or via email to drew.vonlindern@alaska.gov. Questions concerning the engineering aspects of the proposed project can be directed to Chris Bentz, P.E., Project Manager, at (907) 269-0652.

Sincerely,

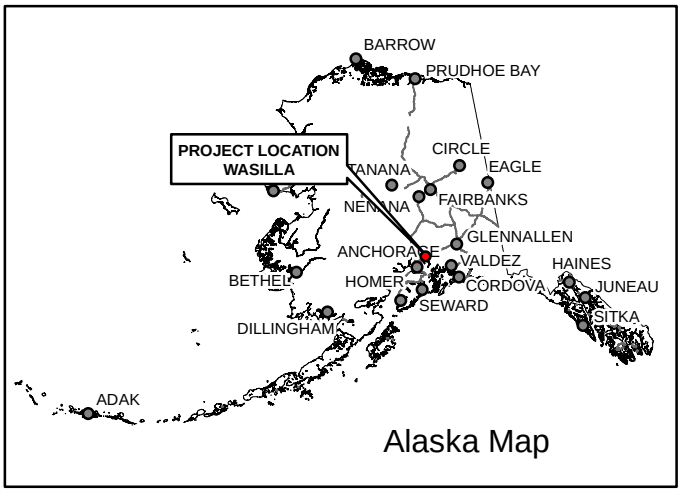
Brian Elliott

Regional Environmental Manager

Attachments:

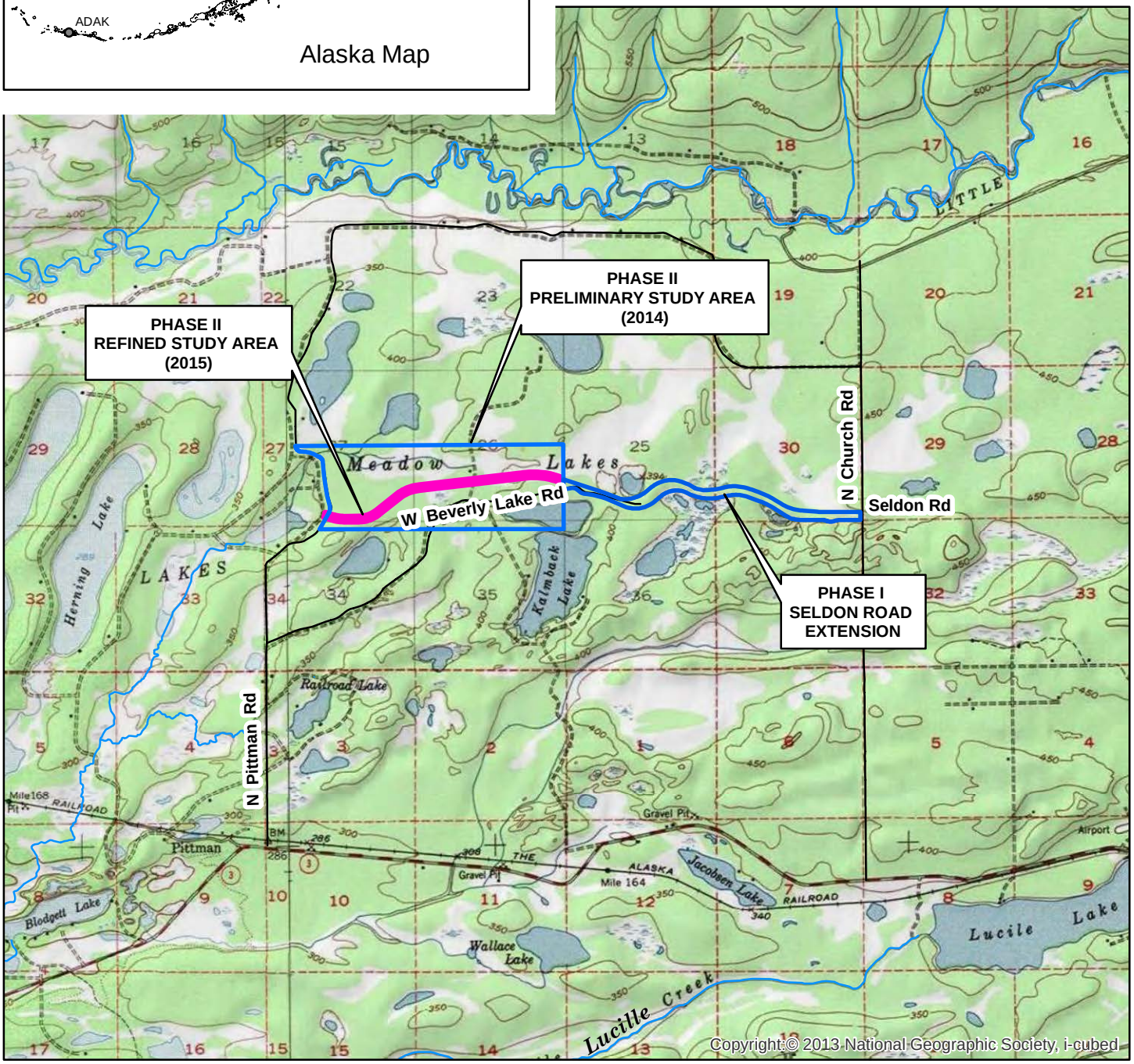
Figure 1: Location and Vicinity Map
Figure 2: Project Overview
Appendix A: Preliminary Environmental Research

cc: Drew von Lindern, Environmental Impact Analyst, PD&E
Chris Bentz, P.E., Project Manager, PD&E



Alaska Map

N

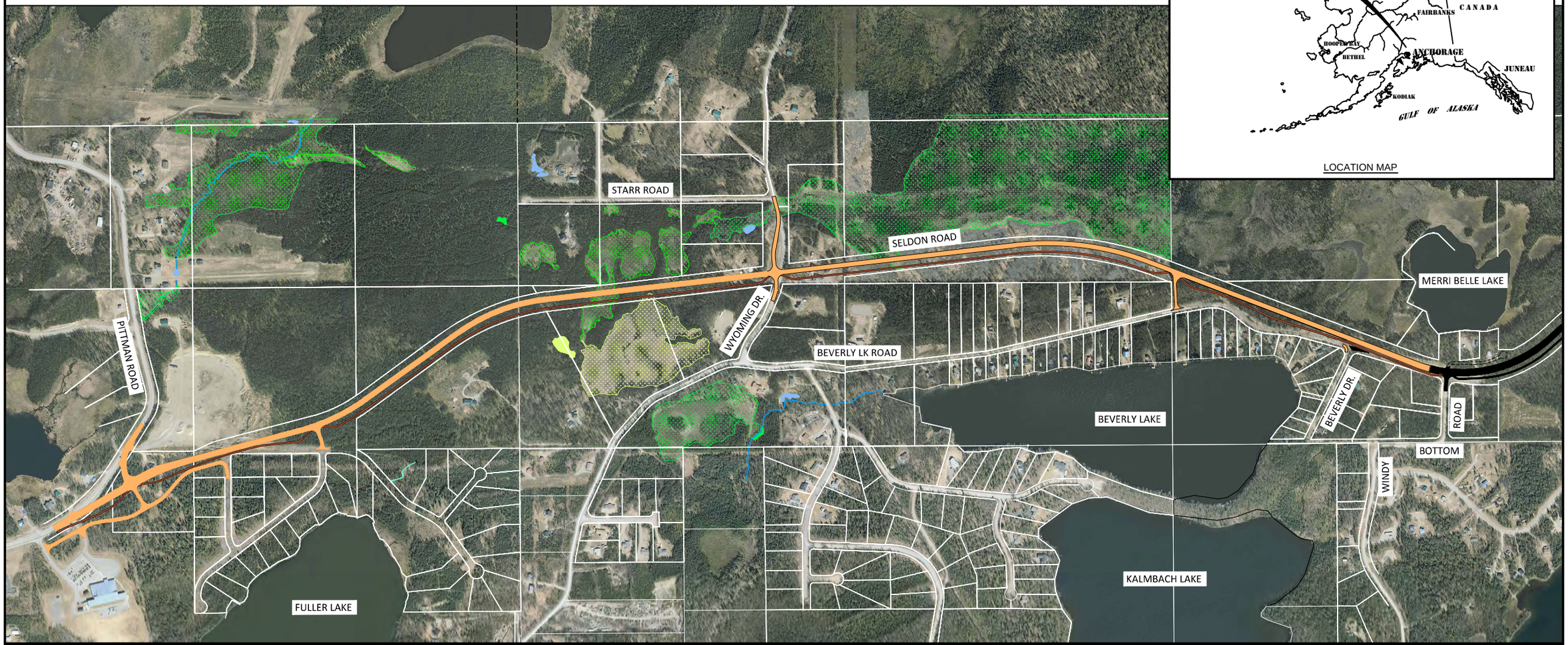


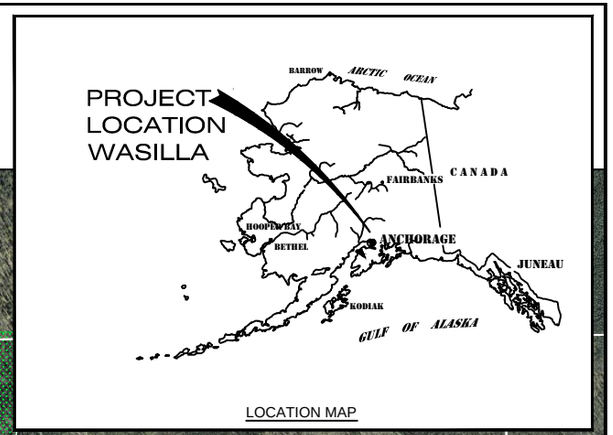
1 0.5 0 1 Miles

SELDON ROAD EXTENSION PHASE II: WINDY BOTTOM/ BEVERLY LAKES ROAD TO PITTMAN ROAD
PROJECT NO. CFHWY00562
LOCATION AND VICINITY MAP
WASILLA, AK

STATE OF ALASKA
DEPT OF TRANSPORTATION AND PUBLIC FACILITIES PRELIMINARY DESIGN AND ENVIRONMENTAL GROUP

FIGURE
1





LOCATION MAP

SELDON RD PHASE II EXTENSION

PHASE II PEDESTRIAN PATHWAY

PHASE I ALREADY CONSTRUCTED

STATE OF ALASKA
DEPT OF TRANSPORTATION
AND PUBLIC FACILITIES
PRELIMINARY DESIGN AND
ENVIRONMENTAL GROUP

SELDON ROAD EXTENSION PHASE II: WINDY BOTTOM/ BEVERLY LAKES ROAD TO PITTMAN ROAD
PROJECT NO. CFHWY00562
PROJECT OVERVIEW
WASILLA, AK

FIGURE 2

Preliminary Environmental Research

Air Quality

Review of the Alaska Department of Environmental Conservation (ADEC) Air Non-point Mobile Source website indicates the proposed project area is not located within any air quality non-attainment or maintenance areas. As the project proposes to construct a road on new alignment, impacts to air quality may occur due to vehicle emissions that weren't previously present; however these impacts are anticipated to be minor. Air quality may also experience temporary degradation due to construction activities, such as increased particulate matter and heavy equipment emissions, but these would cease once construction is done.

Fish and Wildlife

Per review of the ADF&G Anadromous Waters Catalog (AWC) Mapper as well as the Matanuska-Susitna Borough (MSB) environmental document, fish trapping results, and wetland delineation, no catalogued anadromous waters or resident fish streams are located within or adjacent the proposed project corridor. As such, no impacts to fish species or habitat are expected as a result of the proposed project. Many species of wildlife can be found in the project vicinity; however, due to the existing levels of development within the project area, it is unlikely that any wildlife species will experience substantial impacts from the proposed project. Though vegetation clearing would eliminate some habitat, there is an abundance of similar habitat in the area so impacts would likely be negligible. No adverse impacts to wildlife are anticipated as a result of the proposed project. Discussion of threatened and endangered species can be found in the *Threatened and Endangered Species and Critical Habitat Areas* section below.

Floodplain and Regulatory Floodway

Per review of the FEMA Flood Insurance Rate Mapper (FIRM), no mapped floodplains or Special Flood Hazard Areas are located with or adjacent to the proposed project area. As such, no impacts to floodplains or alterations of base flood elevations are expected as a result of the proposed project.

Hazardous Waste

Review of the ADEC Contaminated Sites Mapper indicated no active contaminated sites or sites under "Clean-up Complete – Institutional Controls" status are located within 1500 feet of the proposed project corridor. One site with "Cleanup Complete" status is located near the western terminus of the proposed project: Meadow Lakes Fire Station #71 (Hazard ID 23446). Due to the lack of contaminated sites within the proposed project vicinity, no encroachment into or impacts from contaminated sites are not anticipated.

Historic Properties, Archeological and Cultural Resources

Review of the Alaska Historic Resources Survey database the MSB cultural resources report indicated that several potentially eligible resources are located in the vicinity of the proposed project. No adverse effects to cultural or historic resources are expected as a result of the proposed project. Project development will proceed in accordance with Section 106 of the National Historic Preservation Act.

Invasive Species

The University of Alaska Anchorage Alaska Exotic Plants Information Clearinghouse (AKEPIC) Invasive Plants Mapper shows several invasive plant species are located in the vicinity of the proposed project. DOT&PF will comply with Executive Order 13112 by ensuring that ground disturbing activities are minimized and disturbed areas are re-vegetated with native soil and seed to minimize potential importation of new weed propagules from outside Alaska.

Land Use and Transportation Plans

Land uses adjacent to the project corridor consist of residential, industrial, institutional, and undeveloped areas. The proposed project is included within Alaska's 2020-2023 Statewide Transportation Improvement Program (STIP). The following plans are applicable to the proposed project:

- MSB Comprehensive Development Plan, 2005 Update
- 2035 MSB Long-Range Transportation Plan (LRTP), December 2017
- Meadow Lakes Comprehensive Plan, October 2005
- Alaska Statewide LRTP Let's Keep Moving 2036 Policy Plan, December 2016
- Corridor Access Management Plan; Seldon Rd Extension, Church Rd to Pittman Rd, December 2017

Material and Disposal Sites

The Contractor would supply material for the pathway, subgrade structure and surfacing. Similarly, the Contractor would obtain disposal sites. 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. Per DOT&PF specifications, the Contractor will also be responsible for implementing a Storm Water Pollution Prevention Plan (SWPPP). Material from a borrow site that has not received the appropriate permits and clearances will not be accepted for project construction.

Migratory Birds and Eagles' Nest

Land within and adjacent to the proposed project supports a variety of migratory bird species. As part of construction some of this land and vegetation will be permanently lost to accommodate the proposed improvements. To minimize and/or prevent impacts to migratory birds, restrictions on vegetation clearing during the nesting season would be implemented in accordance with recommendations from the U.S. Fish and Wildlife Service (USFWS). Preferred habitat for Bald and Golden Eagles, as described in the USFWS *National Bald Eagle Management Guidelines* (2007), potentially exists within the study corridor. DOT&PF may conduct a field survey prior to construction to identify any eagle nests within the proposed project area.

Navigable Waters

Review of the U.S. Army Corps of Engineers (USACE) Alaska District and U.S. Coast Guard Seventeenth District List of Navigable Waters indicates that no navigable waters are located within the proposed project area.

Noise

As the project proposed to construct the Seldon Road extension along new alignment, it meets the definition of a Type 1 project, and a noise analysis will be required to determine project-related

impacts. Land use adjacent the proposed project corridor is a mix of rural residential (Category B) and undeveloped land (Category G), with a school at the western end of the project (Category C). Noise abatement measures will be considered during development of the traffic noise analysis for any identified impacted receptors.

Permits and Authorizations

Permits anticipated for construction include the following:

- USACE, Clean Water Act (CWA), Section 404 Permit to authorize the discharge of fill material into wetlands and waters of the U.S.
- ADEC, Alaska Pollution Discharge Elimination System, Construction General Permit for Discharges from Large and Small Construction Activities

Right-of-Way

The proposed project would likely require one partial parcel to complete the road extension. All other necessary right-of-way has already been purchased by the MSB.

Social and Economic

The proposed project corridor primarily consists of undeveloped areas with adjacent residential, institutional, and industrial land uses. Beneficial social and economic impacts are anticipated to include increased connectivity, safety, and mobility of local area for motorized and pedestrian users. Increased connectivity to currently undeveloped properties along the proposed corridor has the potential to provide land development opportunities. No adverse social or economic impacts are expected as a result of the proposed project.

State Parks, National Parks, National Forests, Wild and Scenic Rivers

Reviews of the National Park Service (NPS); National Forest Service; National Wild and Scenic River System; Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation (ADNR-DPOR); and MSB Parks websites indicate no Section 4(f)-protected properties are located within or adjacent the proposed project area. Review of Land and Water Conservation Fund (LWCF) grants within Alaska showed no properties received LWCF funds and therefore no Section 6(f)-protected properties are located within the proposed project area.

State Refuges, National Wildlife Refuges, and Sanctuaries

Reviews of the USFWS National Wildlife Refuge Find a Refuge mapper and ADFG listing of State of Alaska Refuges, Critical Habitat Areas, and Sanctuaries indicates no Federal or State Refuges, Critical Habitat Areas, or Sanctuaries are within or near the project area.

Threatened and Endangered Species and Critical Habitat Areas

In November 2012, USFWS issued a statement outlining a modification to their procedure for responding to Section 7 consultation requests for proposed activities occurring in the Anchorage and/or Matanuska-Susitna area (AMS). Currently, there are no federally listed or proposed species or designated or proposed critical habitat under USFWS jurisdiction that occur in the AMS area. Because no listed species under USFWS jurisdiction occur in the AMS area, it is reasonable to conclude that proposed projects confined to AMS will have no effect on T&E species or critical habitat.

Water Quality

There are five surface waterbodies located adjacent to the project area with any appreciable chance to receive storm water from the proposed project: Merri Belle Lake, Beverly Lake, Fuller Lake, Cloudy Lake, and an unnamed perennial stream that flows from the Merri Bell Lake area into Fuller Lake. Potential wetland areas are also adjacent to the proposed corridor that may receive storm water from the project. To minimize and/or prevent storm water discharge, construction activities will be done in accordance with and ADEC approved SWPPP and implementation of BMP's. Drainage infrastructure and needs will be evaluated during design; however, the existing drainage patterns are not anticipated to appreciably change as a result of the proposed project.

Wetlands and Other Waters of the U.S.

Reviews of the MSB Wetland and U.S. Fish and Wildlife Service National Wetlands Inventory mappers indicate several emergent, forested/shrub, and riverine wetlands are present within and adjacent the proposed project area. A wetland delineation for the proposed project corridor was completed in July 2015; however, a follow-up site visit during development of the environmental document will be required to verify and/or amend the 2015 findings and more fully describe the presence and extent of area wetlands. To complete the proposed improvements, the project would require fill placement within jurisdictional wetlands and a USACE Section 404 permit would be obtained prior to construction.

Information Sources

ADEC Division of Air Quality. *Air Non Point Mobile Sources*. Web. 7 Apr. 2022. < http://dec.alaska.gov/air/anpms/communities/ >.

ADEC Division of Spill Prevention and Response. *Alaska Contaminated Sites Mapper*. Web. 7 Apr. 2022. <http://www.arcgis.com/home/webmap/viewer.html?webmap=315240bfbaf84aa0b8272ad1cef3cad3>.

ADFG Division of Habitat. *Atlas and Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes*. Web. 7 Apr. 2022. <www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.home>

ADNR-DPOR. *State Park Units*. Web. 7 Apr. 2022. <dnr.alaska.gov/parks/aspunits/index.htm>.

ADNR-DPOR Office of History and Archaeology. *Alaska Heritage Resources Survey Mapper.* Web. 7 Apr. 2022. <http://dnr.alaska.gov/parks/oha/ahrs/ahrs.htm>.

Alaska Natural Heritage Program, University of Alaska, Anchorage. *Alaska Exotic Plant Information Clearinghouse (AKEPIC) database*. Web. 7 Apr. 2022. <aknhp.uaa.alaska.edu/apps/akepic/>.

FEMA. *Flood Map Service Center*. Web. 7 Apr. 2022. < http://msc.fema.gov/portal>.

MSB Department of Parks. *Park Directory*. Web. 7 Apr. 2022. <https://matsugov.us/parks>.

MSB. *Wetlands Viewer*. Web. 7 Apr. 2022. <https://msb.maps.arcgis.com/apps/webappviewer/index.html?id=15658472427f459ab6d73b1d3ca5ab77>.

NPS, 2018. *Find A Park*. Web. 7 Apr. 2022. <www.nps.gov/state/ak/index.htm>.

USACE Alaska District, 19 Oct. 1995. *Navigable waters list*. Web. 7 Apr. 2022. <www.poa.usace.army.mil/Portals/34/docs/regulatory/NavWat.pdf.>.

USFWS Alaska Region, Aug. 2017. *Alaska National Wildlife Refuges.* Web. 7 Apr. 2022. <www.fws.gov/alaska/nwr/map.htm>.

USFWS Ecological Services, May 2007. *National Bald Eagle Management Guidelines*. 7 Apr. 2022.<www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf>.

USFWS Ecological Services. *National Wetlands Inventory Mapper*. Web. 7 Apr. 2022. <https://www.fws.gov/wetlands/data/Mapper.html>.

From:	Alimi, Adeyemi S (DEC)
To:	Vonlindern, Drew A (DOT)
Cc:	Heil, Cynthia L (DEC)
Subject:	RE: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road
Date:	Wednesday, April 20, 2022 10:36:41 AM

Dear Drew von Lindern,

The Alaska Department of Transportation and Public Facilities (DOT&PF) has requested Alaska Department of Environmental Conservation (ADEC) to comment on the proposed completion of the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska (Project # 0001723/CFHWY00562).

1. Further analysis needed to evaluate sensitive resources potentially impacted by the proposed project.
2. Regulatory permits and/or clearances required from your agency.
3. Any concerns or issues your agency or organization might have with the proposed project.

Thank you for the opportunity to comment on the proposed project. The following comments are limited to Air Quality (AQ). Other divisions within ADEC will need to respond within their areas of expertise.

1. Further analysis needed to evaluate sensitive resources potentially impacted by the proposed project.

   ADEC agrees with DOT&PF that the proposed project is not located in a non-attainment or maintenance area for air quality control under the Clean Air Act. Therefore, it does not require a conformity analysis under the Transportation Conformity regulations.

2. Regulatory permits and/or clearances required from your agency

   If open burning is chosen as the preferred method of disposal of organic debris, DOT&PF or their contractor must use “reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated,” as well as get any applicable permits. A complete description of the open burn information, including policies, can be found at: http://dec.alaska.gov/air/air-permit/open-burn-info/

3. Any concerns or issues your agency or organization might have with the proposed project.

   Any construction activities should follow all reasonable precautions in accordance with 18 AAC 50.045(d) to prevent particulate matter from being emitted into the ambient air.

Please, include me in any future requests for agency comments on DOT&PF projects.

If you have any questions, please do not hesitate to contact me.

Sincerely,

-

Adeyemi Alimi (Yemi)
State of Alaska, Department of Environmental Conservation
Air Quality Division
Non-Point Mobile Sources Section
adeyemi.alimi@alaska.gov
907-269-6953 (Office)

From: Vonlindern, Drew A (DOT) <drew.vonlindern@alaska.gov>
Sent: Wednesday, April 13, 2022 4:25 PM
To: Shannon.R.Morgan@usace.army.mil; regpagemaster@usace.army.mil; sturges.susan@epa.gov; R10-NEPA@epa.gov; Chu.Rebecca@epa.gov; fordham.tami <fordham.tami@epa.gov>; ak_fisheries@fws.gov; stuart.hartford@bia.gov; mark.kahklen@bia.gov; transportation.alaska@bia.gov; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; DEC-Webmaster (DEC sponsored) <DEC.Webmaster@alaska.gov>; CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; Chambon, Katrina M (DEC) <katrina.chambon@alaska.gov>; Palmer, Charley (DEC) <charley.palmer@alaska.gov>; Buck, Teri A (DEC) <teri.buck@alaska.gov>; Myers, Sarah E E (DFG) <sarah.myers@alaska.gov>; Williams, Kim (DFG) <kim.williams@alaska.gov>; Peltier, Tim C (DFG) <tim.peltier@alaska.gov>; Rinaldi, Todd A (DFG) <todd.rinaldi@alaska.gov>; Brooks, Henry C (DNR) <henry.brooks@alaska.gov>; Kim Sollien <kim.sollien@matsugov.us>; ted.eischeid@matsugov.us; ccb@matsugov.us; tripleb@mtaonline.net; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; cvadmin@chickaloon-nsn.gov; bewinnestaffer@chickaloon-nsn.gov; jewinnestaffer@chickaloon-nsn.gov; Alwade@chickaloon-nsn.gov; jbrune@ciri.com; kfoster@eklutnainc.com; info@eklutnainc.com; rweldin@eklutnainc.com; BDoss@eklutnainc.com; ksmith@eklutnainc.com; naspiras@eklutnainc.com; ldelgado@eklutnainc.com; bhattenburg@eklutnainc.com; knikcorp@gci.net; cvadmin@chickaloon.org; roads@chickaloon.org; rporter@kniktribe.org; ktoothaker@kniktribe.org; nve@eklutna-nsn.gov; Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>
Cc: Bentz, Chris L (DOT) <chris.bentz@alaska.gov>; Elliott, Brian A (DOT) <brian.elliott@alaska.gov>
Subject: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road

Dear Agency Staff:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is soliciting comments and information on a proposed project that would complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska. The project's scoping materials are attached to this email.

After reviewing the attached scoping materials, please reply with the following information:

1. Further analysis needed to evaluate sensitive resources potential impacted by the proposed project.
2. Regulatory permits and/or clearances required from your agency.
3. Any concerns or issues your agency or organization might have with the proposed project.

We are requesting that comments be delivered by May 15, 2022. If you feel that someone else in your organization should receive this notification, please forward this email to them so they may comment.

Thank you,

Drew von Lindern
Environmental Team Leader
Alaska Dept. of Transportation & Public Facilities
Preliminary Design and Environmental Section
P.O. Box 196900, Anchorage, Alaska 99519-6900
Phone (907) 269-0551 | Fax (907) 243-6927
Email: drew.vonlindern@alaska.gov

From:	CS.Scoping (DEC sponsored)
To:	Vonlindern, Drew A (DOT); Shannon.R.Morgan@usace.army.mil; regpagemaster@usace.army.mil; sturges.susan@epa.gov; R10-NEPA@epa.gov; Chu.Rebecca@epa.gov; fordham.tami; ak_fisheries@fws.gov; stuart.hartford@bia.gov; mark.kahklen@bia.gov; transportation.alaska@bia.gov; Heil, Cynthia L (DEC); DEC-Webmaster (DEC sponsored); CS.Scoping (DEC sponsored); Rypkema, James (DEC); Chambon, Katrina M (DEC); Palmer, Charley (DEC); Buck, Teri A (DEC); Myers, Sarah E E (DFG); Williams, Kim (DFG); Peltier, Tim C (DFG); Rinaldi, Todd A (DFG); Brooks, Henry C (DNR); Kim Sollien; ted.eischeid@matsugov.us; ccb@matsugov.us; tripleb@mtaonline.net; Bittner, Judith E (DNR); cvadmin@chickaloon-nsn.gov; bewinnestaffer@chickaloon-nsn.gov; jewinnestaffer@chickaloon-nsn.gov; Alwade@chickaloon-nsn.gov; jbrune@ciri.com; kfoster@eklutnainc.com; info@eklutnainc.com; rweldin@eklutnainc.com; BDoss@eklutnainc.com; ksmith@eklutnainc.com; naspiras@eklutnainc.com; ldelgado@eklutnainc.com; bhattenburg@eklutnainc.com; knikcorp@gci.net; cvadmin@chickaloon.org; roads@chickaloon.org; rporter@kniktribe.org; ktoothaker@kniktribe.org; nve@eklutna-nsn.gov; Buss, Stephanie D (DEC)
Cc:	Bentz, Chris L (DOT); Elliott, Brian A (DOT)
Subject:	RE: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road
Date:	Thursday, April 21, 2022 8:50:27 AM

Hello,

Based on the information provided, the Alaska Department of Environmental Conservation (DEC), Contaminated Sites Program (CSP) has no comments related to this information request. If the scope of the project changes, update your research and contact CSP as needed.

CSP provides resources for researching contaminated sites and groundwater plumes at http://dec.alaska.gov/spar/csp/ through the Search Map and Search Database buttons. Site locations depicted by triangle on the CSP map may not denote the exact location of contaminated soil and groundwater. Contamination may be present at any site, including those with an active, cleanup complete, or informational status. If you have questions about a specific site or contaminated groundwater plume, contact the staff person directly, or DEC-ICunit@alaska.gov when no staff person is listed. Additional documents can be requested.

Spills or releases to soil and water are also managed by the DEC Prevention Preparedness and Response Program (PPRP) and are not captured in the CSP database or map. Information about spills can be found in the PPRP SPILLS database at https://dec.alaska.gov/Applications/SPAR/PublicMVC/PERP/SpillSearch. For more information about spill responses contact the appropriate regional response team office https://dec.alaska.gov/spar/ppr/spill-information/reporting/.
If during the project, a previously unknown area of contamination is discovered or a spill occurs, **Alaska state law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation**. For reporting information, please visit: https://dec.alaska.gov/spar/ppr/spill-information/reporting/.

Thank you,
Megan MacPherson
Intern II
SPAR - CS

From: Vonlindern, Drew A (DOT) <drew.vonlindern@alaska.gov>
Sent: Wednesday, April 13, 2022 4:25 PM

To: Shannon.R.Morgan@usace.army.mil; regpagemaster@usace.army.mil; sturges.susan@epa.gov; R10-NEPA@epa.gov; Chu.Rebecca@epa.gov; fordham.tami <fordham.tami@epa.gov>; ak_fisheries@fws.gov; stuart.hartford@bia.gov; mark.kahklen@bia.gov; transportation.alaska@bia.gov; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; DEC-Webmaster (DEC sponsored) <DEC.Webmaster@alaska.gov>; CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; Chambon, Katrina M (DEC) <katrina.chambon@alaska.gov>; Palmer, Charley (DEC) <charley.palmer@alaska.gov>; Buck, Teri A (DEC) <teri.buck@alaska.gov>; Myers, Sarah E E (DFG) <sarah.myers@alaska.gov>; Williams, Kim (DFG) <kim.williams@alaska.gov>; Peltier, Tim C (DFG) <tim.peltier@alaska.gov>; Rinaldi, Todd A (DFG) <todd.rinaldi@alaska.gov>; Brooks, Henry C (DNR) <henry.brooks@alaska.gov>; Kim Sollien <kim.sollien@matsugov.us>; ted.eischeid@matsugov.us; ccb@matsugov.us; tripleb@mtaonline.net; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; cvadmin@chickaloon-nsn.gov; bewinnestaffer@chickaloon-nsn.gov; jewinnestaffer@chickaloon-nsn.gov; Alwade@chickaloon-nsn.gov; jbrune@ciri.com; kfoster@eklutnainc.com; info@eklutnainc.com; rweldin@eklutnainc.com; BDoss@eklutnainc.com; ksmith@eklutnainc.com; naspiras@eklutnainc.com; ldelgado@eklutnainc.com; bhattenburg@eklutnainc.com; knikcorp@gci.net; cvadmin@chickaloon.org; roads@chickaloon.org; rporter@kniktribe.org; ktoothaker@kniktribe.org; nve@eklutna-nsn.gov; Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>
Cc: Bentz, Chris L (DOT) <chris.bentz@alaska.gov>; Elliott, Brian A (DOT) <brian.elliott@alaska.gov>
Subject: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road

Dear Agency Staff:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is soliciting comments and information on a proposed project that would complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska. The project's scoping materials are attached to this email.

After reviewing the attached scoping materials, please reply with the following information:

1. Further analysis needed to evaluate sensitive resources potential impacted by the proposed project.
2. Regulatory permits and/or clearances required from your agency.
3. Any concerns or issues your agency or organization might have with the proposed project.

We are requesting that comments be delivered by May 15, 2022. If you feel that someone else in your organization should receive this notification, please forward this email to them so they may comment.

Thank you,

Drew von Lindern
Environmental Team Leader
Alaska Dept. of Transportation & Public Facilities
Preliminary Design and Environmental Section
P.O. Box 196900, Anchorage, Alaska 99519-6900

Phone (907) 269-0551 | Fax (907) 243-6927
Email: drew.vonlindern@alaska.gov

From: Moenaert, Crystal L (DFG)
To: Vonlindern, Drew A (DOT)
Subject: CFHWY00562- Seldon Road Extension Phase II - Agency Comments
Date: Thursday, May 5, 2022 2:40:32 PM

Good Afternoon Mr. Vonlindern,

After review of the scoping materials for the projected path of Seldon Road Extension Phase II, it is determined that the project does not cross any anadromous streams. After reviewing data from the freshwater fish inventory, no resident fish streams will be affected by the scope of work. No water withdrawals were requested, or culverts in fish bearing areas. Should fish be discovered (resident or anadromous species) please notify the ADF&G Habitat Section as soon as possible. Based on this information, the ADF&G Habitat Section does not require a permit for the current scope of work. Should the scope of work change a fish habitat permit may be required.

Thank you for the opportunity to comment.

Sincerely,

Crystal Moenaert
Habitat Biologist II
ADF&G Habitat Section
1801 S Margaret Drive, Suite 6
Palmer AK 99645
Ph: 907-861-3204
ADF&G Habitat Section Permits Link

From:	Palmer, Charley (DEC)
To:	Vonlindern, Drew A (DOT)
Cc:	DEC Agency Reviews; Hill, Amy L (DEC); Bare, Charity M (DEC); CS.Scoping (DEC sponsored)
Subject:	FW: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road
Date:	Thursday, May 12, 2022 2:56:20 PM
Attachments:	CFHWY00562_Agency Scoping Materials.pdf DEC_PWS_Map.JPG dec-eh-dw-recommendations-for-general-project-activities-near-a-pws-source.pdf

Drew,

Thank you for the opportunity to comment with respect to public water system (PWS) sources. Given the location(s) provided, this project is near an active registered PWS source (see attached "DEC_PWS_Map.jpg" and summary table below). For this reason, we ask that the applicant please adhere to the attached **Recommendations for General Project Activities near a PWS source**, where applicable.

To access our interactive web map, which displays PWS source locations and Drinking Water Protection Areas, please visit: https://www.arcgis.com/home/item.html?id=13ed2116e4094f9994775af9a62a1e85.

Summary table

- **Public Water System ID (PWSID)**:
  AK2224078
  Water System Name:
  UNIFIED ALASKAN UTILITIES SHERWOOD ESTAT
  Water System Classification:
  Community Water System

  State Assigned Source ID:
  WL003
  Source Name:
  WL WELL #3
  Source Water Type:
  Groundwater
  Source Facility Type:
  Well

  Delineation Completed By: Charley Palmer
  Last Edited By: DWP
  Date Last Edited: 7/7/2014
  Delineation Comments: ;

  Drinking Water Watch has current sampling results and contact information.

  Public Water System ID (PWSID):

AK2225967
Water System Name:
MSBSD MEADOW LAKES ELEMENTARY
Water System Classification:
Non-Transient Non-Community Water System

State Assigned Source ID:
WL001
Source Name:
WELL
Source Water Type:
Groundwater
Source Facility Type:
Well

Delineation Completed By: Chris
Last Edited By: DWP
Date Last Edited: 7/7/2014
Delineation Comments: Undetermined;

Drinking Water Watch has current sampling results and contact information.

Alaska DEC Drinking Water Program home page.

Drinking Water Regulations: 18 AAC 80.

Regards,
--
Charley Palmer, *Hydrologist 3*
Alaska DEC
Division of Environmental Health
Drinking Water Program
Drinking Water Source Protection

From: CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>
Sent: Thursday, April 21, 2022 8:50 AM
To: Vonlindern, Drew A (DOT) <drew.vonlindern@alaska.gov>; Shannon.R.Morgan@usace.army.mil; regpagemaster@usace.army.mil; sturges.susan@epa.gov; R10-NEPA@epa.gov; Chu.Rebecca@epa.gov; fordham.tami <fordham.tami@epa.gov>; ak_fisheries@fws.gov; stuart.hartford@bia.gov; mark.kahklen@bia.gov; transportation.alaska@bia.gov; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; DEC-Webmaster (DEC sponsored) <DEC.Webmaster@alaska.gov>; CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; Chambon, Katrina M (DEC) <katrina.chambon@alaska.gov>; Palmer, Charley (DEC) <charley.palmer@alaska.gov>; Buck, Teri A (DEC) <teri.buck@alaska.gov>; Myers,

Sarah E E (DFG) <sarah.myers@alaska.gov>; Williams, Kim (DFG) <kim.williams@alaska.gov>; Peltier, Tim C (DFG) <tim.peltier@alaska.gov>; Rinaldi, Todd A (DFG) <todd.rinaldi@alaska.gov>; Brooks, Henry C (DNR) <henry.brooks@alaska.gov>; Kim Sollien <kim.sollien@matsugov.us>; ted.eischeid@matsugov.us; ccb@matsugov.us; tripleb@mtaonline.net; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; cvadmin@chickaloon-nsn.gov; bewinnestaffer@chickaloon-nsn.gov; jewinnestaffer@chickaloon-nsn.gov; Alwade@chickaloon-nsn.gov; jbrune@ciri.com; kfoster@eklutnainc.com; info@eklutnainc.com; rweldin@eklutnainc.com; BDoss@eklutnainc.com; ksmith@eklutnainc.com; naspiras@eklutnainc.com; ldelgado@eklutnainc.com; bhattenburg@eklutnainc.com; knikcorp@gci.net; cvadmin@chickaloon.org; roads@chickaloon.org; rporter@kniktribe.org; ktoothaker@kniktribe.org; nve@eklutna-nsn.gov; Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>
Cc: Bentz, Chris L (DOT) <chris.bentz@alaska.gov>; Elliott, Brian A (DOT) <brian.elliott@alaska.gov>
Subject: RE: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road

Hello,

Based on the information provided, the Alaska Department of Environmental Conservation (DEC), Contaminated Sites Program (CSP) has no comments related to this information request. If the scope of the project changes, update your research and contact CSP as needed.

CSP provides resources for researching contaminated sites and groundwater plumes at http://dec.alaska.gov/spar/csp/ through the Search Map and Search Database buttons. Site locations depicted by triangle on the CSP map may not denote the exact location of contaminated soil and groundwater. Contamination may be present at any site, including those with an active, cleanup complete, or informational status. If you have questions about a specific site or contaminated groundwater plume, contact the staff person directly, or DEC-ICunit@alaska.gov when no staff person is listed. Additional documents can be requested.

Spills or releases to soil and water are also managed by the DEC Prevention Preparedness and Response Program (PPRP) and are not captured in the CSP database or map. Information about spills can be found in the PPRP SPILLS database at https://dec.alaska.gov/Applications/SPAR/PublicMVC/PERP/SpillSearch. For more information about spill responses contact the appropriate regional response team office https://dec.alaska.gov/spar/ppr/spill-information/reporting/.
If during the project, a previously unknown area of contamination is discovered or a spill occurs, **Alaska state law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation**. For reporting information, please visit: https://dec.alaska.gov/spar/ppr/spill-information/reporting/.

Thank you,
Megan MacPherson
Intern II
SPAR - CS

From: Vonlindern, Drew A (DOT) <drew.vonlindern@alaska.gov>
Sent: Wednesday, April 13, 2022 4:25 PM
To: Shannon.R.Morgan@usace.army.mil; regpagemaster@usace.army.mil; sturges.susan@epa.gov; R10-NEPA@epa.gov; Chu.Rebecca@epa.gov; fordham.tami <fordham.tami@epa.gov>; ak_fisheries@fws.gov; stuart.hartford@bia.gov; mark.kahklen@bia.gov; transportation.alaska@bia.gov; Heil, Cynthia L (DEC) <cindy.heil@alaska.gov>; DEC-Webmaster (DEC sponsored) <DEC.Webmaster@alaska.gov>; CS.Scoping (DEC sponsored) <CS.Scoping@alaska.gov>; Rypkema, James (DEC) <james.rypkema@alaska.gov>; Chambon, Katrina M (DEC) <katrina.chambon@alaska.gov>; Palmer, Charley (DEC) <charley.palmer@alaska.gov>; Buck, Teri A (DEC) <teri.buck@alaska.gov>; Myers, Sarah E E (DFG) <sarah.myers@alaska.gov>; Williams, Kim (DFG) <kim.williams@alaska.gov>; Peltier, Tim C (DFG) <tim.peltier@alaska.gov>; Rinaldi, Todd A (DFG) <todd.rinaldi@alaska.gov>; Brooks, Henry C (DNR) <henry.brooks@alaska.gov>; Kim Sollien <kim.sollien@matsugov.us>; ted.eischeid@matsugov.us; ccb@matsugov.us; tripleb@mtaonline.net; Bittner, Judith E (DNR) <judy.bittner@alaska.gov>; cvadmin@chickaloon-nsn.gov; bewinnestaffer@chickaloon-nsn.gov; jewinnestaffer@chickaloon-nsn.gov; Alwade@chickaloon-nsn.gov; jbrune@ciri.com; kfoster@eklutnainc.com; info@eklutnainc.com; rweldin@eklutnainc.com; BDoss@eklutnainc.com; ksmith@eklutnainc.com; naspiras@eklutnainc.com; ldelgado@eklutnainc.com; bhattenburg@eklutnainc.com; knikcorp@gci.net; cvadmin@chickaloon.org; roads@chickaloon.org; rporter@kniktribe.org; ktoothaker@kniktribe.org; nve@eklutna-nsn.gov; Buss, Stephanie D (DEC) <stephanie.buss@alaska.gov>
Cc: Bentz, Chris L (DOT) <chris.bentz@alaska.gov>; Elliott, Brian A (DOT) <brian.elliott@alaska.gov>
Subject: Request for Agency Comments on DOT&PF Proposed Project: CFHWY00562 - Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Road to Pittman Road

Dear Agency Staff:

The Alaska Department of Transportation and Public Facilities (DOT&PF) is soliciting comments and information on a proposed project that would complete the Seldon Road extension from the western Phase I terminus at the Beverly Lakes Road/Windy Bottom Road intersection to Pittman Road in Wasilla, Alaska. The project's scoping materials are attached to this email.

After reviewing the attached scoping materials, please reply with the following information:

1. Further analysis needed to evaluate sensitive resources potential impacted by the proposed project.
2. Regulatory permits and/or clearances required from your agency.
3. Any concerns or issues your agency or organization might have with the proposed project.

We are requesting that comments be delivered by May 15, 2022. If you feel that someone else in your organization should receive this notification, please forward this email to them so they may comment.

Thank you,

Drew von Lindern
Environmental Team Leader

Alaska Dept. of Transportation & Public Facilities
Preliminary Design and Environmental Section
P.O. Box 196900, Anchorage, Alaska 99519-6900
Phone (907) 269-0551 | Fax (907) 243-6927
Email: drew.vonlindern@alaska.gov

Legend

SDWIS Facilities - Active Public Water System Source Locations Layer

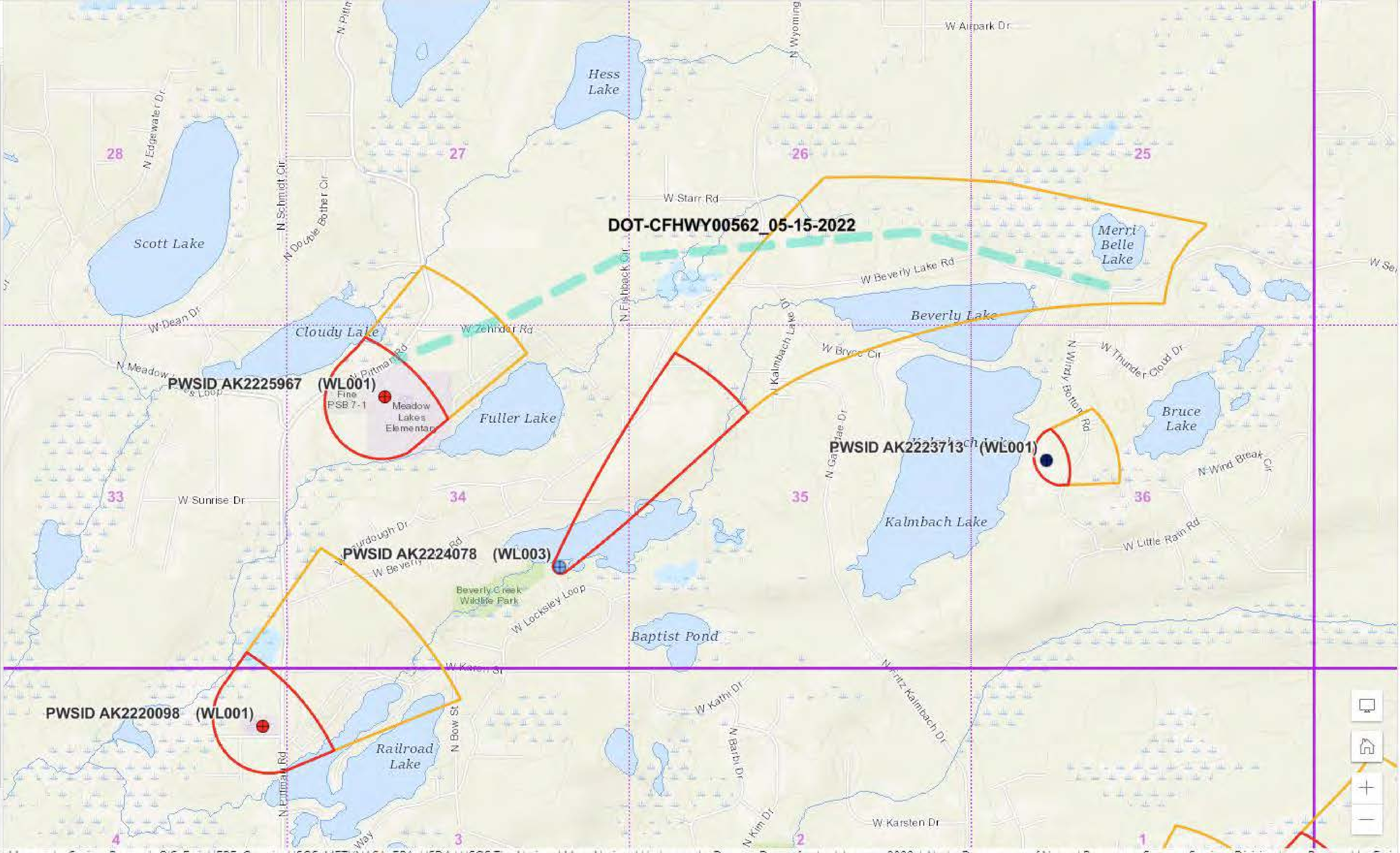
Federal Classification

- Community Water System (C)
- Non-Transient Non-Community Water System (NTNC)
- Non-Community Water System (NC)

Alaska DEC Drinking Water Protection Areas

- Zone A (GW-Several Months Time of Travel or SW 1000 ft buffer)
- Zone B (GW-2 Yr Time of Travel or SW-1 mile buffer)
- Zone C Surface Water (Watershed Boundary)
- Zone E Ground Water Surface Water Influence (1000 ft buffer)
- Zone F Ground Water Surface Water Influence (1 mile buffer)
- Zone G Ground Water Surface Water Influence (Watershed Boundary)

Provisional Protection Areas



Matanuska-Susitna Borough GIS, Esri, HERE, Garmin, USGS, METI/NASA, EPA, USDA | USGS The National Map: National Hydrography Dataset. Data refreshed January, 2022. | Alaska Department of Natural Resources, Support Services Division | ... Powered by Esri

THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Environmental Conservation

DIVISION OF ENVIRONMENTAL HEALTH
Drinking Water Program

555 Cordova Street
Anchorage, Alaska, 99501
Main: 907.269.7656
Toll free: 866.756.9656
Fax: 907.269.7650

April 14, 2022

Recommendations for general project activities associated with, or near, a public water system source

The following recommendations are intended to address potential impacts of projects, to be permitted or otherwise, in which planned activities are associated with, or near, a public water system (PWS) source (e.g., water well, spring, surface water intake, etc.). The key aspects of these recommendations are to identify nearby PWS sources, establish appropriate points of contact for the applicant and PWS, and implement best management practices.

Authority:

18 AAC 80.015. Well protection, source water protection, and well decommissioning.

a) A person may not
   (1) cause pollution or contamination to enter a public water system; or
   (2) create or maintain a condition that has a significant potential to cause or allow the pollution or contamination of a public water system.

Recommendations:

1) Identify on a legible map if any part of the project is within a Drinking Water Protection Area (DWPA) for a PWS source. DWPAs can be found using the interactive web map application, "**Alaska DEC Drinking Water Protection Areas**", located at https://dec.alaska.gov/das/GIS/apps.htm. Links to basic instructions for using this web map can be found on the map description page. If you experience problems accessing the map, please contact the Drinking Water Source Protection group at (907) 269-7549, or chris.miller@alaska.gov.

2) Where the project/permit intersects a DWPA, notify the associated PWS contact and provide the following:

   a) A brief description of the project location and associated activities; and

   b) Project contact information.

   PWS contact information can be obtained using the hyperlink from within the pop-up information for each PWS source in the web map, or directly by using the online application called "Drinking Water Watch", found at https://dec.alaska.gov/DWW/.

3) Within the identified DWPA, control stormwater and wastewater discharge such that it is directed away from the PWS.

Recommendations for general project activities associated with, or near, a public water system source (continued)

4) Within the identified DWPA, restrict project/permit activities that could significantly and/or permanently change the natural surface water or groundwater levels of the water sources immediately contributing to the PWS.

5) Within the identified DWPA, implement voluntary best management practices suited to your project where equipment storage, maintenance and operation, or other potential sources of contamination are located to minimize the potential for PWS source contamination.

6) Restrict or limit equipment storage, maintenance and operation, and other potential sources of contamination, within the following high-priority DWPA Zones:

   a) Zone A DWPA (several-months-time-of-travel for contributing groundwater, or 1,000-foot buffer of the contributing surface water body and its immediate tributaries);

   b) Zone E DWPA (1,000-foot buffer of the contributing surface water body and its immediate tributaries for a source using groundwater under the direct influence of surface water (GWUDISW)); or

   c) Provisional DWPA (1,000-foot radius around a PWS source).

7) All non-proprietary data related to the project/permit, including but not limited to, water quality results (field and lab), survey data, water levels, subsurface lithologic descriptions and depth, and groundwater flow direction and gradient information, should be made available to the permitting agency upon request.

   a) When associated with the development, construction, modification, or operation of a PWS, follow the requirements in DEC Drinking Water regulations 18 AAC 80, https://dec.alaska.gov/eh/dw/regulations/.

8) Keep a list of PWS contacts and agency spill reporting contacts readily available.

   a) Immediately notify contacts of any potential contamination event, such as spills or excess erosion.

Sincerely,

Charley Palmer, *Hydrologist 3*
DEC Drinking Water Source Protection
E-mail: charley.palmer@alaska.gov
Phone: (907) 269-0292

Alternate contacts:
Chris Miller, Environmental Program Specialist 4, chris.miller@alaska.gov
Kenna Billups, Environmental Program Specialist 2, kenna.billups@alaska.gov

THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Environmental Conservation

DIVISION OF ENVIRONMENTAL HEALTH
Drinking Water Program

555 Cordova Street
Anchorage, Alaska, 99501
Main: 907.269.7656
Toll free: 866.756.9656
Fax: 907.269.7650

July 14, 2022

Recommendations for general project activities associated with, or near, a public water system source

The following recommendations are intended to address potential impacts of projects, to be permitted or otherwise, in which planned activities are associated with, or near, a public water system (PWS) source (e.g., water well, spring, surface water intake, etc.). The key aspects of these recommendations are to identify nearby PWS sources, establish appropriate points of contact for the applicant and PWS, and implement best management practices.

Authority:

18 AAC 80.015. Well protection, source water protection, and well decommissioning.

a) A person may not
   (1) cause pollution or contamination to enter a public water system; or
   (2) create or maintain a condition that has a significant potential to cause or allow the pollution or contamination of a public water system.

Recommendations:

1) Identify on a legible map if any part of the project is within a Drinking Water Protection Area (DWPA) for a PWS source. DWPAs can be found using the interactive web map application, "**Alaska DEC Drinking Water Protection Areas**", located at https://dec.alaska.gov/das/GIS/apps.htm. Links to basic instructions for using this web map can be found on the map description page. If you experience problems accessing the map, please contact the Drinking Water Source Protection group at (907) 269-7549, or chris.miller@alaska.gov.

2) Where the project/permit intersects a DWPA, notify the associated PWS contact and provide the following:

   a) A brief description of the project location and associated activities; and

   b) Project contact information.

   PWS contact information can be obtained using the hyperlink from within the pop-up information for each PWS source in the web map, or directly by using the online application called "Drinking Water Watch", found at https://dec.alaska.gov/DWW/.

3) Within the identified DWPA, control stormwater and wastewater discharge such that it is directed away from the PWS.

Recommendations for general project activities associated with, or near, a public water system source (continued)

4) Within the identified DWPA, restrict project/permit activities that could significantly and/or permanently change the natural surface water or groundwater levels of the water sources immediately contributing to the PWS.

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   a) Zone A DWPA (several-months-time-of-travel for contributing groundwater, or 1,000-foot buffer of the contributing surface water body and its immediate tributaries);

   b) Zone E DWPA (1,000-foot buffer of the contributing surface water body and its immediate tributaries for a source using groundwater under the direct influence of surface water (GWUDISW)); or

   c) Provisional DWPA (1,000-foot radius around a PWS source).

7) All non-proprietary data related to the project/permit, including but not limited to, water quality results (field and lab), survey data, water levels, subsurface lithologic descriptions and depth, and groundwater flow direction and gradient information, should be made available to the permitting agency upon request.

   a) When associated with the development, construction, modification, or operation of a PWS, follow the requirements in DEC Drinking Water regulations 18 AAC 80, https://dec.alaska.gov/eh/dw/regulations/.

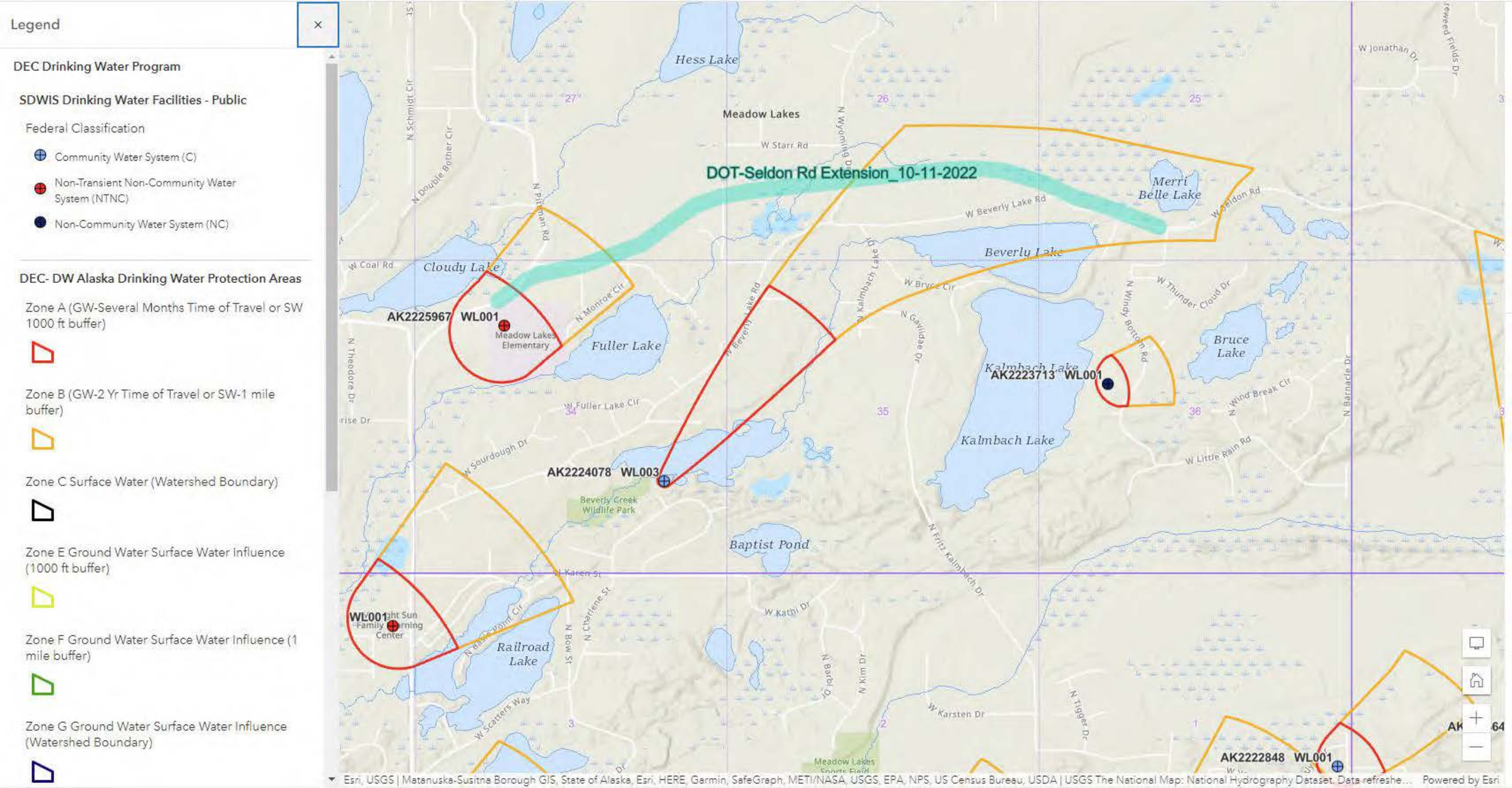
8) Keep a list of PWS contacts and agency spill reporting contacts readily available.

   a) Immediately notify contacts of any potential contamination event, such as spills or excess erosion.

Sincerely,

Charley Palmer, *Hydrologist 3*
DEC Drinking Water Source Protection
E-mail: charley.palmer@alaska.gov
Phone: (907) 269-0292

Alternate contacts:
Chris Miller, Environmental Program Specialist 4, chris.miller@alaska.gov
Kenna Billups, Environmental Program Specialist 2, kenna.billups@alaska.gov


Legend
DEC Drinking Water Program
SDWIS Drinking Water Facilities - Public
Federal Classification
Community Water System (C)
Non-Transient Non-Community Water System (NTNC)
Non-Community Water System (NC)
DEC- DW Alaska Drinking Water Protection Areas
Zone A (GW-Several Months Time of Travel or SW 1000 ft buffer)
Zone B (GW-2 Yr Time of Travel or SW-1 mile buffer)
Zone C Surface Water (Watershed Boundary)
Zone E Ground Water Surface Water Influence (1000 ft buffer)
Zone F Ground Water Surface Water Influence (1 mile buffer)
Zone G Ground Water Surface Water Influence (Watershed Boundary)
DOT-Seldon Rd Extension_10-11-2022
AK2225967 WL001
AK2224078 WL003
AK2223713 WL001
AK2222848 WL001
WL001
Meadow Lakes Elementary
Hess Lake
Meadow Lakes
Cloudy Lake
Fuller Lake
Beverly Lake
Merri Belle Lake
Bruce Lake
Kalmbach Lake
Baptist Pond
Railroad Lake
Beverly Creek Wildlife Park
W Starr Rd
W Beverly Lake Rd
W Seldon Rd
W Coal Rd
W Fuller Lake Cir
W Sourdough Dr
W Kathi Dr
W Karsten Dr
W Little Rain Rd
N Monroe Cir
N Pittman Rd
N Schmidt Cir
N Double Bother Cir
N Theodore Dr
N Kalmbach Lake Dr
N Gavildae Dr
N Fritz Kalmbach Dr
N Barnacle Dr
N Wind Break Cir
W Thunder Cloud Dr
N Windy Bottom Rd
W Bryce Cir
N Charlene St
N Bow St
N Kim Dr
N Tigger Dr
W Scatters Way
W Jonathan Dr
Esri, USGS | Matanuska-Susitna Borough GIS, State of Alaska, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | USGS The National Map: National Hydrography Dataset, Data refreshe...
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SELDON ROAD EXTENSION, PHASE II

Beverly Lakes Road/Windy Bottom to Pittman Road
Project Number: CFHWY00562/0001723

Public Involvement Plan

April 13, 2022
Prepared by: Yehle & Associates LLC on behalf of the Alaska Department of Transportation & Public Facilities

Public Involvement Scope

Previous public involvement efforts were extensive and included the Matanuska-Susitna Borough, Meadow Lakes Community Council, Meadow Lakes Elementary School, fire department, and members of the public. This project is popular, and we anticipate a high level of public interest along with participation. To facilitate engagement, we will provide a series of public meetings and other opportunities to discuss the project. This document serves as an outline for public engagement activities.

PUBLIC INVOLVEMENT SCHEDULE

- Public Involvement Plan - May 2022
- Transportation Fair #1 - October 2022
- Public Outreach - 2022 to early 2024
- Open House Meeting - March 2023
- Community Council Meeting #1 - July 2023
- Community Council Meeting #2 - Fall 2023
- Transportation Fair #2 - October 2023

Project Overview

The purpose of the project is to complete the work that began with the Seldon Road Extension, Phase I, and connect Palmer to Meadow Lakes along the Seldon Road corridor. The first phase began at Church Road and extended to Beverly Lake Road. It was completed in 2015. The second phase will complete the connection to Pittman Road.

Project Benefits:

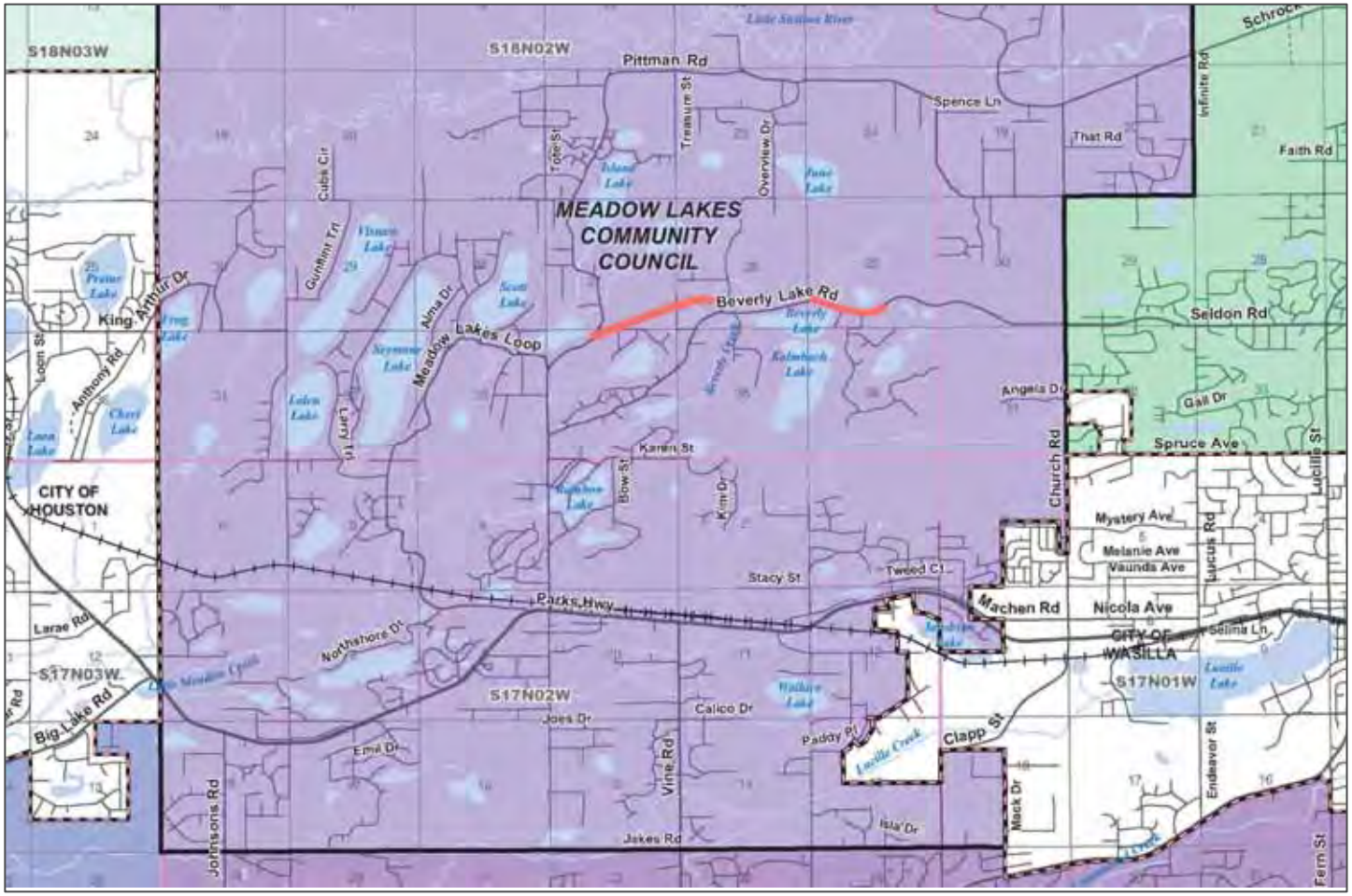
- Improves area circulation.
- Provides an alternate route to the Parks Highway.
- Shortens commuting time for Meadow Lakes' area residents traveling to Wasilla.
- Shortens emergency response times.

Anticipated Public Issues

- Remaining right-of-way purchase
- Speeding near residences and school
- Lengthy project timeline
- Existing safety, speeding, and road condition issues on Beverly Lake Road

Project Location

The project is in Meadow Lakes, Alaska and is within the Meadow Lakes Community Council Boundary. Residents use the Seldon Road corridor as an alternative to the Parks Highway. The project location is shown below in red.



Local Concurrence

When the project was previously managed by the Borough, the Planning Commission approved the current design, and the current design meets local planning and zoning ordinances. The previous Borough project manager is invited to monthly project meetings to apprise the Borough of the current project status.

The Meadow Lakes Community Council is the only Community Council within 0.5 miles of the project and the team will send them a formal letter per Figure 450-2 of the Alaska Highway Preconstruction Manual requesting review and comment on the plans.

There are no villages within two miles of the project.

Public Involvement Methods, General Public

WEBSITE. The website will provide background on the project, documents, meeting information, and an email subscribe link. Homestead Graphics will develop and maintain the site using an Alaska Department of Transportation and Public Facilities template.

PUBLIC MEETINGS. The team will conduct two public meetings to share project information with the public and solicit feedback. The meetings will be in-person with an online component.

OUTREACH. For each public meeting, outreach will include, but will not be limited to:

- Email notice to subscribers
- Mailer to:
    - Mailing list (elected officials, interest groups, etc.)
    - Residents and businesses within approximately one mile of the project area.

MEETING MATERIALS. Meetings will include fact sheets, project maps and graphics, comment forms, and follow-up.

TRANSPORTATION FAIRS. The annual Transportation Fairs attract a large audience and provide a venue for providing project information to regional users of the corridor. We plan to participate in the fall 2022 and 2023 Transportation Fairs. Camden Yehle is the organizer of the Transportation Fairs and will facilitate coordination.

COMMUNITY COUNCIL MEETINGS. The team will provide updates to the Meadow Lakes Community Council by request. Camden is the current President of the Meadow Lakes Community Council and will facilitate scheduling.

STAKEHOLDER COMMUNICATIONS. Yehle will receive, document, and prepare responses for stakeholder communications.

MEDIA COMMUNICATIONS. The team will route all media communications through Project Manager Chris Bentz.

PUBLIC INVOLVEMENT DOCUMENTATION. Camden will prepare a comment and response summary in addition to a chronology of all public involvement actions taken.

CLOSE OUT DOCUMENTATION. Final documentation of all public engagement activities and correspondence will take the form of a digital file transfer to the Department for future use and reference.

CONTACT AND EMAIL LIST. The team will develop a mailing and email list which will include members of the public, elected officials, and others. Camden will update the lists as needed throughout the project. Interested people will be able to opt into the email list on the website.

Below is an initial list of expected stakeholders, members of the public, and organizations who may be interested in the project. The team will include these entities in the initial project outreach/mailing list.

General Public

- Business owners
- Property owners
- Residents

Local Communities

- Meadow Lakes
- Wasilla

First Nation Entities

- Chickaloon Village Traditional Council
- Cook Inlet Region Inc
- Knik Tribe
- Knikatnu Inc

Local Government Entities

- State legislators
- Matanuska-Susitna Borough
    - Community Council (Meadow Lakes)
    - Assembly
    - Community Development
    - Emergency Services
    - Fire Service Areas (Central Mat-Su)
    - Parks, Recreation & Trails Advisory Board
    - Planning Commission

- Planning Department
- Public Affairs
- Public Works
- Road Service Areas (Meadow Lakes)
- Transportation Advisory Board

Other Organizations

- Alaska Mat-Su Valley ATV Club
- Alaska Motor Mushers Club
- Alaska State Snowmobile Association
- Alaska Trails
- Alaska Trucking Association
- Valley Mountain Bikers and Hikers Association

PROJECT TEAM

Lead Agency

Alaska Department of Transportation and Public Facilities:

Chris Bentz, Project Manager, 907-269-0652, chris.bentz@alaska.gov

Drew Vonlindern, Environmental Analyst

Consultant Team

Stantec:

Steve Kari, Project Manager, 907-343-5277, steve.kari@stantec.com

Tom Garrett, Civil Engineering

Brian Chase, Traffic Engineering/Analysis

Sara Lindberg, Environmental Lead

Kacy Hillman, Categorical Exclusion

Yehle & Associates LLC:

Camden Yehle, Public Involvement Lead, 907-346-0506, camden.yehlealaska@gmail.com

SIGNATURES

These signatures indicate approval of the initial final version of the public involvement plan; however, this is a living document to be updated as needed as the project develops.

Project Manager: _____ Date: 4/28/2022

Planning Chief: _____ Date: 5/17/2022

Pre-Construction Engineer: Luke Bowland Digitally signed by Luke Bowland Date: 2022.05.17 10:28:20 -08'00' Date: 5/17/22

Seldon Rd Extension Phase II: Windy Bottom/Beverly Lakes Rd to Pittman Rd

Scope: The purpose of the Phase II project is to complete the connection from Church Road to Pittman Road. The first phase, completed in 2015, went from Church Road to Beverly Lake Road. Phase II will connect to Pittman.

Major Features:

- Provide an alternate route to the Parks Highway.
- Separated pathway for the full length of the project.
- 50 mph speed limit to match the speed of Seldon Road.

The Borough previously developed the project design, however now that the project will receive federal funding we must work through the federal process.

Schedule: We anticipate construction in 2024.

Project Cost: Total costs are expected to be about $11 million.

Current & Upcoming Activities: The team is working on a Categorical Exclusion environmental document required for federal funding. At least one partial property remains to be purchased.

Contact Info: To reach the team, email seldon@yehlealaska.com or text or call 907-346-0506.

Chris Bentz, Project Manager, Alaska Department of Transportation & Public Facilities

Steve Kari, Consultant Project Manager, Stantec

Camden Yehle, Public Involvement Lead, Yehle & Associates

Website: http://www.seldon-phase2.com

Updated: 10/17/2022

Meadow Lakes Community Council Meeting (October 12, 2022, 7 pm, Zoom meeting link: https://bit.ly/3eUtZ92, or by phone: 253-215-8782, Meeting ID: 848 2210 2933, Passcode: 829443)

Seldon Road Extension Phase 2 - Presentation Outline

1. **Introductions (Chris)**

    a. Chris Bentz, Project Manager, Alaska Department of Transportation & Public Facilities
    b. Steve Kari, Consultant Project Manager, Stantec
    c. Camden Yehle, Public Involvement Lead, Yehle and Associates
    d. Mike Campfield, Mat-Su Borough

2. **Project Overview (Steve for rest of presentation)**

    The purpose of the Phase II project is to complete the work that began with the Seldon Road Extension, Phase I, and connect Palmer to Meadow Lakes along the Seldon Road corridor. The first phase, completed in 2015, went from Church Road to Beverly Lake Road. The second phase will complete the connection to Pittman Road.

    Major Features:

    - Provide an alternate route to the Parks Highway.
    - Separated pathway for the full length of the project.
    - 50 mph speed limit to match the speed of Seldon Road, Phase I.
    - New frontage road near Meadow Lakes Elementary School.

3. **Project Cost**

    Phase II total costs are expected to be in the $11 million range. Funding is from the voter approved Borough bond package and federal funding.

4. **Schedule**

    We anticipate construction in 2024. The primary causes of delays so far are:

    - Right-of-way acquisition issues
    - Securing funding
    - Following the federal National Environmental Policy Act process that is required to use federal funds

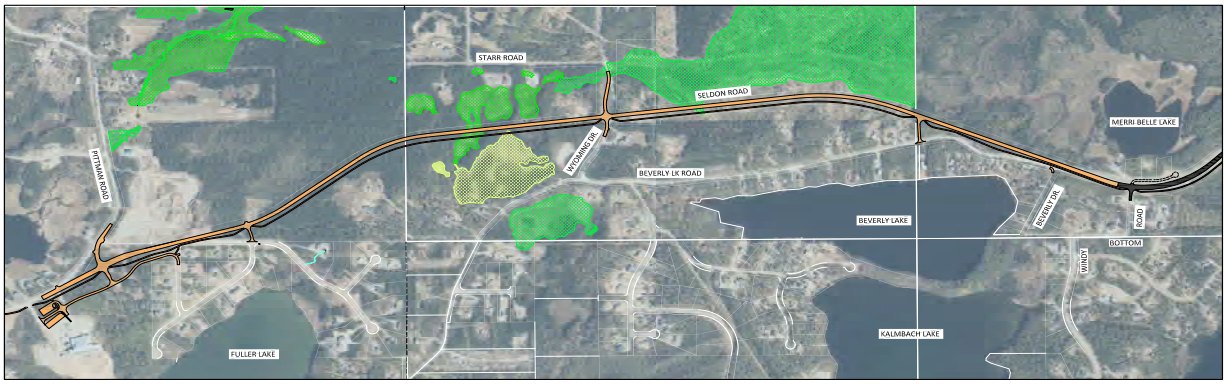
5. **Contact Info (paste into the chat box)**

    Website: http://www.seldon-phase2.com/index.shtml

Email: seldon@yehlealaska.com
Text or call Camden Yehle, Public Involvement Lead, at: 907-346-050

6. **Overview Graphic:**

Seldon Road Extension Project Phase II Alignment



Stantec

Matanuska-Susitna Borough

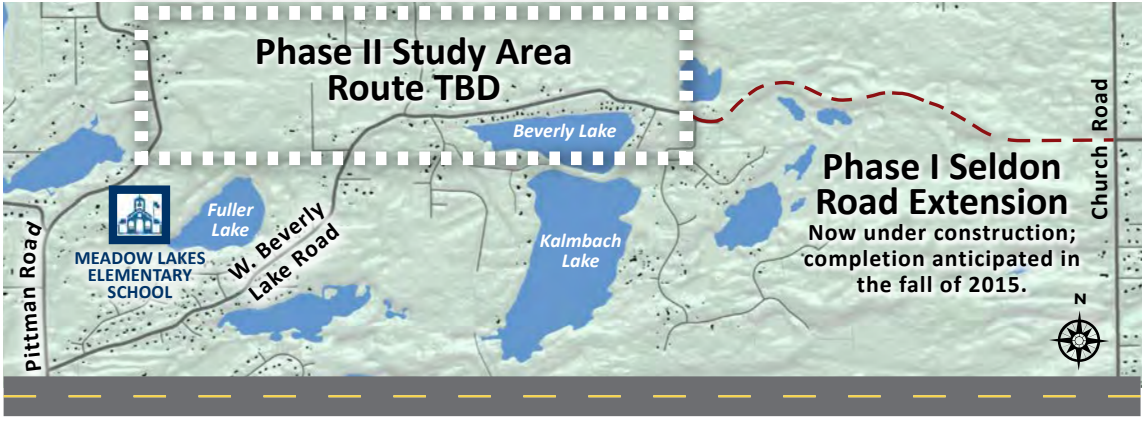
Matanuska-Susitna Borough Project Update!

PUBLIC MEETING

Meadow Lakes Elementary School
5:00 pm - 8:00 pm

Thursday
November
13th

Rescheduled to this date due to a conflict with the Mat-Su Transportation Fair October 22, 2014*



Phase II Pittman Road to Beverly Lake Road

*The Route Alignment Study is now underway for Phase II. We need your involvement and input in **November 2014** to help the Borough determine a preferred alignment.*

* **Visit our project table at the October 22 Mat-Su Transportation Fair, 4-8 pm, Raven Hall, Alaska State Fairgrounds**

Seldon Road Extension Project Church Road to Pittman Road

Project Update!

Phase I Seldon Road Extension

Beverly Lake Road to Church Road

2.25 miles of new road is under construction; completion is anticipated in the fall of 2015.

Phase II Seldon Road Extension

Pittman Road to Beverly Lake Road

A route alignment study is underway this fall to explore extending Seldon Road to Pittman (approximately 1.75 miles), including public meeting and input opportunities:

Mat-Su Transportation Fair - October 22, 2014

Visit our project table to review the Phase II alignments that have been considered since the 1980s.

Preliminary Engineering Report - November 1, 2014

A DRAFT Preliminary Engineering Report will be posted to the Seldon Road Extension project website for review:

www.matsugov.us/project/roads/bond-projects

Public Meeting #2 - November 13, 2014

We need your input on possible Phase II route alignments.

Stantec

For more information contact:
Stantec, formerly USKH - Sara Doyle
Public Involvement Coordinator
Wasilla: 352-7813 sara.doyle@stantec.com

Stantec, formerly USKH
351 W. Parks Highway, Suite 200
Wasilla, Alaska 99654

Seldon Road Extension Project

We need your input!

PUBLIC MEETING

1741 N. Pittman Road (MP 2.0)

Meadow Lakes Elementary School Gym

Thursday **November 13th**

5:00 pm - 8:00 pm

Drop in anytime, open house format

Rescheduled to this date due to a conflict with the Mat-Su Transportation Fair October 22, 2014, 4-8 pm, Raven Hall, Alaska State Fairgrounds - Visit our project table.

The Matanuska-Susitna Borough and Stantec, formerly USKH, are midway through a project to extend Seldon Road between Church Road and Pittman Road. This new road represents the next link in an east-west corridor envisioned to reach from Palmer to Houston.

Please join project staff and your neighbors at a public meeting to discuss:

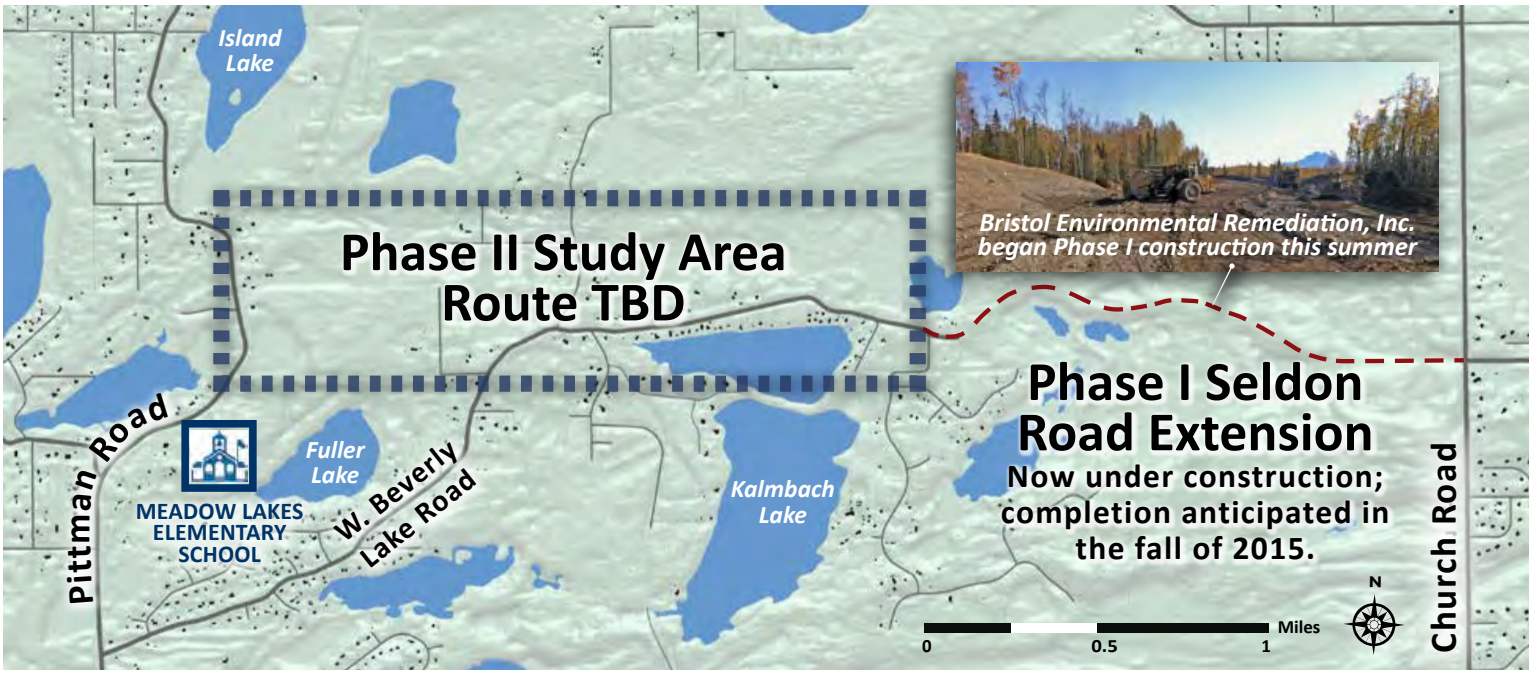
- Phase I construction progress;
- Phase II route evaluations spanning from the 1980s to today; and
- Phase II alignment options.

Your input is needed to help the Borough select a Phase II preferred route.

For more information contact:

Stantec, Sara Doyle
Public Involvement Coordinator
Wasilla: 352-7813 (1-888) 706-8754
sara.doyle@stantec.com

Learn more online (select the Seldon Road Extension link): matsugov.us/project/roads/bond-projects



Matanuska-Susitna Borough

MAT-SU COLLEGE

Courtesy Matanuska-Susitna College

Governor Sean Parnell and First Lady Sandy Parnell were guests in adjunct instructor Dan Kennedy's Business Law class at Mat-Su College Oct. 30. He also attended a meet-and-greet event in the atrium at the college Thursday following Kennedy's class.

Seldon Road open house planned Nov. 13

An open house to update the public on the Seldon Road extension is planned from 5 to 8 p.m., Nov. 13 at the Meadow Lakes Elementary School Gym, 1741 N. Pittman Road, Mile 2, Pittman Road. The Mat-Su Borough is midway through a project to extend Seldon Road Church Road and Pittman Road. The open house will provide an update on Phase I of construction, Church Road to Beverly Lakes Road. And people will be asked to provide input to help the borough select a preferred route for Phase II. The extension will add a new east-west corridor from Palmer to Houston. For more information, contact 352-7813, or sara.doyle@stantec.com.

NEWS & NOTES

Comments due Nov. 14 on Parks upgrade project

Comments are due Nov. 14 on the proposal rehabilitate a section of the George Parks Highway from Mile 163 to 183 (Little Coal Creek to 2 miles south of the East Fork of the Chulitna River Bridge.) Research on potential environmental impacts from the proposed project actions and figures of the project area can be reviewed at bit.ly/1sSXzdl. For more information, or to submit comments, contact Richard Stumpf at 907-451-2285, or email rj.stumpf@alaska.gov.

Input sought on airport regs

The Alaska Department of Transportation and Public Facilities seeks public comment by Nov. 17 on changes to chapters 42 and 45 of the Alaska Administrative Code regulations, which cover authorized land use and activity at airports, leases, concessions, security, aircraft parking and tie-down and airport operations. The document is available online at bit.ly/1qiSHwG. Comments may be submitted via email to alex.moss@alaska.gov.

LNG open house is Nov. 18

A community open house is planned on the Alaska Liquefied Natural Gas Project at Trapper Creek Elementary School from 6 to 8 p.m., Nov. 18. For information, call (855) 550-5445 or visit ak-lng.com.

APPEAL

Continued from Page 1

tion should be overturned because the prosecutor in the case improperly told the jury that a small piece of metal found in his girlfriend's face after the shooting was a piece of the bullet he fired.

At trial, the girlfriend had tried to testify that her doctor said the metal was "from probably the bullet" but since that counts as hearsay — she heard the ment that the fragment was from the bullet.

In slapping down Escholt's arguments, Allard quotes the prosecutor's closing statements where the metal fragment comes up.

"A piece of a bullet fragment or piece of metal also hit her in the face," the prosecutor says at one point and then, at another point: "It was a bare miss. The bullet fragments in that — from that bullet — actually hit her in the face."

"A prosecutor is entitled to argue facts that are, 'within the range of reasonable inference which could be drawn from the evidence," Allard writes. "Here, the evidence properly before the jury was that the bullet had fragmented within the Suburban, embedding pieces of metal in the rubber molding of the Suburban door, and that a tiny 'dot' of metal was found in (the girlfriend's) temple a few days after the incident. Given these circumstances, metal found in (her) temple came either from a bullet fragment or from some other metal debris created by the fragmenting bullet."

Allard and the rest of the court therefore affirmed Escholt's conviction but did side with him on one minor point — that corrections to a document in his case called the pre-sentence report should have been adopted into the final version of that document and were not. The appeals court sent the case back to Palmer

Project Number CFHWY00562 / 0001723

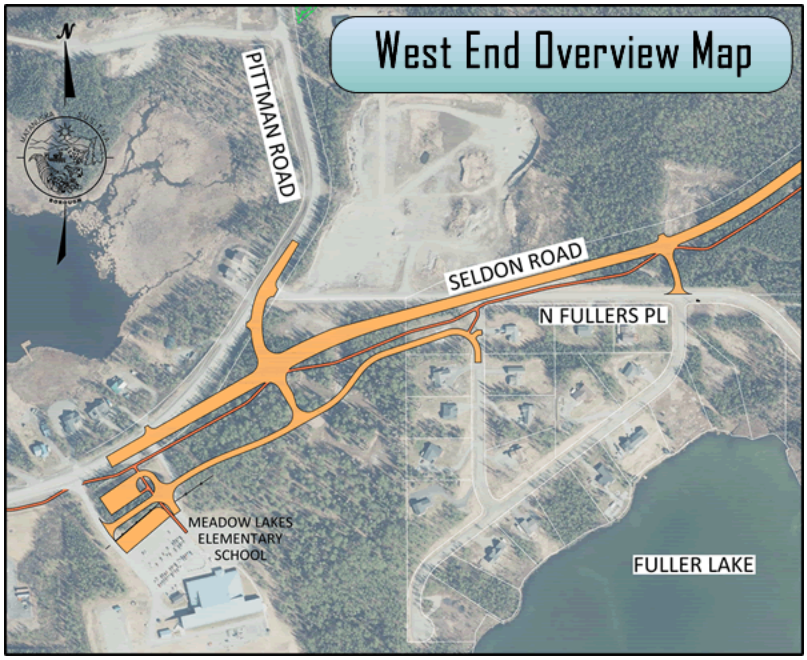
Seldon Road Extension Phase II: Windy Bottom/Beverly Lakes Rd to Pittman Rd

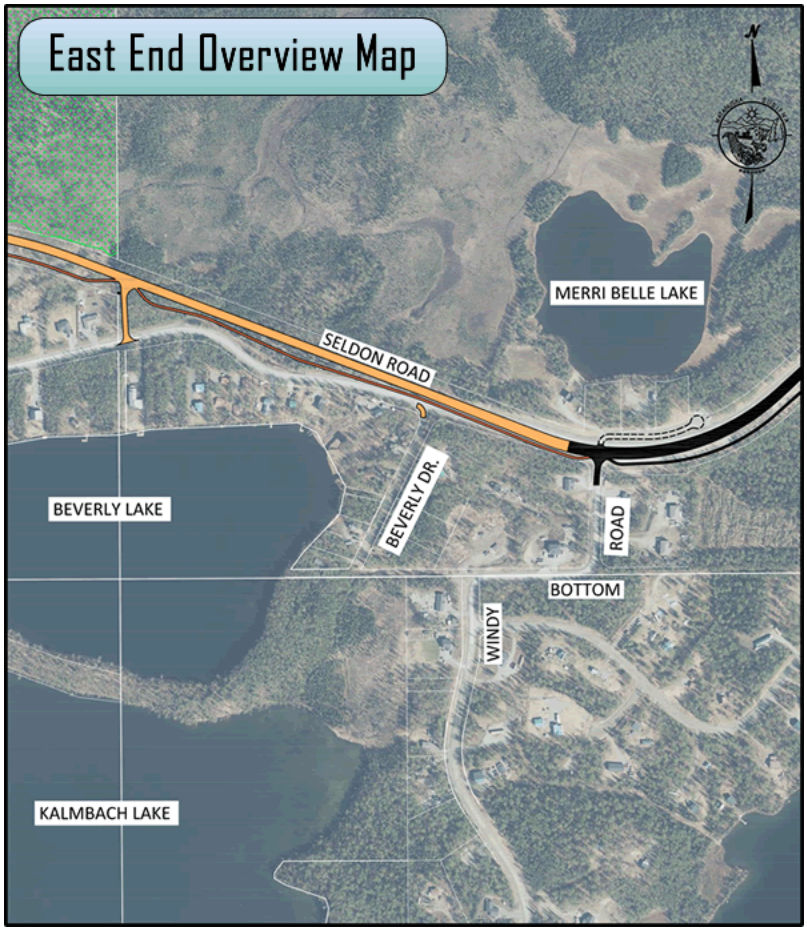
Overview

The purpose of the Phase II project is to complete the work that began with the Seldon Road Extension, Phase I, and connect Palmer to Meadow Lakes along the Seldon Road corridor. The first phase, completed in 2015, went from Church Road to Beverly Lake Road. The second phase will complete the connection to Pittman Road.

Major Features:

- Provide an alternate route to the Parks Highway.
- Separated pathway for the full length of the project.
- 50 mph speed limit to match the speed of Seldon Road, Phase I.
- New frontage road near Meadow Lakes Elementary School.
- New trailhead parking area near Meadow Lakes Elementary School.





Schedule

The design has the potential to be significantly accelerated, however right-of-way acquisitions and transitioning to a federal process to leverage federal funding have delayed construction to 2024. We appreciate your patience as we work through the requirements to use federal funds. We will construct the project as soon as possible.

Project Cost

Phase II total costs are expected to be in the $10 million range. Funding through the federal Community Transportation Program will complete Phase II.

Funding was originally available for this project in 2011 through a combination of state grant funds and Borough general obligation bonds. The cost for Phase I was approximately $5.5 million.

Documents

Unless noted, the document links on this site are all in pdf format. You must have Acrobat Reader to view the documents. If you do not have Acrobat Reader, click here to download the free software.

The team will post project documents as they become available. Note: The Matanuska-Susitna Borough previously completed a design for the Phase II project segment. Borough project development documents are located at https://www.matsugov.us/projects/seldon-road-extension.

Relevant Planning Documents

1. Mat-Su Borough Comprehensive Plan
2. Meadow Lakes Comprehensive Plan

Project Team

Chris Bentz, Project Manager
Alaska Department of Transportation & Public Facilities
907-269-0652, chris.bentz@alaska.gov

Steve Kari, Consultant Project Manager
Stantec
907-343-5277, Steve.Kari@stantec.com

Camden Yehle, Public Involvement Lead
Yehle and Associates
907-346-0506, camden.yehlealaska@gmail.com

Submit a Comment or Question

- Send an email to seldon@yehlealaska.com
- Text or call Camden Yehle, Public Involvement Lead, at 907-346-0506

MAT-SU

Seldon Road Extension Phase II - Windy Bottom Road to Pittman Road

Scope

The purpose of this project is to continue the roadway connection between Church Road and Pittman Road and represents the next link in an east-west corridor envisioned to reach from Palmer to Meadow Lakes. Design and construction is taking place in two phases, with the first phase beginning at Church Road and extending to the east end of Beverly Lake Road, completed in 2015. The second phase will complete the connection to Pittman Road. A typical section of roadway would include two 12'-wide travel lanes, 8' shoulders and a separated pathway.

Project Benefits

The project:

- Improves area circulation
- Provides an alternate route to the Parks Highway
- Shortens the commuting time for the Meadow Lakes area residents traveling to Wasilla.
- Shortens emergency response times.

Project Status

Phase 1 opened Wednesday, July 29, 2015. Construction on the new road finished ahead of schedule. Originally scheduled to open in September, it opened while the finishing touches were completed. Please, drive slow and be aware of changes to the traffic patterns, reduce speeds, and obey speed limit signs. A preferred Phase 2 Alignment was selected and confirmed by the Mat-Su Assembly. Right-of-way acquisition is 95% complete. In 2020, the Mat-Su Borough was awarded a matching grant from the Federal Highway Administration to complete the project. Project management has been transferred to the Alaska DOT&PF to complete the remaining work including design, ROW, and construction. Refer to the State's website here: http://www.seldon-phase2.com and their project Design Status Report for more information.

Contacts

Contact Information:

Matanuska-Susitna Borough
Mike Campfield, P.E., Project Manager
(907) 861-7719
Mike.Campfield@matsugov.us (mailto:Mike.Campfield@matsugov.us)

Project Docs

Corridor Access Management Plan (/projects?task=download&collection=file_upload_x&xi=0&file=file_upload&id=13435) (pdf 2.51 MB) | 2138 hits

Seldon Rd Extension PH II - Alignment (/projects?task=download&collection=file_upload_x&xi=1&file=file_upload&id=13435) (pdf 10.87 MB) | 1999 hits

Project Fact Sheet (/projects?task=download&collection=file_upload_x&xi=2&file=file_upload&id=13435) (pdf 322.55 KB) | 2921 hits

Design Status Report (July 2022) (/projects?task=download&collection=file_upload_x&xi=3&file=file_upload&id=13435) (pdf 558.99 KB) | 1767 hits

Project Cost

Funding was originally available for this project in 2011 through a combination of state grant funds and Borough general obligation bonds. The cost for Phase I was approximately $5.5 million.
Phase II total costs are expected to be in the $10 million range. Funding through the federal Community Transportation Program and Mat-Su Borough general obligation bonds will complete Phase II.

Serve on a Borough Board (/boards)

Employee Mail & Services (/join-us/employeeservices)

 | 350 E. Dahlia Ave., Palmer, AK 99645

(907) 861-7801 | Main Borough Building Hours: Mon.- Fri. 8 A.M. - 5 P.M.

SELDON ROAD EXTENSION

CHURCH ROAD TO PITTMAN ROAD

Matanuska-Susitna Borough **PROJECT FACTS**

Project Scope

The purpose of this project is to provide four miles of new roadway between Church Road and Pittman Road. By extending Seldon Road west, from Wasilla into Meadow Lakes, this project helps enhance regional east-west transportation options and improve traffic circulation for residents.

Design and construction will take place in two phases with the first phase beginning at Church Road and extending to the east end of Beverly Lake Road (see map on the back of this fact sheet). The second phase will complete the connection to Pittman Road.

Project Status

Phase I - Church Rd. to Beverly Lake Rd. 2.25 miles of new road is currently under construction; completion is anticipated in the fall of 2015.

Phase II - Beverly Lake Rd. to Pittman Rd. A route alignment study is underway this fall to explore extending Seldon Road to Pittman (approximately 1.75 miles), including public input opportunities:

Mat-Su Transportation Fair, October 22, 2014; Visit our project table to review the Phase II alignments that have been considered since the 1980s.

Preliminary Engineering Report (PER) November 1, 2014; A Draft will be posted to the project website for review.

Public Meeting #2, November 13, 2014 Public input will be sought on possible Phase II route alignments.

Once the Borough selects a preferred route, the roadway design will be engineered by Stantec (formerly USKH). Right-of-Way acquisition and construction of Phase II will be completed at a future date, depending on the availability of funds.

Project Costs

Funding in the amount of approximately $7.5 million is available for this project through a combination of state grant funds and Borough general obligation bonds. The construction cost estimate for Phase I is expected to fall in the $3 - $4 million range.

Benefits

The Seldon Road Extension will:

- Provide a new alternative emergency transportation route.
- Help create a new regional east-west transportation route between Palmer and Houston that relieves congestion on high-demand facilities, such as the George Parks Highway.
- Improve area circulation, and decrease travel times.

Contact Information

To learn how you can provide input and stay informed, contact Stantec's public involvement coordinator:

Sara Doyle sara.doyle@stantec.com
(907) 352-7813

For more information, contact the Borough:

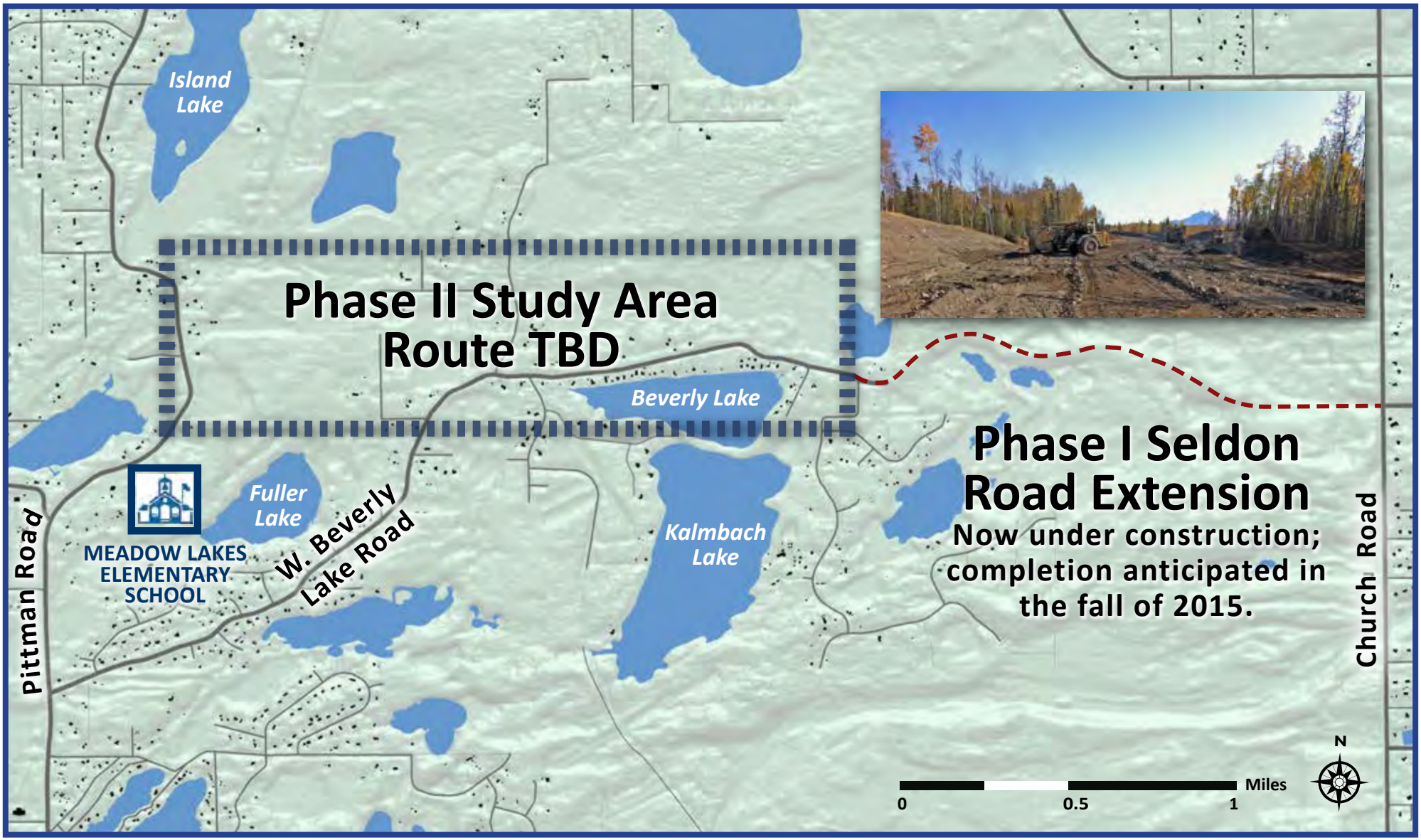
Michael J. Campfield, P.E
Capital Projects Pre-Design Division
Mike.Campfield@matsugov.us
(907) 861-7719

Also visit the project website (select the Seldon Road Extension link):

matsugov.us/project/roads/bond-projects

UPDATED October 7, 2014

Seldon Road Extension Project Church Road to Pittman Road



Updated October 7, 2014

Matanuska-Susitna Borough

Stantec

Seldon Road Extension, Phase II
Windy Bottom Road to Pittman Road
Public Meeting #2 - Summary

November 13, 2014 • 5:00 – 8:00 pm • Meadow Lakes Elementary School

Eighty-one residents and stakeholders attended the initial Seldon Road Extension Public Meeting. Participants were notified via a direct mailing to 750 property owners in the corridor vicinity, electronic announcements, notices in the Frontiersman newspaper, notices and meeting displays on the Borough's project webpage, direct outreach by email, and a 20-minute project presentation to the Meadow Lakes Community Council on the day prior, November 12, 2014.

The meeting format was an open house with four display stations. Participants were given an agenda with an input form on the back and asked to rank criteria and offer feedback. This summary generally describes each station's content, and input themes, as well as written comments from 23 individuals, and input from phone communications. This summary document is intended to capture the breadth of public feedback, and therefore includes some repetition.

Station 1: Sign In, Project Overview, & Public Input
(Sara Doyle, Stantec, Public Involvement Specialist)

Participants were welcomed to the event, and as they signed in, were given an agenda and input form, and provided with a verbal meeting orientation. Participants were also notified of a December 8, 2014 input deadline to return their input, including input on a project Preliminary Engineering Report (PER), which provided more detailed project information and was available on the Borough's webpage.

This station hosted a project overview poster on the History of the project as a major "East-West Corridor" dating from the 1980s, and the project's scope, goals, timeline, and status.

Public participation at this station also consisted of general questions and comments, and speculative discussions around which future routes might eventually connect westward to Houston beyond Pittman Road. Participants also handed in, or later emailed, input forms and written comments that are summarized in this section. Major input themes include:

- **Enhanced Connectivity:** A large number of individuals are looking forward to Seldon Road's extension (especially Phase I), and are glad to have an alternative to the Parks Highway, with enhanced east-west connectivity all the way from Meadow Lakes to Palmer.
- **Property Impacts:** Many participants expressed concern about possible project impacts, direct and indirect, to their properties and neighborhoods. This was also reflected in criteria rankings on the input form, as "*minimizing private property impacts*" was the highest ranked priority on average. However, several participants acknowledged that the area is currently more sparsely populated than it will be in the future, so doing this project now will minimize overall private property impacts.
- **Phase I Connection to Beverly Lake Road:** Many participants expressed concerns about safety and traffic impacts to Beverly Lake Road once Seldon Road Phase I is connected, especially because of curves, sight distance limitations, school bus stop patterns, and the number of driveways. Traffic speed limit reductions, speed bumps, and increased enforcement, and building Phase II as soon as possible were raised by participants as ways to address this concern. This was also reflected in criteria rankings on the input form, as "*locate the intersection to enable high-capacity westward travel with*

good sight distances" was the second ranked priority on average.

- **As Straight and Safe as Possible.** Residents are hoping for a safe route with good visibility. This was also reflected in criteria rankings on the input form, as "*roadway geometry*" was a close third-ranked priority on average by respondents. Also, Norm's Road alignment supporters typically mentioned they liked the road geometry.
- **Cost Issues:** Keeping the cost as low as possible is important but some residents also do not want the Borough to cut corners and end up with a sub-par road that needs lots of maintenance in the future. Cost was reflected in criteria rankings on the input form as the next to lowest ranked priority on average.
- **Natural Resource Impacts:** Concern was raised over impacts to wetlands, costly wetland and water crossings, and wildlife issues including Crane nesting impacts in the wetlands south of Fishback Circle, moose habitat loss and road crossing safety (a sign is recommended at each creek). Water quality was also a concern, including possible impacts to Beverly Lake from runoff, and drainage and glaciation issues that impact adjacent properties. Although these issues were mentioned by a number of individuals, this consideration was listed as the lowest ranked priority on average of all the criteria ranking options on the input form.
- **4-Way Roundabout Capacity:** Several participants expressed the desire to see planning for a 4-way roundabout in the long term, including by someone who was involved in the 1980s East-West Corridor Planning process, who believes that the Fishback Circle Alignment will create problems in the long term because it cannot support a four-way intersection or roundabout at Pittman Road and intersections near road curves.
- **Figure out Phase III first, before completing to Pittman:** Several individuals also emphasized the need to define where Phase III will go before finalizing the Phase II alignment's connection to Pittman Road so it can have the best flow and safety.
- **Address Pittman Safety Issues:** Residents living on Pittman mention that school buses and parents waiting to get into the school create congestion and an intersection at Zehnder would intensify the problem. They suggested that the Borough and State consider road improvements for Pittman including straightening, overhead lighting, and lower speed limits. It was also suggested that the Fishback Circle connection with Pittman is preferable as it provides the longest sight distance in both directions.
- **Upgrade Older Seldon Road Segments:** A few individuals asked that the Borough focus on upgrading older sections of the existing road before building Phase II.
- **Roadside Shoulder Use:** Individuals expressed a desire to see a broad shoulder alongside the road to allow 4-wheeler, horse, pedestrian, and other roadside traffic.
- **Phase III Connection to Skyview Drive (South Meadow Lakes)**: Several individuals suggested that the lower population levels and existing land uses (airstrips, rural residential) in the northern reaches of Meadow Lakes make the Peninsula Road section line less suitable for supporting future Seldon Road extension phases westward.
- **Use Beverly Lake Road (Phase II is Unnecessary):** Several individuals suggested that because of traffic destinations and settlement patterns, Phase II should not build a new connection, but instead upgrade Beverly Lakes Road to Pittman, and connect via a four-way stop to Skyview Drive with eventual connections to Houston. Several Beverly Lake Road residents, who prefer not to have traffic both in front and behind their houses, also concur with this assessment.
- **Do not use Beverly Lake Road (Phase II is critical):** Contradicting the theme above, some residents think that using part of existing Beverly Lake Road will disrupt homeowners, causing traffic safety and efficiency issues because of the many curves and driveways, and would be a poor choice over the long term.

Station 2: Alignment History, Suitability, & Criteria
(Kacy Hillman, Stantec, Environmental Analyst)

Participants at this station were presented with historic Phase II Route proposed alignments, including a 1984 Pittman-Lucille Connector and two alignments from a 2013 Arterial Study.

They were also presented with a display of the Phase II study area's suitability in terms of natural features such as lakes, waterways, and wetlands that were used, in addition to a range of proposed criteria used by the Seldon Extension project team, to evaluate possible Phase II alignments, based on project public input at the initial project meeting (fall 2013).

Finally, this station provided an overview of four preliminary alignments that were evaluated against criteria by the engineering team:

- Zehnder Road

- Fishback Circle

- Norm's Road

- Starr Road

Input themes at this station included:

- Concerns about wildlife corridor crossings with the Phase II alignment.
- Concerns about moose calving and bedding areas being displaced.
- A few individuals expressed preference for Phase II to follow and widen Beverly Lake Road to Pittman Road.
- Drainage concerns along Beverly Lake Road where Phase II begins.
- Inquiries of how the alignments were ranked.
- Inquiries of where the Phase II alignments would eventually go in the ultimate plan to connect to Houston.

Station 3: Preliminary Routes & Evaluations (*Steve Kari, Stantec, Principal Transportation Engineer; Will Webb, Stantec Transportation Engineer; Charles Hakari, Stantec, Transportation Engineer)*

Station three presented the November 2014 PER'stop rated alignments for Seldon Road Phase II, including the detailed evaluation and ranking of each route in terms of construction cost, transportation outcomes, and community impacts:

Ranked #1 - Fishback Circle Alignment

Ranked #2 - Norm's Road Alignment

Ranked #3 - Zehnder Road Alignment

Note that the Starr Road Alignment was ranked the lowest and not presented due to higher costs and impacts. Input themes at this station included:

- Speeding is a big issue on Beverly Lake Road.
- Everyone wants the project as far from their house as possible.
- People near the proposed connection between Beverly Lake Road and Seldon Road at station 105+50 (Fishback option) are concerned about safety, considering curves on Beverly Lake Road. They suggested moving the connection to the section line to the west.
- Concerns were raised about drainage on the east end of the site, where the wet areas to the north drain into Beverly Lake. Changes to the existing drainage patterns could have adverse impacts to properties.
- Residents mentioned a wildlife corridor along the creek shown on our maps east of Wyoming.
- Several participants expressed concerns about collisions with moose.
- Several attendees want the alignment chosen with an eye toward the ultimate Phase III extension. The consensus was it would be short sighted to not plan for that.
- Several times it was mentioned that the connection should be at Norm's Road as it provides a better connection westward.
- There seemed to be a lot of interest in Phase III. With the exception of the property owners along the northern corridor where there are two air strips, most participants were anxious to see that connection with Houston.

Station 4: Right-of-Way (ROW) Acquisition (*Fred Mortimer, Dryden & LaRue, ROW Agent; Michael J. Campfield, P.E., Civil & Environmental Engineer, Matanuska-Susitna Borough, Capital Projects Department)*

This station presented handouts and input on how the land acquisition process would work for Seldon Road Extension Phase II, including property owner compensation, and a possible timeline.

A large display map highlighted private properties with possible right-of-way (ROW) acquisitions in the Phase II study area. This enabled the attending ROW agent and Borough project manager to hold preliminary conversations with property owners.

Input themes at this station included:

- Private property owners in the corridor are not in favor of alignments that impact their property, either through direct property takings, or proximity because of perceived noise and visual impacts.
- One property owner prefers directing Phase II traffic on Beverly Lake Road, even though she lives there, because of a desire not to have traffic both in front of and in back of her home.
- There is a need to improve Seldon Road between Lucille and Fishhook.
- Look at connecting to Beverly Lake Road through the section line easement.
- Add a Phase I project change order and widen to reduce S curves on Beverly Lake Road.
- Beverly Lake Road residents are concerned about speeding and would like signage and speed bumps, and double fines for speeding until Phase II is constructed.
- Beverly Lake Road needs fresh yellow striping and curve signs for dark conditions.
- One landowner suggests looking at connecting to Houston to the north through three parcels he owns.
- Pittman Road needs curve straightening for safety.
- Residents are concerned about noise and asked the Borough to look into sound mitigation options.

Additional input on specific alignments was offered by property owners who would be subject to ROW acquisitions:

(D10) Support for Fishback acquisition: The Fishback Circle alignment crosses a 40-acre property. Its owner supports this route because the crossing minimizes impacts to attractive spruce and birch forests on either side, plus it creates two parcels of similar size, enhancing options for future development.

(C22) Prefers Fishback over Zehnder: An adjacent homeowner (east of Fishback Circle) prefers the alternative behind his house over Zehnder, which would be in front of his house.

(Beverly Lake Estate Lot 8) Fishback Route is "reasonable": A property owner with a16-acre lot spanning Beverly Lakes road, just east of Wyoming Drive, would lose a portion of property north of a home. Although he prefers Starr Route (which requires no acquisition), he cites Fishback as the most feasible.

(D7, D8, D11) Opposed to Norm's Road acquisition prefers Zehnder: A large property owner along Pittman is impacted by three alignments; the Norm's Road alignment would impact a shop building. The owner strongly opposes this alignment for this and a variety of reasons. The owner prefers Zehnder and has made property investments anticipating this alignment. Fishback is also not ideal to this owner because of vegetation and wildlife impacts, and the road also bisects gravel operations, creating operational and safety concerns.

(B10) Opposed to Zehnder. Concerned about ROW impacts to their home, driveway, and access generally.

Opposed to Zehnder: Property owners living along Zehnder, especially in the Fuller Lake area, generally prefer Fishback due to the reduced noise, fewer driveway conflicts, and reduced congestion near the Pittman intersection.

From:	Hillman, Kacy
To:	"william.ashton@alaska.gov"; "mike.bethe@alaska.gov"; "judy.bittner@alaska.gov"; "mark.burch@alaska.gov"; "maureen_dezeeuw@fws.gov"; "Dean.Heather@epamail.epa.gov"; "Jonathan_Gerken@fws.gov"; "jeff.graham@alaska.gov"; "jeanne.hanson@noaa.gov"; "Nicole.M.Hayes@usace.army.mil"; "samuel.ivey@alaska.gov"; "kimberly_klein@fws.gov"; "LaCroix.Matthew@epa.gov"; "glenn.merrill@noaa.gov"; "samantha.oslund@alaska.gov"; "lori_verbrugge@fws.gov"; "Ellen_Lance@fws.gov"
Cc:	Mike Campfield; Kari, Steven; Doyle, Sara; Lindberg, Sara
Subject:	Seldon Road Extension Phase II | Agency Scoping
Date:	Tuesday, November 11, 2014 8:33:00 AM
Attachments:	SeldonRdPhaseII_AgencyScopingLtr_111114.pdf

Good Morning,

The Matanuska-Susitna Borough (MSB) contracted Stantec (formerly USKH) to provide professional services to design an extension of Seldon Road in two phases between its existing western terminus at Church Road to a new intersection with Pittman Road in Wasilla, Alaska. Phase I (Church to Beverly Lake Road) is currently under construction and the alternatives analysis for Phase II (western terminus of Phase I to a new intersection with Pittman Road; proposed project) is currently underway (see attached Figure 1). The proposed project is located at approximately 61.6171° North Latitude, -149.5689° West Longitude; Township 18 North, Range 2 West, Sections 25, 26, 27; Township 18 North, Range 1 West, Section 30; Seward Meridian. Additional information is included on the attached letter.

We request your comments on the proposed project, particularly in regard to resources under your jurisdiction. Please provide any information that would assist us. We request your written comments by **December 8, 2014**. A Preliminary Engineering Report is available for review and comment under the *Seldon Road Extension* page accessible here: http://www.matsugov.us/project/roads/bond-projects. Additionally, we invite you to attend the Seldon Road Extension Public Meeting on **November 13, 2014** from **5:00 – 8:00 pm** at Meadow Lakes Elementary Gym (1741 N. Pittman Road, Wasilla).

If you have any questions or comments regarding the proposed project please contact the Project Manager, Michael Campfield (MSB), by email at Mike.Campfield@matsugov.us, or by phone at (907) 861-7719 or the Environmental Analyst, Kacy Hillman (Stantec), by email at kacy.hillman@stantec.com, or by phone at (907) 276-4245. You may submit comments by mail to MSB, Capital Projects Pre-Design Division, Attn: Michael J. Campfield, P.E., 350 E. Dahlia Ave., Palmer, AK 99645.

Best Regards,

Kacy Hillman, PWS
Stantec
2515 A Street Anchorage AK 99503-2709
Phone: (907) 343-5241
Fax: (907) 258-4653
kacy.hillman@stantec.com

MATANUSKA-SUSITNA BOROUGH
Capital Projects Department
Pre-Design & Engineering Division
350 East Dahlia Avenue • Palmer, AK 99645
Phone (907) 861-7723 • Fax (907) 861-7735
e-mail: pre-design&engineering@matsugov.us

November 10, 2014

Re: Seldon Road Extension – Phase II
MSB Project Number 35411

Subject: Request for Scoping Comments

Dear Agency Contact:

The Matanuska-Susitna Borough (MSB) contracted Stantec to provide professional services to design an extension of Seldon Road in two phases between its existing western terminus at Church Road to a new intersection with Pittman Road in Wasilla, Alaska. Phase I (Church to Beverly Lake Road) is currently under construction and the alternatives analysis for Phase II (western terminus of Phase I to a new intersection with Pittman Road; proposed project) is currently underway (see attached Figure 1). The proposed project is located at approximately 61.6171° North Latitude, -149.5689° West Longitude; Township 18 North, Range 2 West, Sections 25, 26, 27; Township 18 North, Range 1 West, Section 30; Seward Meridian.

Phase II is in the early stages of design and environmental analysis. A MSB Projects Environmental Form will be completed to identify potentially impacted resources by the proposed project. To ensure potential impacts are properly identified, your agency's input at this time is important. Please identify any resources that may be impacted by the proposed project, or other information you deem valuable to the environmental analysis. Your response will help us evaluate potential impacts and help design the proposed project to avoid or minimize impacts.

Purpose and Need

The purpose of the proposed project is to:

- Provide an alternative emergency transportation route;
- Create a link in the new regional east-west transportation route between Palmer and Houston to relieve traffic congestion on high traffic volume corridors, such as the George Parks Highway; and
- Improve area circulation, and decrease east-bound travel distance for Beverly Lake and Pittman Road area residents.

Proposed Action

The proposed Phase II (approximately 2.25 miles) would complete the Seldon Road connection with Pittman Road (Figure 1). The proposed project would have a design speed of 55 miles-per-hour, include an approximate 40-foot road width (two 12-foot lanes and eight-foot shoulders), and an

approximate 160-foot right-of-way. A 10-foot pedestrian/bike pathway would be included on the south side of the roadway.

We request your comments on the proposed project, particularly in regard to resources under your jurisdiction. Please provide any information that would assist us. We request your written comments by **December 8, 2014**. A Preliminary Engineering Report is available for review and comment under the *Seldon Road Extension* page accessible here: http://www.matsugov.us/project/roads/bond-projects. Additionally, we invite you to attend the Seldon Road Extension Public Meeting on November 13, 2014 from 5:00 – 8:00 pm at Meadow Lakes Elementary Gym (1741 N. Pittman Road, Wasilla).

If you have any questions or comments regarding the proposed project please contact the Project Manager, Mike Campfield, P.E. (MSB), by email at Mike.Campfield@matsugov.us, or by phone at (907) 861-7719 or the Environmental Analyst, Kacy Hillman (Stantec), by email at kacy.hillman@stantec.com, or by phone at (907) 276-4245.

You may submit comments by mail to MSB, Capital Projects Department, Attn: Michael J. Campfield, P.E., 350 E. Dahlia Ave., Palmer, AK 99645.

Sincerely,

Michael J. Campfield, P.E.
Environmental Engineer
Capital Projects Department
Matanuska-Susitna Borough

Enclosures: Preliminary Research Results
Figure 1 – Location/Vicinity Map and Proposed Action

cc: William Ashton, Alaska Department of Environmental Conservation, Division of Wastewater
Mike Bethe, Alaska Department of Fish and Game, Habitat
Judith Bittner, Alaska Department of Natural Resources, State Historic Preservation Office
Mark Burch, Alaska Department of Fish and Game, Wildlife
Maureen de Zeeuw, United States Fish and Wildlife Service
Heather Dean, Environmental Protection Agency
Jon Gerken, United States Fish and Wildlife Service, Fisheries
Jeff Graham, Alaska Department of Natural Resources, Division of Forestry
Jeanne Hanson, National Marine Fisheries Service, Habitat Conservation Division
Nicole Hayes, United States Army Corps of Engineers
Sam Ivey, Alaska Department of Fish and Game, Sport Fish
Kimberly Klein, United States Fish and Wildlife Service, Endangered Species
Matt LaCroix, Environmental Protection Agency
Ellen Lance, United States Fish and Wildlife Service, Endangered Species
Glenn Merrill, National Marine Fisheries Service, Sustainable Fisheries Division
Samantha Oslund, Alaska Department of Fish and Game, Sport Fish
Lori Verbrugge, United States Fish and Wildlife Service, Environmental Contaminants

Preliminary Research Results

Wetlands and Waters of the U.S.: A review of the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory and the Kenai Watershed Forum Cook Inlet Wetlands show some wetlands within the proposed project study area. Reconnaissance field efforts were completed in September 2013 and August 2014 to verify existing mapped wetland boundaries and will be reviewed as part of the environmental analysis for the proposed project. A wetland delineation will be completed during the summer of 2015 after the preferred alignment is selected. Wetlands will be avoided to the extent practicable. If unavoidable wetland impacts may occur as part of the proposed project a Section 404 wetland fill permit would be required.

Fish and Wildlife: A review of the Alaska Department of Fish and Game (ADF&G) Fish Resource Monitor did not identify anadromous waters or known resident fish within the proposed project study area vicinity. A fish trapping survey was completed in September 2013 and did not identify juvenile fish within the proposed project study area. No Essential Fish Habitat exits for any protected species under the Magnuson-Stevens Fishery Conservation and Management Act within the proposed project study area vicinity.

An aerial eagle nest survey was completed in October 2013 for the proposed project study area to ensure compliance with the Migratory Bird Treaty Act and no eagle nests were identified.

State Refuges, Critical Habitat Areas, and Sanctuaries: A review of the ADF&G Refuges, Sanctuaries, Critical Habitat Areas and Wildlife Ranges did not identify protected areas within the proposed project study area vicinity.

National Parks, Preserves, Monuments, and Wild and Scenic Rivers: A review of the National Park Service National Parks and Wild and Scenic Rivers listings did not identify national parks, preserves, monuments, and wild and scenic rivers within the proposed project study area vicinity.

Threatened and Endangered (T&E) Species: A review of the United States Fish and Wildlife Environmental Conservation Online System did not identify T&E species within the proposed project study area vicinity. Correspondence received from the USFWS determined no federally listed, proposed species, and/or designated or proposed critical habitat within the proposed project study area.

Floodplains: A review of the Federal Emergency Management Agency Flood Insurance Rate Maps did not identify any floodplains within the proposed project study area vicinity.

Water Quality: A review of the Alaska Department of Environmental Conservation Impaired Waters List did not identify impaired waters within the proposed project study area vicinity. The proposed project would comply with the Alaska Pollutant Discharge Elimination System general permit for construction activities and it would be the contractor's responsibility to prepare a Stormwater Pollution Prevention Plan and implement Best Management Practices prior to construction.

Cultural Resources: There are no cultural resource sites within the proposed project study area vicinity listed in the Alaska Heritage Resource Survey. A cultural resource survey will be completed in summer 2015 and will be reviewed as part of the environmental analysis for the proposed project. At this time, it is not anticipated the proposed project would impact cultural resources. The State

Historic Preservation Officer, tribal entities, and other consulting parties in the area will be consulted in accordance with Section 106 of the National Historic Preservation Act.

Air Quality: According to Alaska Administrative Code (AAC), 18 AAC 50.15, Wasilla is classified as a Class II air quality area. Class II air quality areas, as defined by the Clean Air Act, includes all clean air regions not listed in Class I air quality areas (e.g., Denali National Park and other National Wilderness Areas). An area designated Class II is allowed moderate pollution increases unless otherwise designated by a State or tribe. Wasilla is designated as an "Attainment Area", meaning the area is within acceptable levels for various air pollutants.

Contaminated Sites, Spills, Underground Storage Tanks, and Hazardous Materials: There is no known contamination within the proposed project study area vicinity. A review of the Alaska Department of Environmental Conservation Contaminated Sites Program Database did not find any contaminated sites, spills, leaking underground storage tanks, or hazardous materials within the study area vicinity.

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Legend

- Phase I (Under Construction)

Phase II Potential Alignments

- Zehnder Road Alignment
- Fishback Circle Alignment
- Starr Road Alignment
- Norm's Road Alignment

0 1,000 2,000 4,000 6,000 Feet

VICINITY MAP

PREPARED BY STANTEC

Seldon Road Extension - Phase II Potential Alignments

MATANUSKA SUSITNA BOROUGH
WASILLA, ALASKA

Date	OCT 2014
Drawn	CDP
Checked	KDH/SL
Project No.	WO# 204700260

Sheet 1

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Anchorage Fish & Wildlife Field Office
605 West 4th Avenue, Room G-61
Anchorage, Alaska 99501-2249

In reply refer to: AFWFO

August 30, 2014

Emailed to:
Kacy Hillman
2515 A Street
Anchorage, AK 99503

Re: Wasilla Seldon Road

Dear Ms. Hillman,

Thank you for your email regarding wildlife species that may be affected by your proposal to design an extension of Seldon Road between its existing western terminus at Church Road to a new intersection with Pittman Road in Wasilla, Alaska. The U.S. Fish and Wildlife Service (the Service) is providing this list of threatened and endangered species in accordance with section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq., as amended, ESA).

There are no federally listed or proposed species and/or designated or proposed critical habitat within the action area. ***Therefore, no further coordination with the Service regarding threatened and endangered species is required.*** However, obligations under section 7 of the ESA must be reconsidered if new information reveals project impacts that may affect listed species or critical habitat in a manner or to an extent not previously considered, if this action is subsequently modified in a manner which was not considered in this assessment, or if a new species is listed or critical habitat is determined that may be affected by the proposed action.

This letter relates only to federally listed or proposed species and/or designated or proposed critical habitat. It does not provide coverage for the authorities of the National Marine Fisheries Service, the Fish and Wildlife Coordination Act, Migratory Bird Treaty Act, Marine Mammal Protection Act, Clean Water Act, National Environmental Policy Act, or Bald and Golden Eagle Protection Act. The following recommendations are voluntary measures that if adopted, will reduce the possibility of violating the Bald and Golden Eagle Protection Act or the Migratory Bird Treaty Act:

- In areas that are currently undeveloped and/or covered with intact vegetation, conduct all ground-disturbing work and vegetation removal during periods of time outside of the migratory bird breeding season. See the attached guidelines for specific timing windows.
- In areas where nesting bald eagles may be found, survey all areas within a ½-mile radius of project work to determine whether existing bald eagle nests occur there. If nests are found, contact the Service for additional recommendations to avoid disturbance.

Thank you for your concern regarding threatened and endangered species. If you have any questions, please contact me at (907) 271-2066.

Sincerely,

Kimberly J. Klein
Endangered Species Biologist

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