APPENDIX B

ESSENTIAL FISH HABITAT ASSESSMENT AND FISH SURVEYS

MEMORANDUM

State of Alaska

Department of Fish and Game
Division of Habitat

TO: Ronald Benkert
Central Region
Regional Supervisor

DATE: August 31, 2018

SUBJECT: Trip Report Shotgun Cove Road
August 2018

FROM: Will Frost WF
Habitat Biologist

PHONE NO: 267-2813

On August 28, 2018, I joined Olivia Cohn, Solstice Alaska Consulting in Whittier to conduct a fish presence/absence investigation for the proposed Shotgun Cove Road Extension project. The purpose of the project is to increase access to the City of Whittier and U.S. Forest Service lands for recreational opportunities. The proposed road will terminate near Trinity Point. Two road options are identified as the "low" road and "high" road. The weather conditions were sunny and warm.

On the morning of August 28, Ms. Cohn and I drove to the end of the existing Shotgun Cove Road. We walked the Emerald Cove Trail to the end of the proposed project and identified streams that may support salmonids. Our fish habitat observations were located mainly below the low road option (Location Map).

Stream #1 was located at 60.787 N, 148.623 W. We located a 7 foot high barrier about 30 meters upstream of tidewater (Figure 1). We set a baited minnow trap about 75 meters upstream of the barrier in meadow habitat (Figure 2). The trap soaked about 5 hours and no fish were captured or observed in the steam. The road crossing structure will not be required to provide fish passage.

Stream #2 was located at 60.788 N, 148.622 W. We walked downstream to tidewater and observed the streamflow became subsurface at the beach (Figure 3). About 150 meters upstream of the beach we observed a gradient barrier to fish passage (Figure 4). No salmonids were observed. The road crossing structure will not be required to provide fish passage.

Stream #3 was located at 60.790 N, 148.616 W. The stream was partially dry and unlikely to support fish. The road crossing structure will not be required to provide fish passage.

Stream #4 was located at 60.790 N, 148.614 W. We set a baited minnow trap directly downstream of a 30 foot high barrier (Figure 5). The trap soaked about 5 hours and no fish were captured or observed in the stream in the upper reach near the barrier. We walked downstream to tidewater and observed about 35 recently spawned pink salmon Figures 6 through 8). About 100 meters upstream from tidewater we observed a gradient barrier. The ADF&G requests to sample the stream upstream of the 30 foot barrier in the area of the proposed road crossings to determine if resident salmonids are present in the project area. The unnamed stream downstream of the gradient barrier will be nominated to the Anadromous Waters Catalog.

Stream #5 was located at 60.792 N, 148.609 W. The stream channel slope was over 25% and unlikely to support fish. The stream flowed over a cliff to tidewater (Figure 9). The road crossing structure will not be required to provide fish passage.

Stream #6 was located at 60.795 N, 148.602 W. The stream channel slope was over 25% and unlikely to support fish. The stream flowed over a cliff to tidewater (Figure 10). The road crossing structure will not be required to provide fish passage.

Stream #7 was located at 60.798 N, 148.595 W. The stream channel slope was over 25% and unlikely to support fish. The stream flowed over a cliff to tidewater (Figure 11). The road crossing structure will not be required to provide fish passage.

Stream #8 was located at 60.799 N, 148.593 W. We set one baited minnow trap in meadow habitat. The trap soaked about 4 hours and no fish were captured or observed in the stream. The proposed road corridors are located outside the stream's watershed.

Stream #9 was located at 60.798 N, 148.589 W. The stream was partially dry and unlikely to support fish. The road crossing structure will not be required to provide fish passage.

Stream #10 was located at 60.800 N, 148.583 W. We set one baited minnow trap about 50 meters upstream of tidewater (Figure 12). The trap soaked about 2 hours and no fish were captured or observed in the stream. The ADF&G requests to sample the stream upstream in the area of the proposed road crossings to determine if resident salmonids are present in the project area.

Stream #11 (Steam No. 224-10-14430) was located at 60.801 N, 148.578 W (Figure 13). The stream flows into Emerald Bay. We located a 40 foot high barrier directly downstream of the trail crossing about 100 meters upstream of tidewater (Figure 14). The ADF&G requests to sample the stream upstream of the barrier in the area of the proposed road crossings to determine if resident salmonids are present in the project area. The upper extent of the specified reach will be updated to the Anadromous Waters Catalog.

Stream #12 was located at 60.801 N, 148.576 W. The stream channel slope was over 25% and unlikely to support fish. The stream channel flowed into Emerald Bay. The road crossing structure will not be required to provide fish passage.

Figure 1. Stream #1 barrier.

Figure 2. Stream #1 trap location.

Figure 3. Stream #2 beach.

Figure 4. Stream #2 barrier.

Figure 5. Stream #4 barrier.

Figure 6. Stream #4 tidelands.

Figure 7. Stream #4 pink salmon carcass.

Figure 8. Stream #4 pink salmon eggs.

Figure 9. Stream #5 flowing over cliff to Passage Canal. View looking downstream.

Figure 10. Stream #6 flowing over cliff to Passage Canal. View looking downstream.

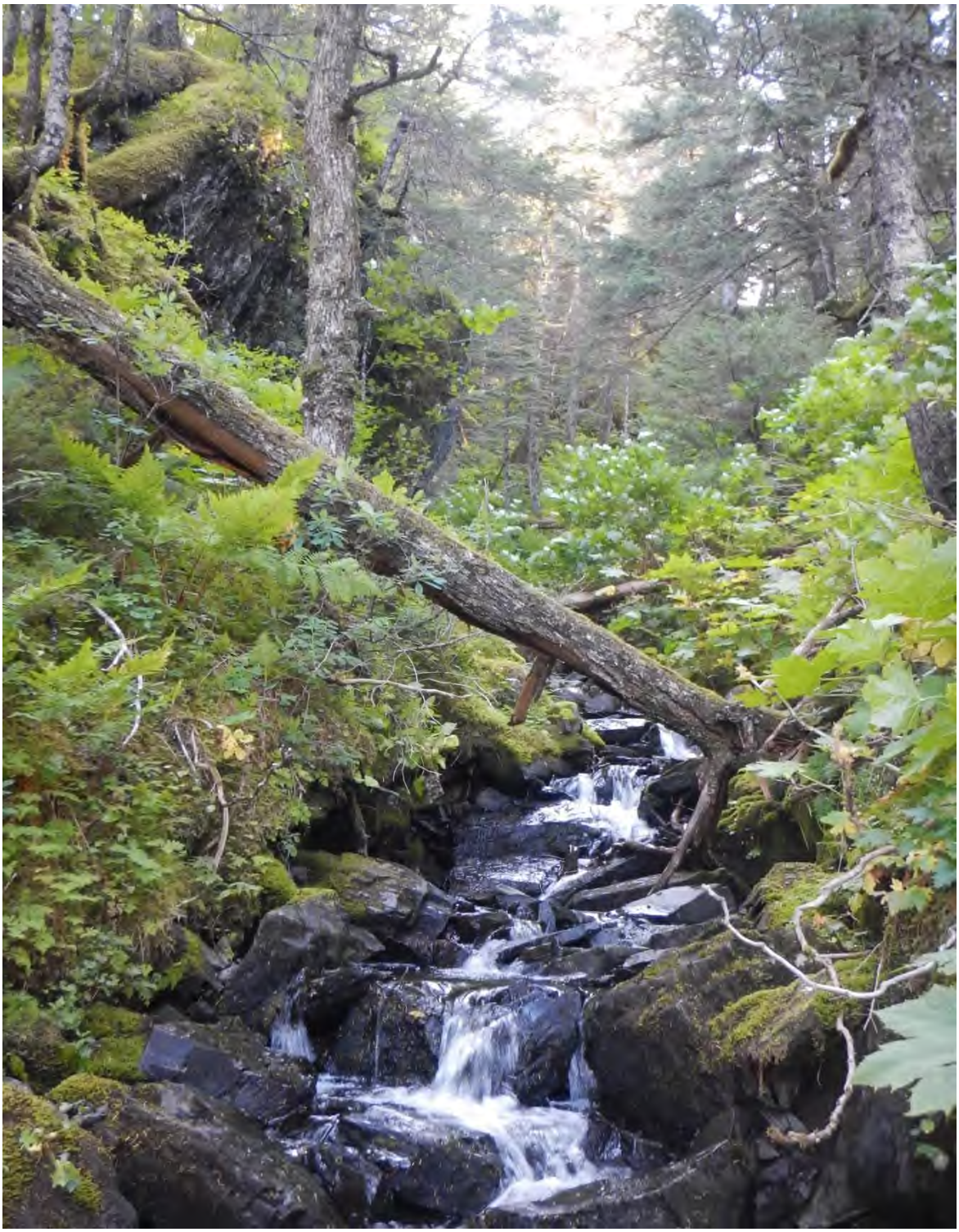

Figure 11. Stream #7 stream gradient. View looking upstream.

Figure 12. Stream #10, view looking downstream.

Figure 13. Stream #11 foot bridge upstream of barrier.

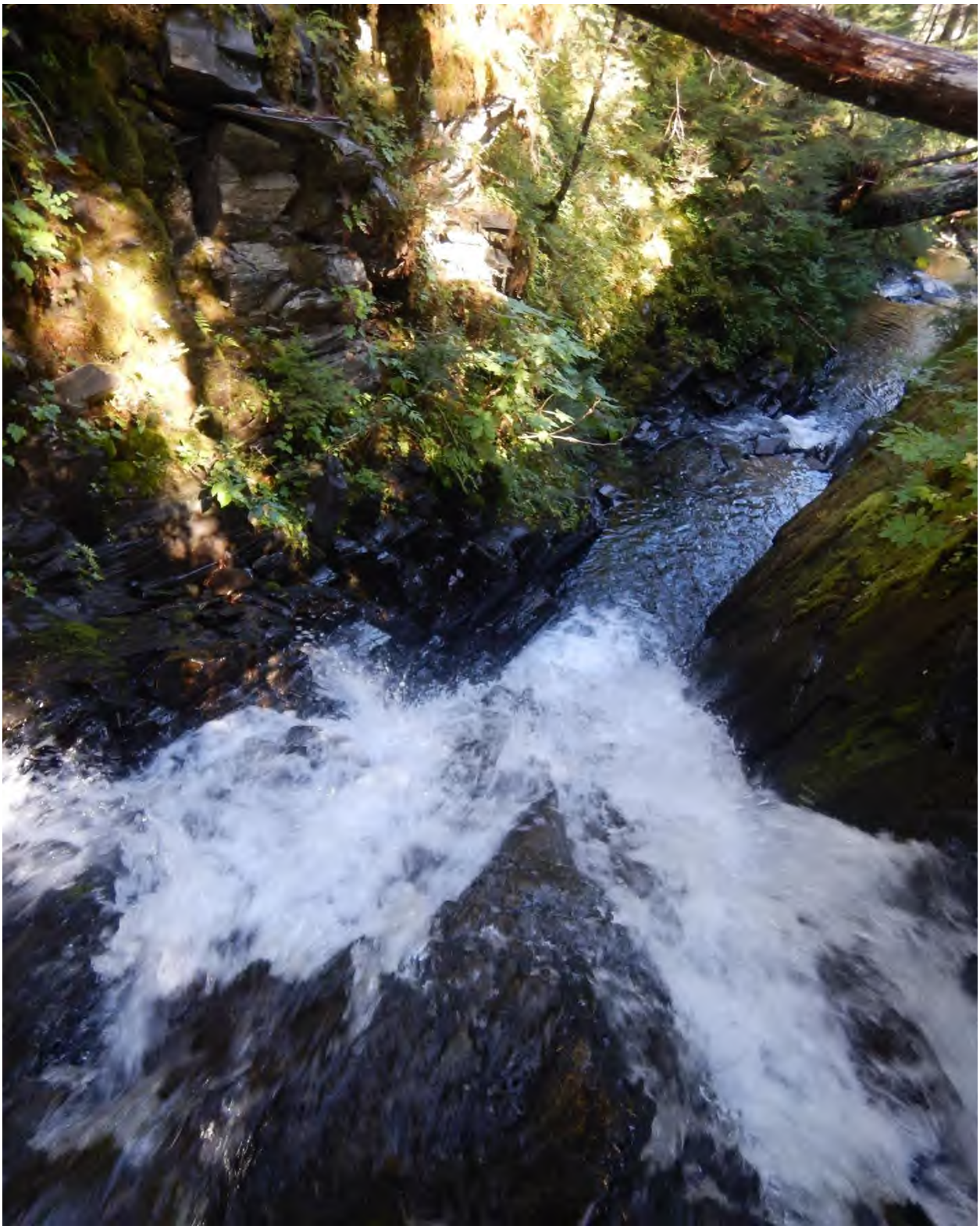

Figure 14. Stream #11 barrier.

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MEMORANDUM

State of Alaska

Department of Fish and Game
Division of Habitat

TO: Ronald Benkert
Central Region
Regional Supervisor

DATE: October 15, 2018

SUBJECT: Trip Report Shotgun Cove Road
October 2018

FROM: Will Frost WF
Habitat Biologist

PHONE NO: 267-2813

On October 8, 2018, I joined Olivia Cohn, Solstice Alaska Consulting in Whittier to conduct a fish presence/absence investigation for the proposed Shotgun Cove Road Extension project. The purpose of the project is to increase access to the City of Whittier and U.S. Forest Service lands for recreational opportunities. The proposed road will terminate near Trinity Point. Two road options are identified as the "low" road and "high" road. The weather conditions were sunny and cool.

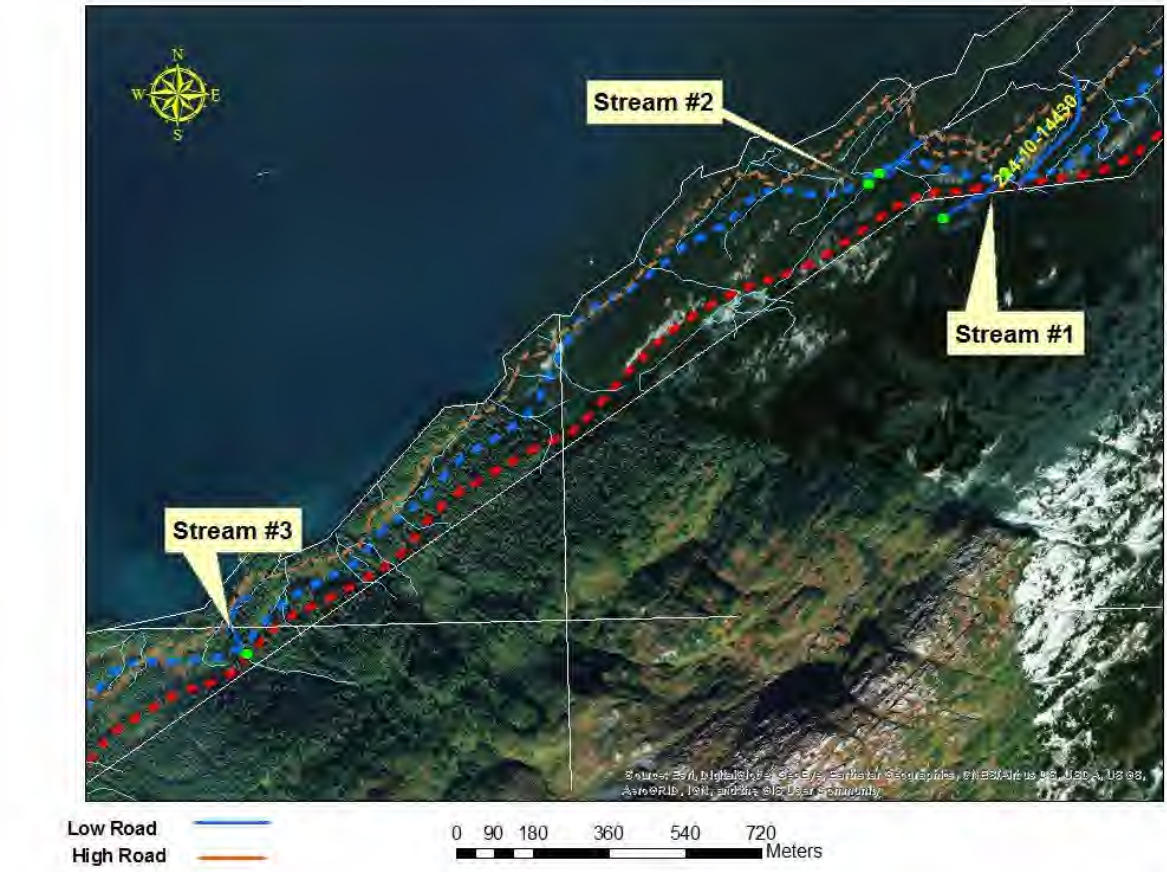
On the morning of October 8, Ms. Cohn and I drove to the end of the existing Shotgun Cove Road. We walked the Emerald Cove Trail to Emerald Cove and sampled three streams that flow into Emerald Bay and Passage Canal that may provide habitat to support anadromous or resident fish (Map 1). Twelve streams were sampled in August 28, 2018 (Map 2).

Stream #1 We began sampling using an electrofisher about 200 meters upstream of the specified reach of Steam No. 224-10-14430. The stream flows into Emerald Bay. We sampled 420 meters upstream of a 12-meter high barrier near the location of the proposed low road crossing at 60.800 N, 148.580 W (Figure 1). We captured or observed about 15 Dolly Varden (Figure 2). The proposed road crossing will require a bridge or culvert designed for fish passage.

Stream #2 is located at 60.800 N, 148.585 W. We sampled upstream 200 meters from tidewater (Figure 3). The stream flows into Emerald Bay. We captured 5 Dolly Varden and 4 sculpin. The proposed road crossing will require a bridge or culvert designed for fish passage.

Stream #3 is located at 60.790 N, 148.613 W. We sampled 90 meters upstream from the 9-meter high barrier to the proposed high road crossing (Figures 4 and 5). The stream flows into Passage Canal. The stream gradient was >25%. No salmonids were captured or observed. We walked downstream to a gradient barrier located adjacent to tidewater. Adult pink salmon were

observed below the gradient barrier during the August 2018 fish survey. We sampled upstream 115 meters to the 9-meter high barrier (Figure 6). No salmonids were captured or observed between the two barriers. The proposed road crossing will not require a bridge or culvert designed for fish passage.



Map 1. October 8, 2018 survey.

Map 2. August 28, 2018 survey.

Figure 1. Mr. Frost sampling upstream of the specified reach of Steam No. 224-10-14430.

Figure 2. Dolly Varden captured upstream of the specified reach of Steam No. 224-10-14430.

Figure 3. Sampling unnamed stream flowing into Emerald Bay.

Figure 4. Nine meter high barrier. View looking downstream.

Figure 5. Sampling upstream of the nine meter high barrier.

Figure 6. Sampling below the nine meter high barrier.

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MEMORANDUM

State of Alaska

Department of Fish and Game
Division of Habitat

TO: Ron Benkert
Central Regional Supervisor

DATE: September 5, 2019

THRU: Megan Marie
Habitat Biologist

SUBJECT: Trip Report Shotgun Road

FROM: Will Frost
Habitat Biologist

PHONE NO: 267-2813

On August 29, 2019, I joined Carrie Connaker, Solstice Alaska Consulting in Whittier to conduct a fish presence/absence investigation for the proposed Shotgun Cove Road Extension project. The purpose of the project is to increase access to the City of Whittier and U.S. Forest Service lands for recreational opportunities. A revised road layout proposal will terminate the road at Trinity Point (Figure 1). Two additional fish investigations were conducted in August and October 2018. During the October survey, two streams were located that support Dolly Varden and one stream was located downstream of the project area that supports pink salmon (Water Body No. 224-10-14426). The weather conditions were sunny, warm and hazy. The Prince William Sound area has had below normal rain for the past two months.

On the morning of August 29, Ms. Connaker and I drove to the end of the existing Shotgun Cove Road. We walked the Emerald Cove Trail to Trinity Point and sampled four streams that flow into Emerald Bay and Passage Canal that may provide habitat to support anadromous or resident fish (Figure 2). The first stream is located at 60.8034 N, 148.5700 W. The stream width is about 1 meter wide and was dry and with marginal fish habitat. The second stream is located at 60.8038 N, 148.5672 W. The stream width was variable up to 3 meters wide (Figure 3). I set one baited minnow trap in the lower reach at the proposed road crossing (Figure 4). The trap soaked about one hour. No fish were captured or observed. We walked the stream to the outlet at Passage Canal (Figure 5). The stream channel was dry at the outlet. The third stream is located at 60.8054 N, 148.5618W. The stream width was less than one meter wide. About 40 stickleback were observed in pool habitat. The fourth stream was less than one meter wide and was dry. We walked downstream to a pond (Figure 6). The pond was isolated from tidewater. I observed about 10 stickleback in the pond. The road crossing structures will not be required to provide fish passage.

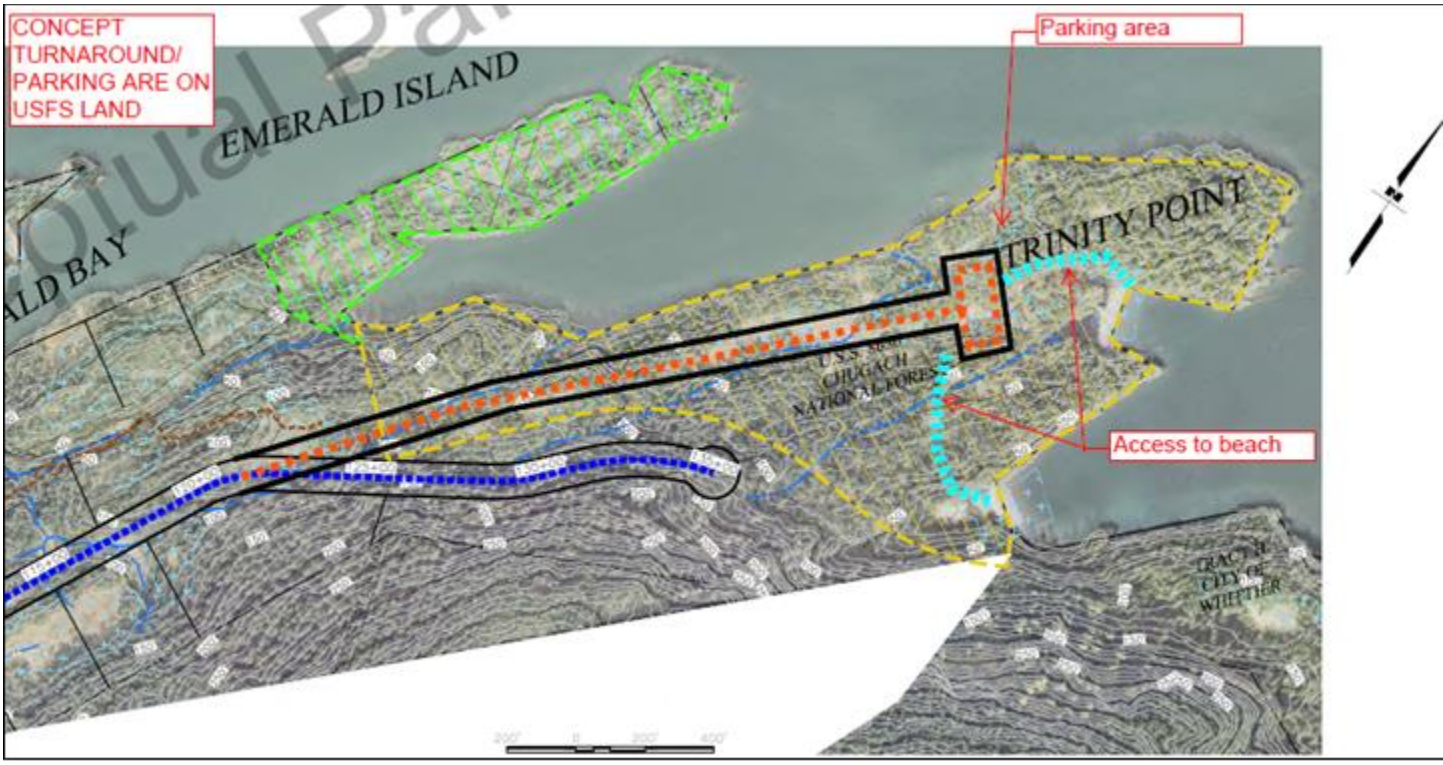

Figure 1. Road terminus, Trinity Point. Diagram courtesy Solstice Alaska Consulting.

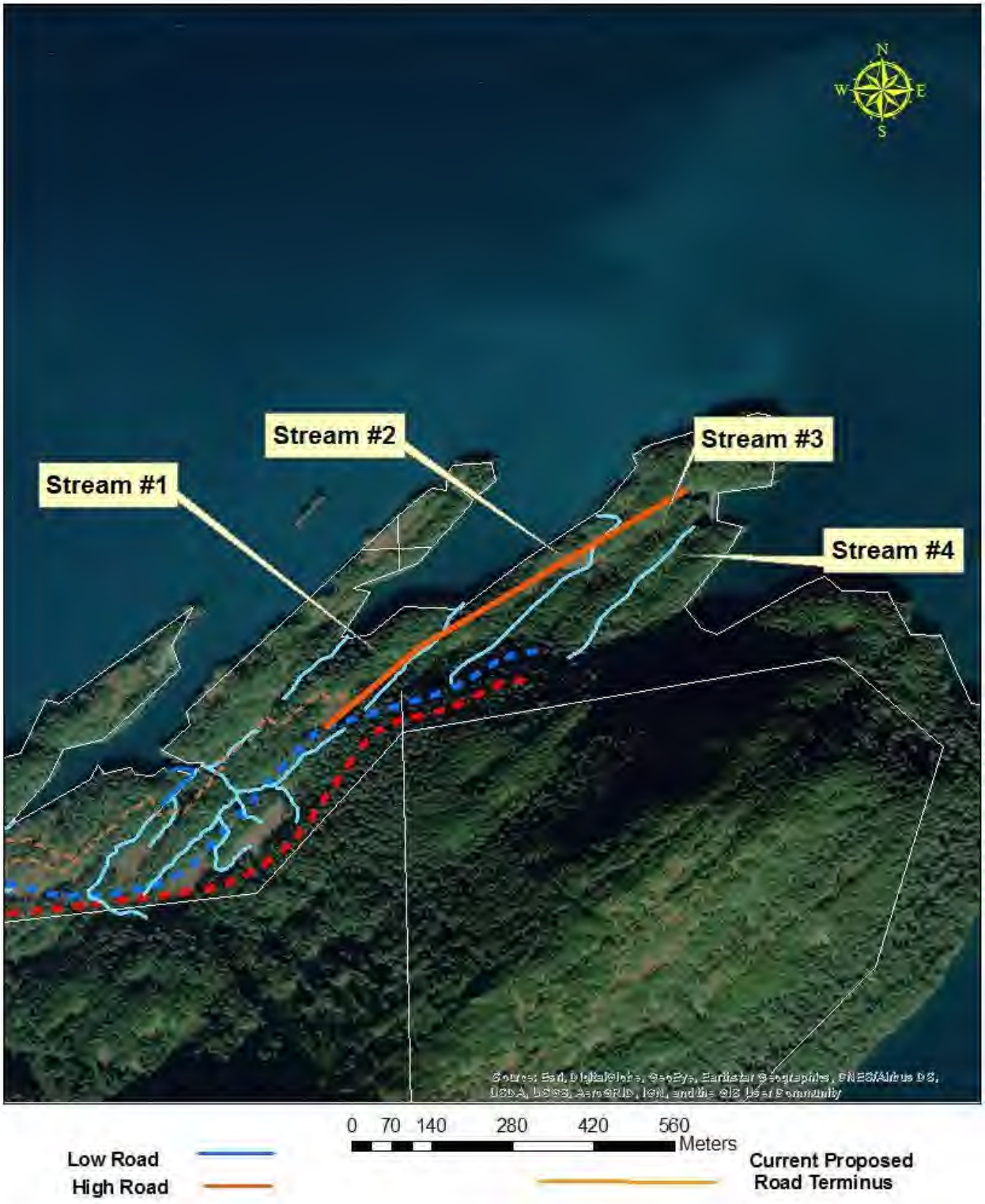

Figure 2. Four streams at the end of the project area.

Figure 3. The second stream, view looking downstream.

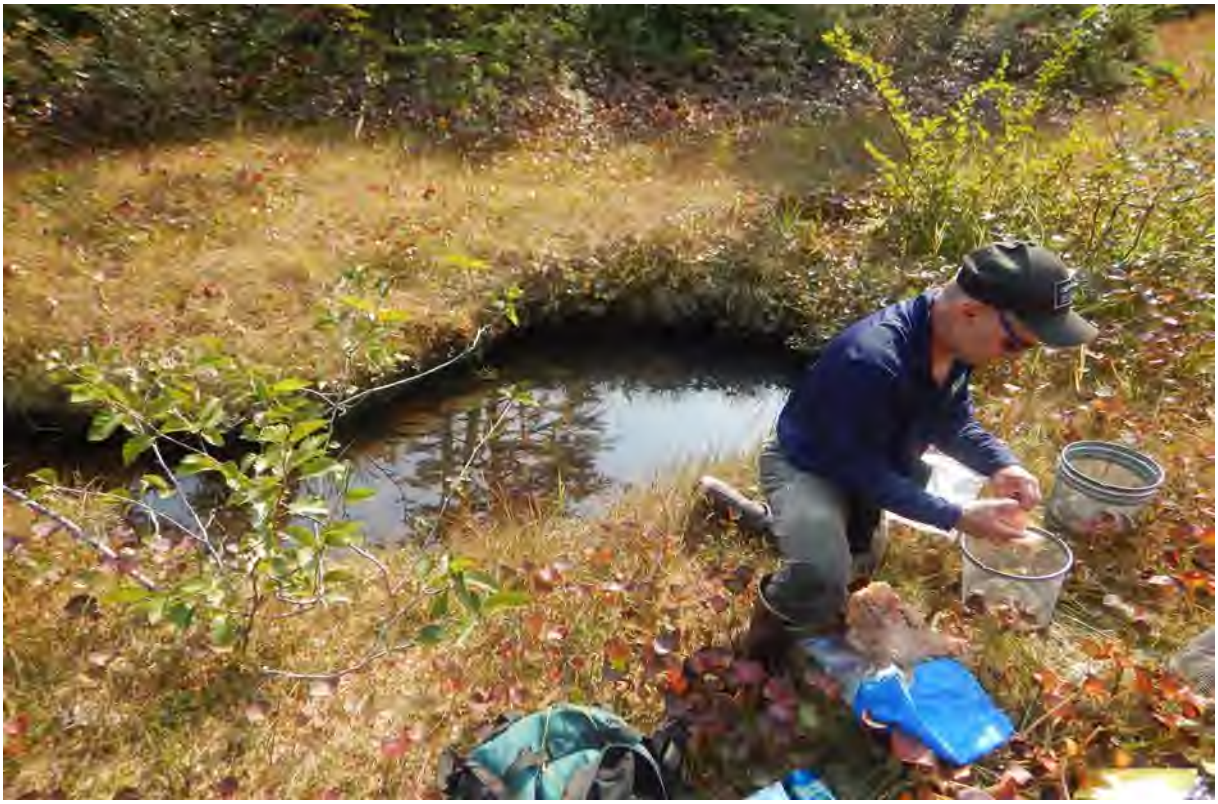

Figure 4. Mr. Frost setting a minnow trap in the second stream.

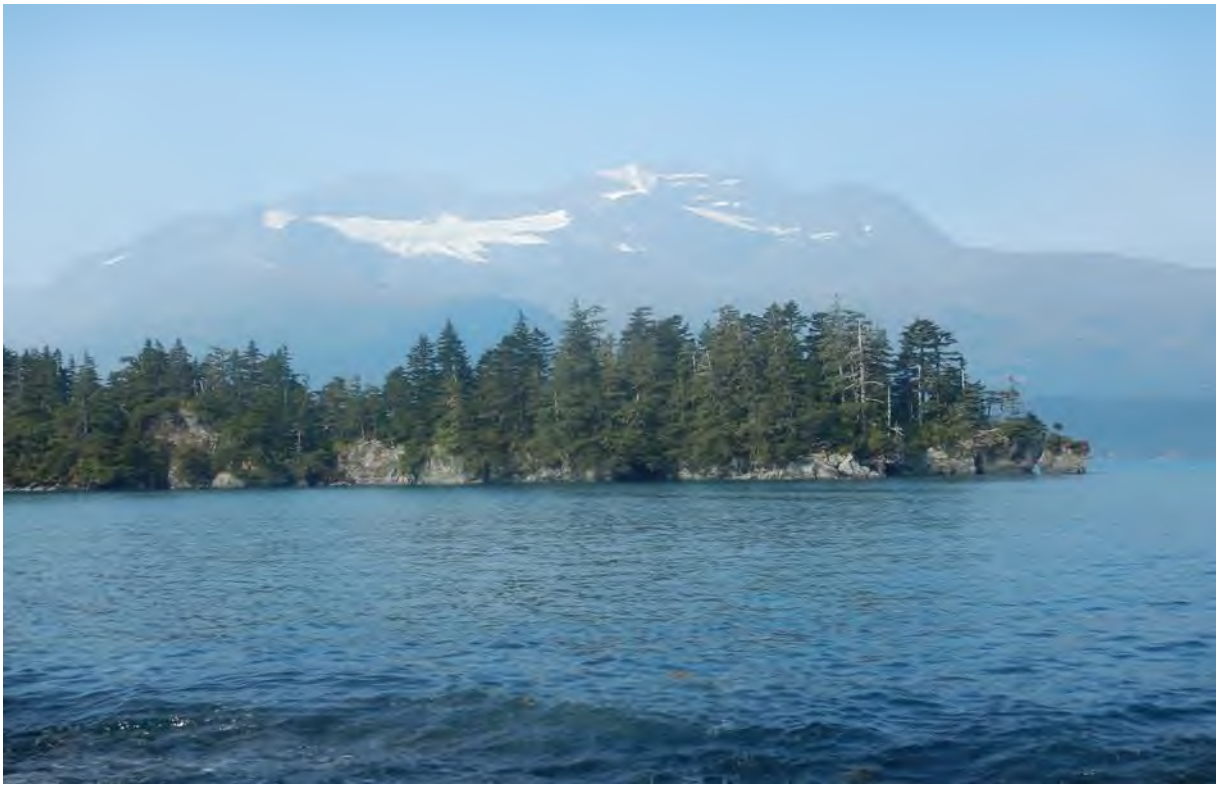

Figure 5. Passage Canal. View looking north.

Figure 6. Pond located adjacent to tidewater.

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