

G. Fish and Wildlife

N/A YES NO

consultation.

- c. Project within 660 feet of an eagle nesting tree? *If yes, consult with USFWS National Bald Eagle Management Guidelines and attach documentation of consultation.* *
- d. Will the project require blasting or other activities that produce extreme loud noises within 1/2 a mile from an active nest? *If yes, consult with USFWS National Bald Eagle Management Guidelines and attach documentation of consultation.* *

5. Summarize adverse fish and wildlife impacts.

Fish

Culvert replacements are proposed in three fish-bearing streams (Bear, Subdivision, and Ball Field Creeks) to improve fish passage, as described in more detail below.

In 2006, Inter-Fluve Inc. was contracted by DOT&PF to conduct a stream habitat inventory and shoreline assessment of the project area and prepare a report documenting the assessment. According to Inter-Fluve's 2007 report (Appendix D) there are two fish bearing streams in the project area that provide salmon habitat, which is defined by the National Marine Fisheries Service (NMFS) as Essential Fish Habitat under the Magnuson-Stevens Fishery Conservation and Management Act. Essential Fish Habitat will not be impacted by the proposed project because no in-stream work in Bird or Indian Creek is proposed.

Bird Creek at MP 101.5 is listed in the ADF&G Atlas to the Catalog of Waters Important to Spawning, Rearing, or Migration of Anadromous Fishes (AWC# 247-60-10280) and supports Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), chum salmon (*Oncorhynchus keta*), pink salmon (*Oncorhynchus gorbuscha*), and eulachon (*Thaleichthys pacificus*). Bird Creek supports the largest pink salmon sport fishery in the Anchorage area. Pink salmon return to Bird Creek in July and early August each year. Bird Creek is also a large contributor to the chum, stocked Coho and Dolly Varden fishing harvest in the Anchorage area. Pink and chum salmon outmigration is not known, but they typically emerge in early to late spring and immediately move out to sea.

Indian Creek is listed in the ADF&G Atlas to the Catalog of Waters Important to Spawning, Rearing, or Migration of Anadromous Fishes (AWC# 247-60-10290) and supports natural runs of Chinook and pink salmon. Coho salmon are present in the system, but are thought to be strays from Bird Creek (Dan Bosch, ADF&G, agency meeting August 1, 2006). There have been no studies on Chinook outmigration, but it is likely to occur in May and June. Pink salmon fry typically emerge in early to late spring and begin outmigration soon thereafter. Currently the railroad culverts are perched during low tide making migration at that time highly unlikely.

Non-Cataloged Streams - Inter-Fluve's 2007 report also documents four additional creeks within the project area, including Bear, Subdivision, Ball Field and Roadside Creeks, all of which flow through the project area and empty directly into Turnagain Arm. None of the creeks are currently listed in the ADF&G Atlas to the Catalog of Waters Important to Spawning, Rearing, or Migration of Anadromous Fishes. However, Inter-Fluve's 2007 report documented the presence of Dolly Varden in both Bear and Subdivision Creeks, and ADF&G staff noted during the August 1, 2006, agency meeting that they had previously trapped Dolly Varden in both creeks as well.

At the time of Inter-Fluve's 2006 field investigation, fish presence was not documented in the Ball Field or Roadside Creeks. Ball Field Creek, which is fed by a large wetland complex north of the Seward Highway between MP 102.3 and MP 102.7, is thought to have the potential to provide high quality spawning and rearing habitat. The lack of a defined channel through the upper intertidal zone, combined with a perched pipe at the railroad crossing may prevent fish from accessing the stream, however, the stream does have the potential to be a highly productive system for fish rearing. No char or salmon spawning habitat was observed within Roadside Creek, and it was noted that there was no upstream habitat available for fish use.

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N/A YES NO

Fish Pass Design - Replacement culverts will be designed using Tier 1 design methods, as outlined in the MOA between DOT&PF and ADF&G and will meet all fish passage criteria. Fish pass design will simulate typical adjacent stream conditions for all three proposed culvert replacements. This will provide favorable continuity of stream processes and passage of fish through the culvert. In order to simulate stream conditions, stream substrate will be placed in the bottom of each culvert to fill a minimum of 20 percent of the rise. Through engineering methods, the size of stream substrate will be designed to be dynamically stable for flows up to a 50-year flood. The gradation of the stream substrate will be designed using guidelines published by Washington Department of Fish and Wildlife (WDFW) to replicate gradations of naturally occurring substrate.

Proposed culvert replacements would cause short-term minor impacts to any fish present. These minor impacts would be minimized through Best Management Practices (BMPs) designed to reduce the risk of adding sediment to the streams, working within ADF&G's recommended windows (July 1 through September 1) and limiting stream closures. The long-term effect of the larger culverts would be a net benefit to fish by improving migration corridors and access to upstream habitat. Additional mitigation measures and Best Management Practices that would be implemented to minimize impacts to fish during construction are outlined in Section VI - Environmental Commitments and Mitigation Measures.

Additional information regarding the proposed culvert replacements is included in Section I, Water Body Involvement, below. Title 16 Fish Habitat Permits will be obtained from ADF&G prior to beginning in-stream work.

Wildlife Resources

Areas surrounding the project corridor include Turnagain Arm to the south and Chugach State Park to the north. The project would not change current traffic patterns beyond adding passing lanes between MP 99 and MP100. As such, the project is not anticipated to impact wildlife populations, as a road already exists in this location.

About 80 species of birds have been identified in Chugach State Park (ADNR, 1980). Many groups of resident and migratory birds reside within the project area including geese, ducks, shorebirds, raptors, and passerines. The following bird species which may inhabit the project area are listed on the ADF&G online listing of Species of Special Concern: American and Arctic Peregrine Falcon, Northern Goshawk, Olive-sided Flycatcher, Gray-cheeked Thrush, and the Townsend's Warbler. The proposed project involves vegetative clearing, but is not expected to adversely impact bird habitat. The clearing will occur in areas where the paved multi-use trail will be constructed between MP 103 and MP 104. Additional Clearing will be needed in the area of the pedestrian underpass at the Indian Creek Bridge. To avoid a direct take or conflict with nesting migratory birds, the contract specifications would require vegetation clearing to occur before May 1 and after July 15, unless an alternate measure is approved by the United States Fish and Wildlife Service (USFWS).

Eagles

A search of the USFWS Alaska Bald Eagle Nest Atlas on July 15, 2010, indicated no Bald Eagle nests have been identified within the project vicinity. One Bald Eagle nest was found in the project area during a USFWS survey in 1994, 1998, and 2005, but USFWS said this information is outdated (telephone conversation July 15, 2010, with Scott Frickey of USFWS).

H. Threatened and Endangered (T&E) Species

N/A YES NO

- | | | | |
|---|--------------------------|--------------------------|-------------------------------------|
| 1. Listed threatened or endangered species present. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Threatened or endangered species migrate through the project area. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Proposed species present in project area. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

H. Threatened and Endangered (T&E) Species

- | | N/A | YES | NO |
|---|-------------------------------------|--------------------------|-------------------------------------|
| 4. Candidate species present in project area. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Project is likely to adversely affect a listed T&E species or critical habitat. <i>If yes, formal Section 7 consultation is required, and the project may not be assigned to the State per SAFETEA-LU Section 6004 and the CE must be sent to FHWA for approval.</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Summarize the findings of the biological assessment and the biological opinion of the agency with jurisdiction. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Early coordination in 2006 with USFWS confirmed there were no federally-listed threatened or endangered species in the project corridor. A review of the USFWS T&E species listing on September 1, 2010, indicates no T&E species or critical habitat in the project area. Since the initial coordination the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) listed the Cook Inlet population of beluga whales (*Delphinapterus leucas*) as endangered on October 22, 2008. Cook Inlet is adjacent to the project corridor to the south; however, this project is not anticipated to have a short-/long-term, or cumulative effect on the beluga whales. NMFS concurred with this assessment and confirmed that they would not require formal Section 7 consultation or a Biological Assessment (see attached correspondence in Appendix H, Page 214).

I. Water Body Involvement

- | | N/A | YES | NO |
|--|--------------------------|---------------------------------------|-------------------------------------|
| 1. Project affects a water body. | <input type="checkbox"/> | <input checked="" type="checkbox"/> * | <input type="checkbox"/> |
| 2. Project affects a navigable water body as defined by the U.S. Coast Guard (USCG) (i.e., Section 9). | <input type="checkbox"/> | <input type="checkbox"/> * | <input checked="" type="checkbox"/> |
| 3. Project affects Waters of the U.S. as defined by the USACE (i.e., Section 404). | <input type="checkbox"/> | <input checked="" type="checkbox"/> * | <input type="checkbox"/> |
| 4. Project affects Navigable Waters of the U.S. as defined by the USACE (i.e., Section 10). | <input type="checkbox"/> | <input type="checkbox"/> * | <input checked="" type="checkbox"/> |
| 5. Project affects a resident fish stream (i.e., Alaska Statute A.S. 16.14.841). | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6. Project affects a cataloged anadromous fish stream (i.e., A.S. 1;6.14.871). | <input type="checkbox"/> | <input type="checkbox"/> * | <input checked="" type="checkbox"/> |
| 7. Project affects a designated Wild and Scenic River or land adjacent to a Wild and Scenic River. <i>If yes, the Regional Environmental Manager should consult with the Statewide NEPA Manager for 6004 (assigned CEs) or FHWA Area Engineer (non-assigned CEs) to determine applicability of Section 4(f).</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Proposed river or stream involvement: Bridge <input type="checkbox"/> Culvert <input checked="" type="checkbox"/> Embankment Fill <input checked="" type="checkbox"/>
Relocation <input checked="" type="checkbox"/> Diversion <input checked="" type="checkbox"/> Temporary <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> N/A <input type="checkbox"/> | | | |
| 9. Type of stream or river habitat impacted: Spawning <input checked="" type="checkbox"/> Rearing <input checked="" type="checkbox"/> Pool <input type="checkbox"/>
Riffle <input type="checkbox"/> Undercut bank <input type="checkbox"/> N/A <input type="checkbox"/> | | | |
| 10. Amount of fill below: OHW 11,100 cubic feet MHW HTL | | | |
| 11. Describe impacts and significance: | | | |

The water bodies in the project area consist of five streams (Bird Creek, Indian Creek, Bear Creek, Ball Field Creek, Subdivision Creek, and Roadside Creek), as described above in more detail (see Section G). Culvert replacements are proposed in Bear, Ball Field, and Subdivision Creeks. The August 2007 Hydrologic and Hydraulic Report includes a rapid assessment of all culverts through the highway embankment along the

I. Water Body Involvement

N/A YES NO

project corridor (Appendix E). Existing culverts are in poor condition and don't meet current fish passage criteria. (Other culverts and bridges assessed in the 2007 report were in good condition and are not recommended for replacement at this time.) Replacement culverts will be designed in accordance with the MOA between DOT&PF and the Alaska Department of Fish and Game (ADF&G) and will meet all fish passage criteria.

Estimated fill quantities have been calculated so that all necessary permits can be obtained prior to construction. Estimations were made of the existing fill quantities placed below the ordinary high water mark (OHW) as bedding material, and constructing the new culverts and placement of stream simulation material. The fill quantity estimates are presented below for each culvert, and are summarized in Table 1, below.

Bear Creek

The existing stream alignment passes through a 133-foot, 48-inch diameter CMP at the Seward Highway embankment. Fill material placed below OHW associated with the current culvert design is estimated to include 266 cubic yards (cy) of bedding material.

According to Inter-Fluve's 2007 *Hydrologic and Hydraulic Summary Report* (H&H Report) preliminary design indicated that the existing culvert should be replaced with a 133-foot long, 6'-1" by 4'-7" pipe arch. The new pipe arch culvert will include 3,800 cy of bedding. In addition, 1,150 cy fill material (rock) will be placed onto the interior of the culvert to simulate stream substrate. Total fill placed below the OHW will be approximately 4,950 cy.

Ball Field Creek

The existing stream alignment exit a wetland complex, upstream of Seward Highway, and then flows through a 101.5-foot long, 24-inch diameter CMP culvert at the Seward Highway embankment. Existing fill placed below the OHW consists of approximately 101.5 cy of bedding material.

According to Inter-Fluve's 2007 *Hydrologic and Hydraulic Summary Report* (H&H Report) preliminary design indicated that a 101.5-foot long, 5'-6" by 4'-3" pipe arch is recommended as the replacement at this crossing. The new pipe arch culvert will include 2,700 cy of bedding. In addition, 850 cy fill material (rock) will be placed onto the interior of the culvert to simulate stream substrate. Total fill placed below the OHW will be approximately 3,550 cy.

Subdivision Creek

The existing stream alignment flows from a subdivision area near the Indian House Restaurant and through two driveway embankments prior to flowing through a 79-foot long, 24-inch diameter CMP culvert at the Seward Highway embankment. A 6-foot waterfall exists downstream of the Seward Highway that blocks fish from entering the stream from the intertidal zone of Turnagain Arm. Although fish passage appears to be blocked below the railroad culvert, resident Dolly Varden have been trapped between the railroad and Seward Highway, therefore, the ADNR (responsible agency at that time) requested fish passage be provided through any new culverts.

According to Inter-Fluve's 2007 *Hydrologic and Hydraulic Summary Report* (H&H Report) preliminary design indicated that a 79-foot long, 4'-9" by 3'-2" pipe arch culvert, countersunk to 1-foot depth to convey flows and provide fish passage is recommended as the replacement at this crossing. The new pipe arch culvert will include 2,100 cy of bedding. In addition, 500 cy fill material (rock) will be placed onto the interior of the culvert to simulate stream substrate. Total fill placed below

I. Water Body Involvement

N/A YES NO

the OHW will be approximately 2,600 cy.

In order to provide for fish passage through the highway embankment, the slope of the existing highway culvert needs to be reduced. In order to avoid impacting the conveyance capacity along the ARRC embankment, and tie into the existing channel upstream, modifications to the stream alignment and profile are necessary. This new alignment limits the length of the channel required to match to existing grade at the upstream and downstream ends. In order to maintain conveyance, the stream will be moved to the west approximately 45-feet to be closer to the ARRC culvert inlet. Although a minor reduction in stream length would occur, the improvements are expected to provide a more efficient system that otherwise does not exist and would result in a benefit to the stream's functionality.

Table 1, below provides a summary of the existing and proposed fill to be placed below the OHW for each of the three culverts as a result of this project.

Table 1: Existing and Proposed Fill Quantities

Culvert	Existing Fill	Proposed Fill Culvert Bedding	Proposed Fill Stream Simulation	Total Fill Volume in Cubic Feet (CY)
Ball Field Creek	101.5	2700	850	3550± CY
Bear Creek	266	3800	1150	4950± CY
Subdivision Creek	79	2100	500	2600± CY

Wetlands (see also Section F): A total of 13 wetland and waterway habitats were identified in the *Wetlands Delineation, Functions and Values Assessment, Vegetation Classification, and Wildlife Habitat Assessment* for this project (Appendix C). The jurisdictional determination was approved by the USACE on January 26, 2009 (Appendix C).

A search of the USACE webpage dedicated to Navigable Waters of the U.S. on July 1, 2010, indicated no navigable waters within the project area. No rivers within the project area are listed on the Wild and Scenic Rivers Inventory according to the National Park webpage, searched July 1, 2010.

J. Alaska Coastal Management Program (ACMP)

N/A YES NO

- 1. Project is within the ACMP boundary. N/A YES NO
- 2. Project is within a local coastal management district. *If yes, consult with the local coastal management official and attach correspondence.* N/A YES NO
- 3. Project is consistent with local and state coastal management plans. *If no, the project cannot be approved as proposed.* N/A YES NO
- 4. Finding:
The Alaska Coastal Management Plan (ACMP) maps show the project area lies completely within the MOA Coastal District, and within an Area Meriting Special Attention - the Seward Highway and Turnagain Arm Scenic Corridor. The ACMP describes the area and its purpose and value as follows:

"The Seward Highway serves those portions of population concentrated south of the

J. Alaska Coastal Management Program (ACMP)

N/A YES NO

Anchorage Bowl, generally along the Seward Highway, and extending to Portage at the southern corporate boundary. The corridor offers numerous scenic vistas, includes glacial valleys, glaciers, a variety of vegetation types, a change in ecosystems, and a variety of wildlife species. Several streams cross the highway and offer fishing opportunities.

The recreation, scenic, heritage, or wilderness significance of the area was first formally recognized by the United States Secretary of the Interior in 1958. In addition, many historical and archaeological sites are found adjacent to the Seward Highway. The area can be described as an area of unique, scarce, fragile, or vulnerable natural habitat, physical features, and scenic importance."

This project will not affect the area's purpose and value, or any of its characteristics that make it an AMSA.

The ACMP maps also identify the following sites within the project area that have specific "enforceable and administrative policies and management strategies" as part of the Anchorage Coastal Management Plan:

- South Indian
- Bird Creek Floodplain
- Bird Creek Valley
- South of Bird - Roadside
- Small Sites - Roadside

The proposed project will not affect any of these sites.

DOT&PF has determined that the project is consistent with the ACMP Statewide Standards and the enforceable policies of the Anchorage Coastal Management Plan and will submit a Costal Project Questionnaire to ADNR Division of Coastal and Ocean Management for a formal consistency review. Coordination with the local coastal management office was done through a series of meetings. See App H.

K. Hazardous Waste (HW)

N/A YES NO

- | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|
| 1. There are known or potentially contaminated sites along the corridor. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. The existing or proposed ROW is contaminated. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Extensive excavation is proposed adjacent to, or within, a known HW site. | <input type="checkbox"/> | <input type="checkbox"/> * | <input checked="" type="checkbox"/> |
| 4. Potential for encountering HW during construction is high. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Summarize impacts of any 'yes' marked in 1-4 and attach appropriate HW investigation report. | | | |

A Phase I Environmental Site Assessment for the project corridor was conducted in September 2006 (Appendix F). The assessment revealed the Essential Gas Station, which is immediately adjacent the existing Seward Highway at MP 101, is the only potential contaminated site within the project area. The proposed project would not involve excavation or ground disturbance in the area of this site; therefore, no encounters with contamination are anticipated.

A review of the ADEC on-line Contaminated Sites Database indicates there are two other sites within a one-mile radius of the project that at one time showed contaminated soil and groundwater. The sites are the Indian Alaska Communications Systems Substation and the Defense Energy Indian Booster Pump Station. The ADEC database currently lists the status of these two sites as "cleanup complete." No additional sites of contamination are known to exist in or adjacent to the project.

- | L. Air Quality (Conformity) | N/A | YES | NO |
|--|-------------------------------------|--------------------------|-------------------------------------|
| 1. The project is located in an air quality maintenance area or nonattainment area (CO or PM-10). <i>If yes, indicate CO <input type="checkbox"/> or PM-10 <input type="checkbox"/> and complete the remainder of this section. If no, continue to next section.</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. If applicable, the project is included in a conforming Long-Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) (state dates of FHWA/Federal Transportation Administration conformity determination). Date:
_____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. The project is exempt from an air quality analysis per 40 CFR 93.126 (Table 2 and Exempt Projects). If yes, continue to next section. If no, complete the remainder of this section. Note: A project-level air quality conformity analysis is required for CO nonattainment and maintenance areas and a qualitative project-level analysis is required for PM-10 nonattainment and maintenance areas. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Have there been any significant changes in the design, concept, and/or scope as discussed in the most recent conforming TIP and LRTP? <i>If yes, describe changes in No. 7. In addition, the project must satisfy the conformity rule's requirements for projects not from a plan and TIP, or the plan and TIP must be modified to incorporate the revised project (including a new conformity analysis).</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. If required, a CO project-level analysis was completed meeting the requirements of Section 93.123 of the conformity rule. The results satisfy the requirements of Section 83.116(a) for all areas, or 93.116(b) for nonattainment areas. <i>Attach a copy of the analysis.</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. If required, a PM-10 project-level air quality analysis was completed meeting the requirements of Section 93.123 of the conformity rule. The results satisfy the requirements of Section 93.116(a). (The thresholds are different for PM-10 than they are for CO). <i>Attach a copy of the analysis.</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Summarize air quality impacts:
The proposed project is outside the MOA Carbon Monoxide (CO) air quality maintenance area. During construction there would be a temporary increase in airborne particulate levels and emissions from heavy equipment. Long-term air quality would not be affected by this project. | | | |

- | M. Floodplains Impacts (23 CFR Part 650, Subpart A) | N/A | YES | NO |
|--|--------------------------|---------------------------------------|-------------------------------------|
| 1. Project encroaches longitudinally into the 100-year floodplain (i.e., base floodplain in fresh or marine waters). <i>If yes, public comments on the action must be requested and comments received attached. Summarize the findings and attach the "Location Hydraulic Study" developed per 23 CFR 650.111.</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Project encroaches into a regulatory floodway. <i>If yes, attach the "Location Hydraulic Study."</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> * | <input type="checkbox"/> |
| 3. The proposed action would increase the base flood elevation one foot or greater. <i>If yes, attach the "Location Hydraulic Study."</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. The encroachment is significant as defined by 23 CFR 650.105. If yes, the project cannot be approved as proposed without a finding that the proposed action is the "Only Practicable Alternative" as defined in 23 CFR 650.113. Attach the finding for approval. | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Project conforms to local flood hazard ordinances. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |