# Chapter 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

For the purpose of this EA, the project area is the extent where the project would have direct impacts (see Chapter 1.4 and Figure 1-1). Indirect impacts are analyzed in this EA, even if they occur outside of the project area. This EA analyzes the environmental resource project impacts (e.g., transportation, land use, wildlife, and vegetation) that the project has potential to impact. This section is divided into subsections for the separate resources, and for each resource the following categories are described:

- Affected Environment
- Direct Impacts
- Indirect Impacts (as necessary)
- Cumulative Impacts (as necessary)
- Mitigation (as necessary)

## **Affected Environment**

The affected environment is the existing condition relevant to the specific environmental discipline. The affected environment section discusses, commensurate with the likelihood and extent of the potential impacts, the existing social, economic, and environmental settings surrounding the project. It also identifies environmentally sensitive features in the project corridor. Each environmental resource subsection describes the affected environment related to that specific resource.

#### **Direct Impacts**

Direct impacts are those effects caused by the construction or operation of the proposed action. They include potential impacts in the immediate project footprint. Temporary impacts are included in this section and include impacts due to construction, which will be for a finite period of time, likely less than two years.

#### **Indirect Impacts**

Indirect effects are caused by the action and occur separate from the proposed project by time or distance but are still reasonably foreseeable. Specific indirect impacts from the Proposed Action include development of private parcels, small-boat launch areas, and easier beach access (Figure 3-1). In general, the Proposed Action could generate long term changes to either human activity levels or land use in the action area because it is increasing roadway capacity and providing improved access within the project area.

## **Cumulative Impacts**

Cumulative impacts are defined as those effects of past, current, or future public or private activities that are reasonably certain to occur within project area, combined with the effects of the proposed action.



Figure 3-1. Anticipated Future Development Within the Proposed Action Area

The scope of a cumulative effects analysis is related to the magnitude of the impacts of the proposed action. If a project does not have permanent adverse impacts on a particular resource, the project cannot contribute to cumulative effects on that specific resource. Therefore, the majority of resources discussed in this EA were identified as no cumulative impact and dismissed from the cumulative effects analysis. Only those resources that the project would permanently adversely impact are included.

For this project the geographic scope includes actions within Whittier boundaries and the head of Passage Canal. Past actions start when land between the community and Shotgun Cove was transferred to City ownership and include the opening of the existing tunnel to vehicular (not just train) access into Whittier, the Small Boat Harbor Expansion Project, and construction of the City's new Public Safety Building. Currently in the planning or construction phases are the Whittier Harbor Navigation Improvements Project and Whittier Tunnel Resurfacing Project. Other potential future actions in Whittier were also considered in the analysis (Table 3-1).

Year(s)	Action	<b>Project Stage</b>
1994	State of Alaska land transfer to City <sup>1</sup>	Complete
2000	Anton Anderson Memorial Tunnel opens to vehicles <sup>1</sup>	Complete
2010	Small Boat Harbor Expansion <sup>1</sup>	Complete
2011	Whittier Trails Rehabilitation <sup>1</sup>	Complete
2011	Cruise Ship Floating Dock and Embarkation Building <sup>1</sup>	Complete
2017	New Public Safety Building <sup>2</sup>	Complete
2018	Phase I Shotgun Cove Road Construction <sup>1</sup>	Complete
2019	Whittier Tunnel Surface and Drainage Improvements <sup>3</sup>	Construction
2019	Ferry Terminal Modifications <sup>3</sup>	Design/Planning
Future	Head of the Bay (Passage Canal) Development <sup>1,4</sup>	Design/Planning
Future	ARRC Railway Infrastructure Improvements <sup>5</sup>	Planning

Fable 3-1.	Past,	Present,	and	Foreseeab	le Future	Actions in	Whittier
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Source: <sup>1</sup>City of Whittier 2020; <sup>2</sup>Lester 2017; <sup>3</sup>DOT&PF 2020a; <sup>4</sup>U.S. Army Corps of Engineers (USACE) 2018; <sup>5</sup>ARRC 2011

## Mitigation

Mitigation is defined as:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures for this project have been proposed to mitigate for impacts to the extent possible and are described in further detail below and summarized in Chapter 5.

# 3.1 Transportation and Access

## 3.1.1 Affected Environment

Whittier supports 280 permanent residents (Alaska Department of Labor and Workforce Development 2020) as well as visitors who pass through the Whittier Harbor, boat launch facility, AMHS ferry terminal entrance, ARRC freight gate, and Alaska Marine Lines truck terminal. Vehicle traffic is generated from these activities, and congestion occurs in downtown Whittier. The existing Shotgun Cove Road is an approximately two-mile unpaved road that extends east of downtown Whittier classified by the DOT&PF as a local road, providing access to homes or other property (DOT&PF 2020b). For this and all of Whittier's existing roadways, the City's Department of Public Works and Public Utilities is responsible for repairs, snow removal, and maintenance. The area beyond the road's terminus is undeveloped, and there are no existing roads that extend to the Forest Service-owned land near Trinity Point.

Presently, there is no existing roadway in the proposed project area. Residents and visitors access areas in the proposed project area on foot or via ATV, snow machine, or boat. The existing trail does not extend all the way to the federally-owned land near Trinity Point, and currently there is no marked access to this land.

Cruise ships, ferry vessels, commercial barges, sightseeing vessels, commercial fishing vessels, and personal use boats (including those berthed in harbors and brought in by trailer), kayaks, and sometimes jet skis create heavy marine traffic near Whittier in the summer. There are 360 boat slips and two boat launch ramps at the City-owned harbor and 99 boat slips at Cliffside Marina. In 2019, cruise ships visited Whittier every Wednesday and Saturday and one Sunday between mid-May and mid-September and there were near daily sailings of the state ferry vessels.

## 3.1.2 Environmental Consequences – No Action Alternative

Without construction of this project, the Forest Service land would remain inaccessible via road. Recreation access to the Passage Canal and Trinity Point areas would remain isolated; access to these areas would continue via foot, boat, or ATV. Traffic congestion around Whittier and Whittier Harbor would continue to be a problem during the busy summer months, potentially causing safety issues with vehicles in town and between non-motorized small watercraft sharing access points with much larger motorized boats.

# 3.1.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

The proposed road extension and access roads would provide vehicle access to Forest Service land and more points along Passage Canal. It is expected that recreators would drive the road to access trails, beaches, and other natural areas and recreational opportunities along the road and at Trinity Point. Most access will be limited to summer months when the road is maintained; however, in the winter, it is likely that the road would be used by snow machiners and crosscountry skiers. Currently, the existing portion of Shotgun Cove Road is maintained in the winter to Lu Young Park (approximately mile 0.4). The rest of the 1.6 miles of the road are not maintained in the winter and are used for snow machining, cross-country skiing, and other winter sports.

It is expected that the Proposed Action would reduce vehicle traffic around the Whittier harbor area. Small and personal watercraft could launch from more remote sites along the new road extension, relieving congestion and reducing the risks associated with interaction between small craft and cruise, ferry, and freight vessels. Delays to traffic or other transportation types during construction are not anticipated to be substantial due to the proposed project's location outside of downtown Whittier; however, there will be an increase in construction vehicles and equipment on local Whittier roads accessing the construction site.

Currently there is very low volume motor vehicle traffic in the winter (snow machines) and none in the summer because no road exists. Once the road extension and access roads are constructed and development occurs, the project area could experience more vehicular traffic to the Forest Service facilities at Trinity Point and seasonal privately-owned cabins along the roads. Estimated summer use of the proposed roadway is based on traffic projections used in the DSR and depends on type of development predicted along the corridor (Table 3-2).

Trip Generation – Recreational Lands								
Recreational Acres	25	5	50	75				
Daily Trips	57-103 114		-207	171-310				
Trip Generation - Residential								
Recreational Home Dwelling Unit	20	40	60	80				
Daily Trips	56-65	113-130	169-19	4 226-259				

Table 3-2.	Estimated	Trip	Generation	bv	Type of I	Use
	Listinated	r	Generation	$\sim J$	- , pe or .	

Adapted from: CRW 2018

The increased accessibility of 32 acres of Forest Service land at Trinity Point combined with the additional recreational areas designated along the corridor would generate an estimated 100 daily vehicle trips. Initially, the number of seasonal recreational cabins would remain low but would be expected to increase as private lots in the project area become available for sale by the City. Combined together, an estimated 200 to 250 daily trips could be expected. Even with this increase in traffic, the functional class of the roadway would not change. The Anton Anderson Memorial (Whittier) Tunnel, West Camp Road, Whittier Street, Blackstone Road, and the harbor area could experience more vehicle traffic as more people drive through town to access their properties.

It is possible that the project will provide safer conditions for kayaks and small craft users in Passage Canal since the road will enable more access to the water away from Whittier; however, developing more access points to Passage Canal could also lead to more boats on the water and potentially more conflicts between smaller crafts and larger vessels headed into and out of Whittier harbors and docks.

## **Cumulative Impacts**

The proposed project would not induce permanent adverse impacts to transportation in Whittier and therefore cumulative impacts analysis is not required for this resource.

To offset transportation- and access-related delays during construction, signage will be installed and public notices will be locally advertised (e.g., through direct mailers, newspaper advertisements, and locally-distributed posters) in advance of and during construction to inform the public regarding any delays or interruptions to area traffic.

# 3.2 Land Use

## 3.2.1 Affected Environment

Most of the property included in the proposed project limits is owned by the City with the exception of land surrounding about 1,000 linear feet of the road's terminus which is owned by the Forest Service (Chugach National Forest) and a very small area at the start of the road extension, which is owned by the State of Alaska.<sup>1</sup> The City received a 600-acre land grant from the State of Alaska under a Sessions Law of Alaska (SLA) in 1984, with the stipulation that the City make adjacent lands accessible and available for public sale (Chapter 73 SLA 1984). The land was transferred to the City in 1994 under two Alaska Division of Lands (ADL) conveyances (ADL 222791 and 225460). The land transferred includes coastal land along Passage Canal from Whittier to Trinity Point and coastal land along the shoreline of Shotgun Cove (ADNR 1994). A provision for a 100-foot-wide road right-of-way (ROW) easement from Whittier to Shotgun Cove was included in the 1994 land conveyance as was a 50-foot-wide public access easement along the shoreline (50 feet upland of the mean high-water mark) to provide unrestricted public access. The City addresses future land use goals for the project area to Shotgun Cove in their 2020 Comprehensive Plan, including private development of seasonal cabins and a year-round recreation area for residents and tourists (City of Whittier 2020).

The Chugach Native Corporation owns land southwest of the project area, and the State of Alaska owns the land uphill (south) of the project area and the adjacent tidelands and retains a 50-foot public use easement buffer along the coast (north of the project area).

The project is in an undeveloped area that is primarily remote and mostly natural. Some of the land is used for recreation. Emerald Cove Trail begins at the existing end of Shotgun Cove Road, follows the coastline with a maintained dirt track through forest and muskeg, dwindling to a barely-discernable cut in the underbrush prior to reaching Emerald Bay. Fishermen and hunters use the area for commercial, sport, and subsistence fishing and bear and deer subsistence and sport hunting. Recreation opportunities occur year-round and include hiking, boating, snowshoeing, skiing, and snow machining. No residences or businesses exist in or directly adjacent to the proposed project area. A few off-grid recreational cabins exist along existing Shotgun Cove Road, and businesses are located approximately two miles from the project area in downtown Whittier. There is no zoning in the project area.

<sup>&</sup>lt;sup>1</sup>In order to connect with the existing road, the proposed road extension crosses a small portion of ADNR land (approximately 100 feet) at the edge of the parking area. This land was leased to the City by ADNR through 2041. The ROW for the proposed road was designated and reserved on State of Alaska Plat 99-3.

The Forest Service assigns management areas (MAs) to National Forest System (NFS) lands on the Chugach National Forest to direct suitable uses and activities for the area. Trinity Point has been assigned to MA 8 (front country), where the desired condition is a wide range of recreation and subsistence opportunities accessible from the road system and access to forest products to meet community needs (Forest Service 2020). According to the Chugach National Forest Land Management Plan (Forest Plan), day-use facilities, Forest Service recreational cabins, and energy-related infrastructure and utilities are all suitable uses under MA 8 (Forest Service 2020a).

## 3.2.2 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the extension of Shotgun Cove Road would not be built and land use within the project area would not change. Land development is unlikely to occur on Trinity Point or within Shotgun Cove in the foreseeable future if no road access is built.

## 3.2.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

The proposed road extension would permanently convert a portion of undeveloped land in the project area to a network of gravel mainline, access roads, and parking lots between the end of the existing Shotgun Cove Road to Trinity Point. The proposed roadway crosses two parcels that require coordination (either in the form of ROW or other agreement) with the landowners. At the beginning of the project, a small segment of roadway crosses a corner of an ADNR parcel (ADL 229266) that is currently leased to the City through 2041. Further coordination may be required with ADNR at the expiration of the lease. Towards the end of the project, a small length of roadway (less than 100 linear feet) crosses a corner of NFS lands on Trinity Point prior to reaching the terminus on Trinity Point. As it is spatially separated from the road terminus, a separate agreement between the City and Forest Service would be needed for this small area. The portion of the proposed road that enters NFS land for parking access on Trinity Point would remain in Forest Service jurisdiction.

The project would improve access to City-owned and NFS lands, thus making it accessible to more visitors and increasing its potential for year-round recreational use. Along the project corridor, more people would be hiking, sightseeing, skiing, and snow machining at more times within currently undisturbed natural areas. Recreation would continue to be the predominant land use within the project corridor. Overall, the public would be granted more access to these lands for year-round recreational use with the addition of the proposed roadway and trailheads, beach access, and viewpoints along the road corridor.

Extension of the road and access roads would facilitate potential private land sales and development in the project area. Approximately 150 acres (16%) of the roughly 900 acres<sup>2</sup> of recreational public land owned by the City, State of Alaska, and Forest Service above Passage Canal in the area could be made available for private sale (70 to 90 lots). Private land owners would be most likely to construct recreational, seasonal use primitive cabins. Given the

<sup>&</sup>lt;sup>2</sup> The 900-acre area discussed here is assumed to be the peninsula of land between Passage Canal and Shotgun Cove and the City of Whittier and Trinity Point.

challenging terrain along the corridor, some of the cabins could have walk-up access instead of driveways. To not preclude future installation, the City made space for future utilities (electricity, water, sewer, internet) along Shotgun Cove Road but as of 2019 has decided utility development in the area is not cost-feasible (City of Whittier 2020).

As more of the land within the Passage Canal area is sold to private owners, less lands would be available for public recreational purposes; however, recreation would remain the overarching land use for this area. Including the proposed roadways, City, State, and Forest Service lands comprise 750 acres above Passage Canal that would remain as public land. Beyond Trinity Point, there are an additional 500 acres in the Shotgun Cove area owned by the City and State that are publicly-accessible lands. Overall acreage of public lands in the Whittier area would be reduced; but, a greater area of the existing public lands in Whittier would be made accessible to more residents and visitors via potential future trails. Ultimately, the City intends to encourage development in the Shotgun Cove area that supports a quality environment for year-round and seasonal residents, tourists, and recreationists.

The Proposed Action is consistent with the Forest Plan and the management intent of the Forest Service's MA 8 designation. The Forest Service is considering options for recreational facilities at Trinity Point such as beach access for non-motorized boat launching, campsite hardening at two locations for overnight camping, a short trail loop to provide views of Passage Canal, an interpretive kiosk, a small day-use picnic area, and an overnight public use cabin. This would increase the use of Trinity Point from a few visitors per month in the summer to potentially a few visitors per day in the spring, summer, and fall (when road access permits). The Forest Service has not yet proposed a specific plan for facilities at Trinity Point and will conduct a separate environmental analysis and involve the public in development of any future proposed development on NFS lands.

#### **Cumulative Impacts**

Most of the past, present, and reasonably foreseeable future actions have not resulted in substantial impacts to land use in the Whittier area, and together with the Proposed Action, would not result in land use impacts that would be considered significant. Whittier's land use has not changed substantially due to the land transfer to the City, the tunnel opening to vehicular traffic, the small boat harbor, the trails rehabilitation, the cruise ship dock and building, or the new public safety building primarily because there remained a lack of accessible and developable land in the area. The first phase of the Shotgun Cove Road resulted in minimal change in land use along the road; a few primitive cabins were built adjacent to the road. Most future projects involve improvements to existing facilities (tunnel improvements, ferry terminal modifications, and railway infrastructure) that would not be expected to spur development or land use changes.

The Head of the Bay Project would change land use at the head of Passage Canal, potentially adding a mix of industrial, commercial, and recreational facilities to a largely undeveloped plot of land that currently houses a short (emergency use only) airstrip, a RV camping area, a fuel tank storage area, and the City's former landfill. However, together with the Proposed Action, the Head of the Bay project would not result in land use impacts that would be considered significant.

#### **Mitigation Measures**

Any proposed land use activities will be subject to applicable local land use permit requirements and will follow standards described in the City of Whittier Comprehensive Plan. Any proposed activities subject to the Forest Plan will be consistent with the Forest Plan. Appropriate mitigation measures have been coordinated with the Forest Service and are included in this analysis.

# 3.3 Recreation

## 3.3.1 Affected Environment

The project area is surrounded by opportunities for outdoor recreation. Whittier provides one of a few access points to deep water fisheries, hunting lands for deer and bear, and camping. Residents and visitors use the marine waters adjacent to the project area for commercial, sport, and subsistence fishing and the land for hunting. Other popular summer recreation activities in and around the project area include hiking, berry picking, and kayaking, and winter recreation includes snowshoeing, skiing, and snow machining.

The existing Shotgun Cove Road and Emerald Cove Trail provide access to recreation activities. The trail is located on land owned by the City and runs parallel to the coastline, ending near Emerald Point. The trail was built by the ADNR Division of Parks and Outdoor Recreation and is maintained by the City (Figure 3-2). There are no designated Wilderness Areas, or National or State Recreation Areas within Whittier (Wilderness Connect 2020; National Park Service [NPS] 2020; ADNR 2020).

The City and ADNR, the officials with jurisdiction (OWJ) over the Emerald Cove Trail, have dissolved their 1997 agreement under which the trail was created and maintained. Further, the City has determined that the trail is not a significant recreation resource. As a result of this dissolution and determination by the OWJ, FHWA has concluded that the trail is not subject to protection under Section 4(f) of the Department of Transportation Act of 1966. There are no parks, trails, or other recreation resources in the project area that would qualify for protection under Section 4(f) See Appendix A for 4(f) documentation and coordination efforts with the OWJ.

The Forest Service uses their Recreation Opportunity Spectrum (ROS) as a classification system to establish a framework for managing a variety of recreation experiences depending on setting and location within NFS lands. They designate six major ROS use classes for areas ranging from highly-trafficked to remote: urban, rural, roaded natural, semi-primitive motorized, semi-primitive non-motorized, and primitive. Each ROS class provides a different setting and features (ease of access, remoteness, naturalness, interaction with others, facilities, etc.) with different experiences and opportunities based on these settings. NFS lands at Trinity Point are assigned to the ROS class of semi-primitive motorized, which is characterized by predominantly natural or natural appearing environment. This ROS class generally has a low to moderate level of visitor encounters (visitors would expect to encounter less than 6 to 15 other groups of visitors per day) over 85% of the primary use season. Additional features of this ROS class include small group sizes (up to 30 people), and moderate allowable site modifications and development such as Forest Service cabins or hardened campsites (Forest Service 2020; 2020a).



Figure 3-2. Emerald Cove Trail

2021

## 3.3.2 Environmental Consequences – No Action Alternative

With the No Action Alternative, existing recreation opportunities would remain and Emerald Cove Trail would not be impacted. NFS lands at Trinity Point would continue to be difficult to access on foot, and visitation numbers would remain low.

## 3.3.3 Environmental Consequences – Proposed Action Alternative

#### **Direct and Indirect Impacts**

During some periods of the construction phase, access to recreation activities within and adjacent to the project area would be limited, and the Emerald Cove Trail and trailhead would be inaccessible.

The Proposed Action would permanently impact the trail at several points and convert some portions to roadway. Approximately 0.6 miles of the trail will be permanently removed with the placement of the road; a larger portion of the trail would be segmented by the roadway and abandoned in place and overtime could be incorporated into privately-owned lots. Short segments of the trail would remain to access City lands in the project area. Loss of this recreation resource would be mitigated by allowing vehicle access to public lands along the corridor and construction of a new trail segment (see Mitigation Measures section below). The existing recreation experience would be altered, but walkers, bicyclers, and skiers (in the winter) could use the new roadway to travel on and to access public lands including NFS lands at Trinity Point.

With the potential future addition of private parcels along the roadway alignment, some existing areas used for recreation would no longer be accessible. However, the Proposed Action would increase recreation opportunities in the area by adding features such as parking areas and viewpoints, and could spur development of many easily-accessible points of entry for recreational activity including trailheads and beach access. The Proposed Action would also provide access to federal lands previously only accessible by boat or backcountry hikers and better access to state lands above (south of) the roadway. Recreation use along the corridor would be likely to gradually increase over several years with development of additional recreational facilities such as trails and private cabins.

Recreation use of Trinity Point will increase with construction of the Proposed Action. It is unlikely to exceed the desired level of social encounters for the designated ROS (encountering more than 15 other visitor groups per day) for most of the summer season; many groups would use the road terminus as a launching area for kayaking to destinations within Prince William Sound beyond Passage Canal and not remaining on Trinity Point.

Launching from Trinity Point would bring kayakers a day closer to farther-flung destinations in Prince William Sound, such as the Nellie Juan-College Fiord Wilderness Study Area, increasing visitation and human impacts to these remote NFS lands. For some recreationists, easier access to more remote areas would be welcome. For others, easier access could diminish their desired experience and lower the opportunity for solitude by leading to increased social encounters in these remote areas.

#### **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action Alternative would contribute to recreation (primarily, trail) impacts in the Whittier area. Other actions that would impact recreation in Whittier are the Whittier Trails Rehabilitation, Small Boat Harbor Expansion, and the Head of the Bay Development Project. Both the Proposed Action and the Head of the Bay Development Project include elements that would permanently change under-utilized public land that is mostly unaltered and could potentially be used for recreation, private ownership, or used by commercial and industrial business. Cumulative impacts to recreation would be mitigated as both projects propose additions and improvements to recreation resources, such as new trailheads, viewpoints, and camping areas that would increase accessibility to a wider variety of recreators.

#### **Mitigation Measures**

To mitigate for impacts to recreation resources in the project area, the following measures would be implemented along with the Proposed Action.

- Approximately 13 acres of land will be reserved along the corridor for public recreation access as shown in Figure 3-3 and Appendix A.
- Nine new parking lots will be constructed along the roadway and access roads as part of the Proposed Action. These parking lots will be constructed as construction of the roadway progresses from mile 2.0 to 4.5, with parking lots closer to mile 4.5 potentially not scheduled to be constructed until the last year of construction.
- To mitigate for the loss of Emerald Cove Trail, at a few of these parking lots, segments of the existing trail will remain and undergo minor improvements (and at one parking lot a new trail segment will be constructed) which could lead to recreational resources or to shoreline access (Figure 3-3 and Appendix A). While the portions of Emerald Cove Trail to be left in place would not be widened or realigned, minor improvements will include:
  - o removing deteriorated or deficient puncheons and rebar;
  - hardening the trail surface with gravel base or surface course, wood retainers, and/or puncheons;
  - o installing short-span (less than 10 feet) wood structures across small drainages;
  - o pruning of branches impeding on the trail; and
  - o removing old bridges in these sections.
- New wayfinding signs will be installed to direct travelers to Trinity Point, Emerald Cove, viewpoints, parking areas, beach access, hiking, and picnic areas.



Figure 3-3. Proposed Mitigation for Loss of Existing Trail

# 3.4 Wetlands

This section describes wetlands within the project area. Information was gathered from the National Wetlands Inventory maintained by the U.S. Fish and Wildlife Service (USFWS) and wetland delineation efforts completed by Stantec in 2011.

## 3.4.1 Affected Environment

According to a 2011 field-based wetland delineation effort of the area, there are approximately 104 acres of freshwater forested/shrub wetland (PF04/EM1B) and of freshwater emergent wetlands (PEM1B) within the study area (Stantec 2011; USFWS 2020; Figure 3-4). The wetlands are relatively undisturbed since there is little development, other than the primitive trail, in the area. While the project area is bounded by Passage Canal and Prince William Sound, marine wetlands are not within the project area.

## 3.4.2 Environmental Consequences – No Action Alternative

Under the No Action Alternative existing impacts to wetlands in the area will likely continue from use and maintenance of Emerald Cove Trail; however, these impacts would be minor.

## 3.4.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

The Proposed Action would result in temporary and permanent impacts to approximately 13 acres of wetlands (13% of the existing wetlands in the study area) from construction of the roadway mainline, access roads, and construction staging areas. Table 3-3 gives specific details about the amount and type of wetlands impact from different project components.

Consultation and coordination with USACE were undertaken in May 2020 with a request for a preliminary jurisdictional determination using wetlands data from the 2011 field study (Stantec 2011). See Appendix F for documentation of agency coordination.

Indirect effects to wetlands may arise from expected development of trailhead, trails, and potentially other recreational facilities along the main road and access roads. Other possible development could occur on privately-owned parcels. If all 90 parcels were developed, it could impact a total of 0.5 acre of wetlands; however, it is expected that not all lots will be developed in the near future. It is also expected that wetland areas would be developed last because of construction difficulties and permit requirements.

Less than 0.15 acre of the approximately 3.24 acres of wetlands on NFS lands would be impacted by the Proposed Action. Although further development on NFS lands on Trinity Point has not been planned, wetland areas could be partially impacted by future projects. Potential effects to wetlands from any new projects on NFS lands are expected to be minimal.

All future development would be regulated; each future action within jurisdictional wetlands would be required to be analyzed and permitted by USACE.

	Volume (cubic yards)	Area (Acres)				
Project Component						
Main Road Alignment						
Fill	43,000	6.2				
Excavation	21,000	0.5				
Access Roads						
Fill	21,000	57				
Excavation	20,000	5.7				
Parking/Staging Areas						
Fill	9,900	0.8				
Excavation	1,000	0.8				
Trail Improvements						
Fill	100	0.1				
Excavation	0	0.1				
Temporary Work Areas						
Fill/Restore	N/A	0.1				
TOTAL						
Fill	74,000	12.0				
Excavation	42,000	13.0				

Table 3-3. Approximate Wetland Dredge and Fill Impacts

## **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action Alternative would not be expected to contribute significantly to the loss of wetlands in the Whittier and Shotgun Cove area. There are an additional approximately 95 acres of undisturbed wetlands in Whittier within the same subwatershed. The Proposed Action combined with other actions would only impact about 7% of the total wetlands area in Whittier. Although the Proposed Action would impact wetlands, most other actions considered in the Whittier area impact the marine environment (Small Boat Harbor Expansion, Ferry Terminal Modifications) or occur on non-wetland or previously-disturbed areas (Head of the Bay Development, Public Safety Building) and would not substantially impact freshwater wetlands in Whittier.



Figure 3-4. Wetlands in the Study Area

#### Mitigation, Avoidance, and Minimization Measures

*Executive Order 11990 (EO 11990) Protection of Wetlands* requires that federal agencies avoid undertaking or providing assistance for new construction located in wetlands unless the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

There is no practicable alternative that would avoid impacts to wetlands, and the Proposed Action has included all practicable measures to minimize harm to wetlands. During alternatives development, the lower alignment was selected to be carried forward in the 2018 Draft DSR. Since that time, the alignment was modified and shifted to minimize wetlands impacts by bisecting wetlands in the narrowest locations, avoiding undercutting or draining wetlands, avoiding impacts to wetlands associated with stream channels, and minimizing roadway crossing of existing anadromous fish streams. However, much of the proposed project area is comprised of wetlands and complete avoidance of wetlands is not feasible to meet the purpose and need of the project. While wetland surface hydrology and connectivity would be bisected by the road fill, these disconnects would be minimized through installation of cross-drain culverts. Additional measures to avoid, minimize, and mitigate potential impacts to wetlands may include the following:

#### Avoidance:

- Fill area boundaries will be clearly delineated in the field to avoid accidental impacts from equipment operation and fill material placement.
- In wetlands, the contractor will not place fill, clear vegetation, or run equipment outside the delineated clearing zone.

## Minimization:

- Reduced clearing zone width will be established to minimum necessary for project construction and safe operation on segments crossing wetlands.
- Steep (1.5:1) road embankment slopes on wetland crossings will be used on wetland crossings to minimize the footprint width while providing long-term stability.
- Culverts and drainage mats will be installed in wetland areas as appropriate to minimize road effects on natural drainage patterns and to maintain hydrologic flow.
- All best management practices (BMPs) and conditions identified in the USACE permit and ADF&G Fish Habitat permit will be implemented.

## Mitigation:

- Approximately 6.4 acres of wetlands within the project corridor will be excluded from public recreation areas, private land sales, or future development and protected in perpetuity.
- A restoration project in wetlands or waters of the U.S. within the same watershed as the Proposed Action will be designed and executed to compensate for unavoidable wetlands losses.
- Informational signage focused on wetlands education will be installed at key locations along the corridor such as parking areas and trailheads.

# 3.5 Fish, Wildlife, and Vegetation

# 3.5.1 Affected Environment

The Shotgun Cove area is largely undeveloped and supports varieties of birds, fish, and terrestrial mammals. Black bears, coyotes, and mountain goats are predominant large land animals near Whittier, and moose and wolves are occasionally seen. Common small mammals include snowshoe hares, porcupines, beavers, river otters, mink, marmots, squirrels, and weasels (City of Whittier 2020). The adjacent Passage Canal marine environment supports eelgrass beds and a variety of fish and marine life, including marine mammals including humpback and orca whales, seals, sea lions, and sea otters, seasonal waterfowl, crab, shrimp, clam, and fishes. The most common fish include rockfish, flounder, halibut and four of the five species of Pacific salmon (City of Whittier 2020). Birds frequent the Whittier area including geese, ducks, cranes, Bald Eagles, kittiwakes, gulls, and ptarmigan (City of Whittier 2020). Suitable nesting habitat, such as mature (100- to 200-year-old) trees, is abundant.

The coastal temperate rainforest is characterized by moss, lichens and grasses, wild flowers, scrub alder, high-bush blueberry and salmonberry bushes, and a predominant tree cover of western hemlock and Sitka spruce. Both tree species grow to heights of 55 feet in this part of Prince William Sound (City of Whittier 2020). Considerations regarding migratory birds and eagles' nests, threatened and endangered species and critical habitat, fish streams and essential fish habitat (EFH), and invasive species are described in further detail within this section.

## **Migratory Birds and Eagles' Nests**

The August 7, 2020, USFWS Information for Planning and Consultation report generated for this project identifies four different migratory bird species that may be present within the project area (USFWS 2020a). According to a September 20, 2019, review of the Wetland Ecosystems Services Protocol for Southeast Alaska mapper and informal surveys of the area during other recent fieldwork efforts, there are no documented Bald Eagle nests within the project area (USFWS et al. 2019).

## **Threatened and Endangered Species and Critical Habitat**

The USFWS report for the project also indicates that there are no threatened and endangered species protected by the Endangered Species Act (ESA) or critical habitats under USFWS's jurisdiction in the Whittier/Passage Canal area (USFWS 2020a).

According to the National Marine Fisheries Service (NMFS), endangered western distinct population segment Steller sea lion, endangered fin whale, and endangered western North Pacific distinct population segment and threatened Mexico distinct population segment humpback whale occur adjacent to the project area within Passage Canal (NMFS 2020). The proposed project is not within designated critical habitat for Steller sea lion, and critical habitat has not been designated for fin whale. Critical habitat has been proposed by NMFS for the threatened Mexico distinct population segment of humpback whale but the ruling has not been finalized as of this document (84 FR 54354).

According to the ADF&G Anadromous Waters Catalog (AWC) and three site surveys in 2018 and 2019 (surveying a total of 16 streams) conducted by an ADF&G biologist in support of the Proposed Action, four streams with potential for fish habitat have been identified within or near the proposed project area (Table 3-4).

These streams include two that are recorded in the AWC (224-10-14430/Trinity Creek and 244-10-14426/unnamed stream #1; ADF&G 2020) and are considered to be EFH. Both streams support Pink Salmon (*Oncorhynchus gorbuscha*; spawning). The limits of anadromy were defined during the fish surveys; both have steep gradients that act as a barrier to anadromous fish passage prior to reaching the proposed project area (Frost 2018; Frost 2018a). An EFH Assessment for the project was completed and is included in Appendix B.

The August and October 2018 site surveys examined twelve streams in the project area and identified four with anadromous or resident fish present or potential fish habitat present (Frost 2018; Frost 2018a). Resident fish observed included Dolly Varden (*Salvelinus malma*) and sculpin. The August 2019 survey focused on four streams on Trinity Point only; no fish were observed in any of those surveyed (Frost 2019). Figure 3-5 shows all streams and drainages in the project area, streams requiring fish passage due to fish presence, and areas where steep topography is a barrier to fish passage. See Appendix B for ADF&G site survey reports.

Stream Name	AWC Code	Location	Sampling Location	Fish Species and Use	Fish Passage Required?
Trinity Creek	224-10-14430	SW of Trinity Point, flows into Emerald Bay	60.8013N; 148.5779W	Pink Salmon – spawning; Dolly Varden – resident (observed)	Yes; in two locations. Anadromy does not extend to project area
Unnamed stream #1	none	SW of Trinity Point, flows into Emerald Bay	60.800N; 148.585W	Dolly Varden – resident; sculpin (observed)	Yes; in two locations
Unnamed stream #2	none	SW of Trinity Point, flows into Passage Canal	60.799N; 148.593W	none observed, potential habitat	No; but potential construction impacts
Unnamed stream #3	244-10-14426	SW of Trinity Point, flows into Passage Canal	60.790N; 148.613W	Pink Salmon – spawning	No; anadromy does not extend to project area

Table 3-4. Fish Habitat Within the Project Area

Sources: ADF&G 2020; Frost 2018; Frost 2018a; Frost 2019

## **Invasive Species**

A September 23, 2019, search of the Alaska Center for Conservation Science's Exotic Plants Information Clearinghouse database showed that there is one invasive plant species present near the project area (University of Alaska Anchorage 2020). The alsike clover (*Trifolium hybridum*) was identified approximately one mile southwest of the project area and infests 0.012 acres. Individuals from the City and the Forest Service have observed invasive European black slugs (*Arion ater*) in the project area's vicinity, and an adjacent area was treated for noxious weeds (Solstice Alaska Consulting 2018).

# 3.5.2 Environmental Consequences – No Action Alternative

Since no construction would occur under the No Action Alternative, no impacts to wildlife species (including threatened and endangered species) or wildlife habitat would occur; the area would continue to provide forested habitat for several species, and intact native plant communities will continue to dominate the area.

# 3.5.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

There would be a permanent loss of roughly 23 of the existing 2,000 acres (1%) of forested wildlife habitat in this area as it is converted to roadway for construction of the mainline and access roads. The Proposed Action would cause a degree of forested habitat fragmentation in this area. Fragmentation can cause immediate, short-term effects such as minor shifts in the physical environment that may together cause the loss of old trees along the clearing limits. In the longer-term, fragmentation can cause species isolation and a decline in forest biodiversity.

The Proposed Action's road alignment and access roads would intersect and impact resident fish streams in four locations (Figure 3-5). However, any culverts installed in fish streams would occur upstream of the limits of anadromy. Through the use of construction site BMPs, no sedimentation impacts to downstream or marine EFH are expected; therefore, FHWA concluded with a finding of no adverse effect to EFH (Appendix B).

Construction in and near streams containing resident fish would be unavoidable; road crossing structures at these intersections would be designed to allow for fish passage. Due to design constraints including wetlands avoidance, topographical challenges, and stream location, the roadway crosses the east fork of Trinity Creek at a bend in the channel. Per ADF&G recommendation, a short section (approximately 60 linear feet) of the creek would be rerouted and straightened at the roadway crossing to avoid installing an inappropriately large culvert to accommodate for the stream bend. Consultation and permitting with ADF&G would be undertaken prior to final design (see Appendix F for documentation of agency coordination).

There would be a temporary loss of forested habitat due to construction-related clearing. Construction would also include temporary localized disruption to wildlife from construction noise. All construction and vegetation clearing would remain within the proposed road extension corridor within City- and Forest Service-owned land. Soil and vegetation disturbance could temporarily create a favorable environment for invasive species introduction and spread. Wildlife would experience additional impacts from construction-related noise, including blasting noise.

Although ESA- and Marine Mammal Protection Act (MMPA)-listed species may occur in Passage Canal and Shotgun Cove, no protected species habitat exists within the footprint of the Proposed Action. Temporary impacts from construction-related blasting noise may impact marine mammals in Passage Canal. ESA consultation with NMFS was initiated on September 25, 2020, and NMFS concurred with a finding of may affect, not likely to adversely affect marine mammals on January 20, 2021. Marine mammal monitoring will be required for any exposed rock cut slope blasting activities along the project corridor. A record of consultation is included in Appendix C.



Figure 3-5. Mapped Streams in and Near the Proposed Project Area

2021

Future associated development would have the potential to further impact wildlife habitat in the project area. Additional soil disturbance and vegetation clearing would create seed beds for invasive species introduction, and the increase in human presence and movement through the area would increase the chance to spread these species. Construction of recreational cabins and associated outbuildings and vegetative clearing has the potential to disturb wildlife. Interactions with predator species such as bears and wolves would increase, including an increased probability of animal/vehicle collisions, negative encounters, and kills in the defense of life and property. In general, an increase in human presence in an area where there currently is little to no presence would likely deter some animals from using the area; however, it is likely they would become habituated to the increased presence over time. Future development within the area along the shoreline (e.g., small boat docking facility) induced by the Proposed Action would have the potential to impact Passage Canal and protected marine species. These projects would be subject to regulation and compliance with the ESA and MMPA. Additionally, any proposed development on Trinity Point would be managed by the Forest Service and would have to comply with federal environmental regulations, including the National Environmental Policy Act of 1969 (NEPA).

#### **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action Alternative would not be expected to contribute significantly to fish and wildlife impacts in the Whittier area. Recent past, present, and planned future actions largely involve existing Whittier infrastructure within city limits with minimal impacts to fish and wildlife. The Head of the Bay Development Project would involve vegetation clearing and lost wildlife habitat; however, much of this area was previously impacted by a military fuel tank farm and associated development and is not high value habitat. Available fish and wildlife habitat is abundant around Whittier, and the Proposed Action would only impact an estimated 1% of habitat in the project area.

#### **Mitigation Measures**

The following mitigation measures are recommended to minimize potential impacts to fish and wildlife resources and vegetation during construction.

- Clearing size will be kept to a minimum to reduce permanent forested habitat loss.
- The project will follow USFWS guidance regarding migratory birds (including eagles and their nests) for Southcentral Alaska and would avoid vegetation and tree cutting/clearing between May 1 and July 15 or between March 1 and August 31 if within 660 feet of an active eagle nest (USFWS 2017). Blasting will not be performed within 0.5 mile of an active eagle nest during the breeding season.
- The project design team has worked and would continue to work closely with ADF&G biologists to determine stream crossing locations that would require design meeting ADF&G fish passage criteria. An ADF&G Fish Habitat Permit will be obtained prior to work involving streams containing fish.
- In-water work in resident fish streams for culvert installations and stream rerouting will take place between late winter and mid-July as per ADF&G recommendations and Fish Habitat Permit.
- Any blasting near resident fish streams will take place between late winter and mid-July as per ADF&G recommendations. If determined by the contractor that blasting would be needed near the anadromous reach of the waterbodies, blasting will occur from

November to March or May to July to minimize impacts to fish as per ADF&G recommendations.

- The contractor will draft a blasting plan which will adhere to the requirements of *ADF&G's Alaska Blasting Standards for the Proper Protection of Fish* (Timothy 2013), particularly:
  - Blasting overpressures and peak velocities will be below the manual's specifications (instantaneous pressure rise in the water column less than 7.3 pounds per square inch and peak particle velocities less than 2.0 inches per second).
- Any culverts proposed for installation on NFS lands should be reviewed by Chugach National Forest staff prior to design approval to ensure consistency with best management practices.
- Marine mammals will be protected from construction-related blasting noise through the use of protected species observers and shutdowns, as needed, during blasting. See Appendix C.
- All construction equipment will be inspected and cleaned prior to entering and exiting the construction site to minimize spread of vegetative materials and invasive species.
- The construction contractor will be provided with "Selected Invasive Plants of Alaska" (2009) booklet and black slug handout to assist in the identification, treatment, avoidance, and reporting of invasive species.
- All footwear, gear, and equipment will be cleaned and free of invasive plant materials and slugs and slug eggs prior to entering the construction site. Work in or near invasive infestations will be avoided where practicable, especially where invasive plants have gone to seed as these seeds can contaminate gear and be spread to other sites (e.g., dandelions).
- Ground disturbance will be limited to the existing site footprint where practicable. Trampling and ground disturbance that could create favorable seed beds for non-native plants or trample sensitive plant species would be prevented.
- All invasive species will be reported to the permit administrator who will report the location information, species, and infestation size (for plants) immediately to the 1-877-INVASIV (1-877-468-2748) hotline.
- To avoid spread of invasive species, exposed slopes will be stabilized using clean shot rock (riprap) or shredded wood mulch from cleared trees on site.
- If revegetation is needed on NFS lands, approval will be requested from the permit administrator who will consult the Forest Service zone or forest ecologist to discuss and recommend seed mixes or materials prior to approval.
- Informational signage focused on the importance of protecting native vegetation and wetlands and preventing the spread of invasive species will be installed at key locations along the corridor such as parking areas and trailheads.

# 3.6 Cultural and Historic Resources

This section describes cultural resources and potential effects within the area of potential effects (APE). For the purpose of complying with Section 106 of the National Historic Preservation Act (NHPA), the APE is defined as the proposed road corridor, access roads, parking areas, trails and all areas within the construction vegetative clearing limits.

## 3.6.1 Affected Environment

The earliest known occupation of the Prince William Sound region, the Uqciuvit phase, occurred approximately 4,400 and 3,300 years ago, followed by the Chugach phase approximately 2,400 years ago. Historically, the Sound was occupied by eight geographic groups of Chugach Eskimo. Russian exploration of the region occurred beginning in 1741, and American exploration occurred beginning in 1867. During World War II, development in Prince William Sound increased, especially in Whitter, as the U.S. Army constructed the Whittier port and railroad terminus, and large building construction began in 1948. Whittier served as an Army port until 1960, and the City was incorporated in 1969 (Cultural Resource Consultants (CRC) 2020).

A preliminary historic and cultural resources desktop study and three separate archaeological field investigations occurred for this project. A search of the Alaska Heritage Resources Survey and the National Register of Historic Places (NRHP) found no cultural resource sites in the APE, which includes the entire area owned by the City along the alignment and all the land owned by the Forest Service at Trinity Point. Four culturally-modified trees (CMT) and saw-cut stumps were found during the 2018 field survey<sup>3</sup>; however, according to the Alaska Office of History and Archaeology, individual or small groups of CMTs are not usually considered to be significant; though their presence demonstrates past use of the project area. No other cultural features or sites were found during field surveys (CRC 2020).

## 3.6.2 Environmental Consequences – No Action Alternative

With the No Action Alternative, existing conditions would continue and would not disturb or adversely affect cultural or historic resources.

## 3.6.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

No previously recorded cultural or historic resources eligible for listing on the NRHP exist in the APE of the Proposed Action; therefore, no impacts to historic resources are expected.

In accordance with Section 106 of the NHPA, the Native Village of Chenega, Native Village of Tatitlek, Chugach Alaska Corporation, Chenega Corporation, and Tatitlek Corporation were consulted on June 12, 2020, to determine if the tribal entities had interests or concerns regarding the project. Chenega Corporation and the Native Village of Chenega responded requesting more information and a meeting to discuss the project. Representatives from WFLHD, Forest Service, and the City held a teleconference on July 5, 2020 with representatives from Chugach Alaska Corporation. A separate teleconference was held with the Native Village of Chenega and Chenega Corporation on July 15, 2020. A summary of consultation is included in Appendix D.

Consultation with the State Historic Preservation Office (SHPO) was also initiated on June 23, 2020. The SHPO concurred with a finding of no historic properties affected on November 20, 2020 (SHPO File No. 3130-1R WFLHD/2020-0035; Appendix D).

<sup>&</sup>lt;sup>3</sup>To protect potentially fragile, vulnerable, or threatened cultural sites from disturbance, location information is restricted pursuant to AS 40.25.120(a)(4), Alaska State Parks Policy and Procedure No. 50200, the National Historic Preservation Act (PL 89-665, 16 U.S.C. 470), and the Archaeological Resources Protection Act (PL 96-95).

## **Cumulative Impacts**

As no impacts to cultural or historic resources are anticipated from the Proposed Action, the project would not contribute to the cumulative loss of these resources.

## **Mitigation Measures**

The following mitigation measures are recommended to minimize potential impacts to cultural resources.

- Project BMPs will limit the ground disturbance to within the clearing limits.
- If previously unknown archeological materials or human remains are discovered during construction, all activities will cease in the immediate area of the finds pending further recommendations from the FHWA in consultation with the SHPO.

# 3.7 Soils and Geology

## 3.7.1 Affected Environment

The geographical area of Whittier is encompassed by mountains and glacial formations; the town is adjacent to the boundary between the Chugach Mountains to the north and the Kenai Mountains to the south (Nistor 2013). The project area lies along the footslope of the mountains to the northeast of Whittier.

Two separate reconnaissance geotechnical efforts performed in 2018 and 2019 examined several points within the project corridor. Overall observations of the project corridor revealed shallow bedrock in treed areas, deeper bedrock in muskegs, and several water crossings. Treed areas and muskeg areas are generally characterized by organics, moss, and soft silt to an estimated depth of two feet and four feet, respectively, over bedrock. Firm soils may exist under surface organics in some areas of the project corridor but these deposits are likely thin (less than 1-foot thick) on average. Within major stream crossing areas, the soil is less than a few feet deep and localized. There are no substantial amounts of soil within the project area and exposed rock faces are present along the beaches (Shannon and Wilson 2018; 2019).

# 3.7.2 Environmental Consequences – No Action Alternative

Under the No Action Alternative, soils within the project corridor will likely remain the same with existing and future disturbance caused by infrequent trail users.

# 3.7.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

The Proposed Action Alternative is a cut and fill project that would involve clearing and rock cuts resulting in new impacts to soils and geology within the approximately 80-foot wide (mainline areas) or 60-foot wide (access road areas) construction zone. Exposed areas of fresh cuts and fills are subject to wind and water erosion. Development of new trails would lead to greater surface area of exposed soils, and increased foot traffic would contribute to soil erosion in the area. In general, the permanent loss of permeable soil would result in additional erosion and undercutting the footslope would lead to increased landslide risk. Overall, the Proposed Action would have localized, temporary impacts to the soil and geology within the project corridor, with the final project providing a solid gravel surface for vehicle use.

Development induced by the Proposed Action, including cabin development and potential future trails, would lead to temporary and permanent soil impacts in the project area. Most impacts would be localized and temporary associated with construction of cabin structures and short driveways and would not involve major rock or soil work. More permanent impacts would result from the placement of impermeable structures, including cabin roofs.

Based on a preliminary kinematic analysis conducted for the project, existing conditions in the rock mass within the project area combined with cut slope angles no steeper than 65 to 70 degrees will help to lower the potential for rock slope failures in cuts along the proposed roadway.<sup>4</sup> The actual steepness of rock cut slopes would need to be determined through final design (and verified through inspection during construction) and would be dependent on the orientation of the cut slope and actual rock structure orientation along the project corridor. Further, rock fall will be mitigated through establishment of catchment ditches at the toe of the slope and draped mesh, as needed.

#### **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action Alternative would not be expected to result in cumulative impacts to soils and geology. The Proposed Action would increase the amount of exposed cut slopes and cleared vegetation in the project area. However, proposed mitigation measures would limit erosion and permanent effects on soil would be minimized. Many of the previous projects took place in previously-disturbed or marine areas and future actions involve work on existing facilities. Head of the Bay projects would involve earthwork and vegetation clearing; however, the terrain in this area is flat and there would be less potential for erosion and landslides. Through use of mitigation measures and BMPs, construction of the Proposed Action combined with effects of past, present, and reasonably foreseeable future actions would be expected to have minimal impact on the overall soil and geology of the Whittier area and would not contribute to cumulative impacts.

#### **Mitigation Measures**

Appropriate sediment and erosion control BMPs will be installed before construction begins and will be maintained in working order throughout the construction period, including:

- The contractor will be required to develop a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the Alaska Department of Environmental Conservation (ADEC) Alaska Pollutant Discharge Elimination System (APDES) to control and prevent soil erosion and sedimentation from the construction site.
- Erosion control measures (e.g., silt fence or other means) will be placed and maintained. These devices will remain in place until fill and other exposed earthwork attributable to the project are stabilized.
- Construction limits will be staked and clearly demarcated.
- Natural vegetation will be retained wherever possible.

<sup>&</sup>lt;sup>4</sup> Relatively steeply dipping and persistent bedding plans are the dominant discontinuity feature within the project area.

• Temporary and permanent stabilization measures will be initiated as soon as practicable by the contractor, but within at least 14 days on all portions of the site where construction activities have temporarily or permanently ceased.

# 3.8 Noise

# 3.8.1 Affected Environment

The study area for noise is defined as one mile of the project limits and includes the City of Whittier. Developed recreational use areas and quiet suburban roads have noise levels typically around 50 decibels (A-weighted; dBA) at a distance of about 50 feet (Bureau of Reclamation 2008). Generally, sound from roads without any buffer decreases by about 3 to 4.5 dBA as the distance from the source doubles; therefore, at 100 feet from the road, the sound would decrease to 45.5 to 47 dBA and to the level of a soft whisper (at 15 feet) by about 1,600 feet from the road (Illinois Department of Transportation 2015). A conservatively large study area was used to assess noise impacts since precisely defined details on project-related blasting activities are not available, and the small land area of Whittier and limited available roads mean that routes to mobilize equipment and construction vehicles to the site traverse the entire community. With no development and limited access (e.g., foot), ambient noise levels in the project area are quiet, with the only existing noise in the area is from passing marine vessels and snow machines in the winter. The project area is located on undisturbed, natural land and is approximately 1.5 miles from any sensitive noise receptors, including Whittier residences.

With a railroad yard in the center of town and commercial, industrial marine operations along the shoreline, and a bustling summer cruise ship and tourist industry, ambient noise levels within the community of Whittier are somewhat high during some times of the year.

# 3.8.2 Environmental Consequences – No Action Alternative

Noise levels in the area would not change under the No Action Alternative.

# 3.8.3 Environmental Consequences – Proposed Action Alternative Direct and Indirect Impacts

A temporary increase in noise levels associated with construction equipment and activities in the vicinity of the project would occur during construction of the Proposed Action Alternative. Movement of construction vehicles and equipment through town would increase noise in Whittier for several construction seasons, mainly on the primary route through town (West Camp Road, Whittier Street, Blackstone Road) and the existing portion of Shotgun Cove Road. Blasting is proposed in several locations along the main alignment and access roads due to shallow bedrock in the project area and rock cuts required. Blasting would occur throughout construction period. Noise from construction activities would not impact any sensitive noise receptors as the nearest of these is over one mile away.

Upon road opening, an increase in noise associated with vehicle use is expected. Vehicle traffic on the proposed roadway and through town would increase over time with increases in visitor awareness of the road extension, and recreational and seasonal cabin use; however, vehicle noise is expected to remain relatively low due to low posted speed limits and low anticipated average daily traffic. Since no commercial or industrial development is expected, no noise-generated with those types of uses is expected. With the potential addition of new all-season trails accessing other areas of the Chugach National Forest, snow machine use would increase noise levels in the project area. Minor increases in noise over time would not impact any sensitive noise receptors because they are over one mile away.

The Proposed Action would increase ease of access to the project area, the potential for new trail development, and lead to private sale of adjacent lots. Although this could slightly increase development, traffic, and associated increased noise levels, the increases are not anticipated to rise to a significant level of impact due to other factors that will limit development, including access to utilities and no winter road maintenance.

#### **Cumulative Impacts**

Projects such as the Small Boat Harbor Expansion and the Head of the Bay Development Project would contribute incrementally to noise in the Whittier area with increased vehicle traffic both on land and in the water. Industrial and commercial activities planned with the Head of the Bay Project would increase localized noise, but the project is in an area formerly reserved for industrial activities (former tank farm). Together these projects with the Proposed Action could increase the noise experienced in the Whittier area; however, cumulatively noise would not be above that of heavy traffic (about 60 dBA at 300 feet) and would be for short periods (over a few hours during weekends in June, July, and August). Because of this, it is expected that cumulative noise impacts would be minor and not significant.

## **Mitigation Measures**

As no major noise impacts from the construction or operation of the Proposed Action Alternative, mitigation measures for abatement of noise are not proposed.

# 3.9 Visual Quality

This section describes the potential impacts of the proposed road improvements on the scenic vista of the project area. The visual study area includes the proposed road corridor and adjacent areas where the project is visible (Passage Canal, forested hills above). Construction of road projects in scenic areas can lead to visual impacts to previously-undisturbed landscape that may characterize a town or area. The FHWA and the Forest Service have objectives regarding the assessment of visual impacts caused by actions taken on lands they administer. The FHWA addresses visual impacts from a road project from two perspectives; neighbors adjacent to the project and views for road users themselves. The Forest Service employs scenic integrity objectives for NFS lands depending on assigned management area to assess whether a project will be compatible with the landscape in which it is proposed. For example, a landscape with minimal visual disruption is considered to have very high scenic integrity (Forest Service 1995).

# 3.9.1 Affected Environment

The visual study area is characterized by extensive ocean, mountain, and glacier vistas. The existing natural harmony of the surrounding landscape is high, consisting mostly of mature vegetation, steep slopes, wildlife, and marine waters. The proposed roadway corridor is surrounded by forest, muskeg, and steep mountain slopes to the east and views of Passage Canal and the mountains and forested areas on the opposite bank to the west (Figure 3-6). There are no designated Wild and Scenic Rivers or Scenic Byways in Whittier or the project area (DOT&PF 2020c; NPS 2020a).



Figure 3-6. View of Passage Canal from Proposed Action Area

## 3.9.2 Environmental Consequences – No Action Alternative

The visual elements of the project area would remain the same as existing conditions with the No Action Alternative.

# 3.9.3 Environmental Consequences – Proposed Action Alternative Direct and Indirect Impacts

The Proposed Action Alternative would construct a 2.5-mile-long road, access roads, and parking lots on mostly undisturbed land and would result in visual impacts along the project corridor similar to those of the existing (Phase I) Shotgun Cove Road; however, the Proposed Action has been sited to take advantage of landforms and trees. Visual impacts would be experienced by boaters traveling on Passage Canal looking towards the hillside/project area northeast of Whittier. There are four segments along the proposed roadway where rock cuts, fill slopes, or parking areas would be most visible from Passage Canal, ranging from 200 to 500 feet long and 5 to 35 feet high (Table 3-5). For comparison, the most visible portion of the existing Shotgun Cove Road from Passage Canal is approximately 1,500 feet long, more than 50 feet high, and not screened by surrounding vegetation.

Recreational users on land would also experience visual impacts from installation of the proposed road; however, the number of recreational land users in close proximity to the roadway is expected to be small and the road itself would be mostly hidden from view by vegetation except for in higher elevations. The road itself would offer scenic views from many locations, and drivers would have access to views of Passage Canal from an area previously inaccessible to vehicular traffic. A Visual Impacts Assessment Memorandum was prepared for the project to

estimate the extent to which users on Passage Canal might be impacted by views of the proposed roadway and access roads and is included as Appendix E.

Road Mile	Length x Height of Visible Impact (feet)	<b>Project Components</b>
0.8 to 0.9 <sup>a</sup>	250 x 20-35	rock cut; close to shore
1.10 to 1.23 <sup>b</sup>	500 x 20-35	roadway fill slope
1.36 to 1.40 <sup>c</sup>	200 x 5-30	stream crossing structure, parking area
1.62 to 1.71 <sup>d</sup>	500 x 15-35	roadway fill slope; natural clearing

**Table 3-5. Estimated Locations of Visual Impacts** 

<sup>a</sup> See Visual Impact Model (Appendix E) pp. 7-9; 25-26; 45

<sup>b</sup> See Visual Impact Model (Appendix E) pp. 8; 26; 47

<sup>c</sup> See Visual Impact Model (Appendix E) pp. 8; 27; 47; 55-56

<sup>d</sup> See Visual Impact Model (Appendix E) pp. 11; 29-30; 34; 48; 50; 55-56

The NFS lands at Trinity Point have a high scenic integrity objective. Visual impacts to Trinity Point would be minimal or non-existent since the proposed parking lots would be placed in a densely forested area at approximately 50 feet in elevation and not visible from Passage Canal. Impacts to Trinity Point are included in the Visual Impacts Assessment Memo found in Appendix E.

Temporary impacts to visual quality would occur during construction activities. The movement of equipment in and out of the project area and general construction activities would be visible to boaters on Passage Canal. After completion the gravel roadway, excavation of the cut slopes would be visible at a few points from Passage Canal, depending on vessel height. The use of BMPs and conservative clearing zones would reduce visual impacts, but the proposed project would have a moderate impact on the scenic views of the project area as seen from Passage Canal. However, users traveling along the road would experience a view with a high level of scenic integrity that might otherwise have been inaccessible to them prior to implementation of the Proposed Action.

Since the area to be impacted consists of dense forests and mountain hillsides, any future private development on parcels or potential trail development spurred by construction of the Proposed Action would add additional visual impacts to this area. It is expected that there would be 70 to 90 lots available for private sale, ranging from a quarter to a half-acre in size. If development occurs on these lots, it would be mainly limited to primitive, dry cabins as utilities would not be available in the near future. It is expected that most cabin owners would leave most of vegetation on their properties intact, since it adds to the natural feel and beauty of the site, provides protection from the elements, and because clearing of large trees and hard earthscape would be difficult. The level of visual impacts from these private dwellings and trails could be minimized through use of covenants, conditions, and restrictions imposed by the City for land use permits issued in this area including, for example, only earth-toned buildings limited to a certain height.

## **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action Alternative would not be expected to significantly contribute to impacts to visual resources. The Proposed Action together with the existing (Phase I) Shotgun Cove Road would not result in major aesthetic impacts since the low profile would screen the roadway from view for most viewers on Passage Canal. The other projects involve improvements to existing facilities within Whittier or at the Head of the Bay, a previously developed area, and would minimally impact the scenic quality; therefore, combined with the Proposed Action would result in little visual impacts.

## **Mitigation Measures**

- Project design will include a conservative clearing area (roughly 80 feet) to minimize disturbance to visual aesthetics.
- No roadway lighting will be included with the Proposed Action.
- Vegetation buffers will be left intact as much as possible along the project corridor.

# 3.10 Air Quality

This section describes the potential impacts of the proposed road improvements on air quality. The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six principal pollutants to protect the public from air pollution. Geographic areas where concentrations of a pollutant exceed the NAAQS are classified as "nonattainment" areas. Areas previously designated as non-attainment that are now in compliance with air quality standards are classified as "maintenance" areas. Alaska experiences air pollution in larger communities such as Anchorage, Fairbanks, and Juneau stemming from vehicle emissions, industrial sources, and indoor wood or oil burning stoves. Many rural Alaska communities experience air quality impacts from dust on roadways and unvegetated lots or from glaciers and dry river banks (ADEC 2019).

# 3.10.1 Affected Environment

Whittier is surrounded by undeveloped wilderness and air quality is generally very good yearround. Whittier has a small number of permanent residents (280; Alaska Department of Labor and Workforce Development 2020) and there is a limited amount of vehicle traffic. Marine vessels (especially large ferries and cruise ships) and railway traffic contribute to greenhouse gas emissions, but overall contribution from these types of sources is minor (EPA 2019). According to the ADEC and the EPA, Whittier is not in a nonattainment area and meets all NAAQS for all criteria pollutants (ADEC 2019a; EPA 2019a). Neither the city nor the Valdez-Cordova Census area is included in the ADEC's State Air Quality Control Plan (ADEC 2019b).

# 3.10.2 Environmental Consequences – No Action Alternative

The No Action Alternative would not result in impacts to air quality in the area.

# 3.10.3 Environmental Consequences – Proposed Action Alternative Direct and Indirect Impacts

The Proposed Action Alternative would install a gravel road to Trinity Point. Vehicle traffic on the proposed gravel surfaces could result in decreased air quality stemming from vehicle emissions and dust generation; however, the amount of expected traffic from this project would be highly localized and sporadic. DOT&PF classifies the existing Shotgun Cove Road as a local road, which indicates the road has low posted speed limits and therefore lower dust generation

potential. The proposed extension is expected to be the same designation. Proposed access roads would feature even lower speed limits, as they would be narrower in most places. Additionally, rain events are frequent in Whittier, and would keep roadway dust from vehicle use low. During construction there would be a temporary increase in exhaust and fugitive dust. These impacts would be minimized through the implementation of construction BMPs.

The anticipated addition of recreational cabins to the project area could contribute to local air quality impacts. With no utilities available in the area, wood or oil burning stoves (or open campfires) would be used for heating and cooking. If all proposed parcels were developed, 70 to 90 small cabins potentially using these stoves or campfires would be constructed within approximately 2 miles along the Passage Canal corridor. This could decrease air quality in the immediate area and affect local users, but would be unlikely to cause Whittier to fall below NAAQS for any pollutant. Wintertime cabin use, when heating stove impacts on air quality would be the most significant, would be greatly reduced due to limited road access.

#### **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action Alternative would not be expected to contribute significantly to air quality impacts. Air quality impacts from the Proposed Action and from other past, current, or future public or private activities such as the Head of the Bay Development Project, which focuses on increased industrial and commercial business development in Whittier, could produce pockets of decreased air quality in Whittier. Overall, the impact would be minor from each project and would remain localized to the area and therefore would not cumulatively contribute to air quality degradation in Whittier.

## Mitigation

The following mitigation measures are recommended to minimize potential impacts to air quality during construction:

- All equipment will be operated in accordance with manufacturers' recommendations to minimize emissions.
- Idling heavy equipment will be shut down when not in use.
- BMPs will be implemented during construction activities to mitigate fugitive dust and reduce particulate matter emissions, e.g., applying water as needed to control fugitive dust emissions.

# 3.11 Water Resources, Water Quality, and Floodplains

# 3.11.1 Affected Environment

Located on the shore of Passage Canal, Whittier experiences a maritime climate characterized by wet conditions throughout the year. The city's average annual precipitation equals approximately 196 inches (City of Whittier 2020). Whittier is part of the Western Prince William Sound watershed and the Passage Canal-Frontal Blackstone Bay subwatershed. There are a number of streams and drainages that originate in the mountains above Passage Canal. (Section 3.5 contains details on fish streams.) Due to the shallow depth of bedrock, groundwater is near the surface in the project area. Steep slopes, shallow bedrock, and a thin layer of topsoil can lead to great quantities of runoff during storm events (CRW 2018). According to the EPA Watershed Mapper

and the ADEC Impaired Water Bodies Mapper, there are no impaired water bodies in the Whittier area (EPA 2020; ADEC 2020).

Whittier's community water system (Public Water System ID# AK2211952) draws water from three groundwater wells located near Whittier Street in downtown Whittier. According to the 2019 Whittier Water Quality Report, all levels of sampled contaminants were within normal ranges (City of Whittier 2019). Figure 3-7 below shows the drinking water source protection area for these three wells as compared to the proposed project location. The ADEC Alaska Water Quality Map indicates that there are no impaired water bodies in Whittier or the surrounding area (ADEC 2019c). Water quality data specific to the study area are unavailable, but since there is no existing or former development along the project corridor water quality is assumed to be good.

According to a September 8, 2020, search of the Federal Emergency Management Agency (FEMA) Flood Map Service Center, there are no mapped floodplains or floodways in the project area, however, Whittier is prone to storm surge, rainfall, snowmelt, and glacial melt floodings (FEMA 2020).

# 3.11.2 Environmental Consequences – No Action Alternative

The No Action Alternative would not result in impacts to water resources, water quality, or floodplains.



Figure 3-7. Whittier Drinking Water Source Protection Area

# 3.11.3 Environmental Consequences – Proposed Action Alternative Direct and Indirect Impacts

The Proposed Action would result in temporary and permanent impacts to approximately 0.96 acre of freshwater streams in the project area from construction of the roadway mainline, access roads, and construction staging areas. Table 3-6 summarizes the impacts below ordinary high water (OHW). Where possible, design of the Proposed Action avoids stream crossings and placement of fill in active stream channels. The project would install culverts at stream crossings

and cross culverts to maintain existing drainage patterns, sized to meet 1% annual exceedance probabilities.

Storm water or melting snow runoff from the road and the roadside ditch would carry sediment from the road surface to nearby streams and drainages. Runoff from the road surface could also introduce contaminants into the soil, groundwater, and surface water from motor vehicle traffic. Since the roadway would not be paved, the permeable surface of the road (6 inches of crushed rock) would serve to minimize sediment and toxin deposition from roadway runoff. The Proposed Action is not within the drinking water source protection area for Whittier.

Water quality may also be impacted indirectly from increased development and use of the Trinity Point/Shotgun Cove area spurred by the Proposed Action. Land clearing for future recreational development (including potential trails and cabins) would contribute to degradation of water quality in this undeveloped portion of Whittier. Proposed development would include vegetation clearing and small increases in impervious surface area. Exposed soils from increasingly cleared areas and increase use of trails in the area could erode into nearby waterways and degrade water quality. New cabins in the project area would likely be small and new driveways would be installed as small dirt roads rather than asphalt surfaces, thereby preserving much of the pervious surface area.

	Volume (cubic yards)	Area (Acres)
Project Component		
Main Road Alignment		
Fill	624	0.72*
Excavation	162	0.72
Access Roads		
Fill	164	0.19
Excavation	0	0.18
Parking/Staging Areas		
Fill	0	0.03
Excavation	0	0.05
Trail Improvements		
Fill	11	0
Excavation	0	0
Temporary Impacts		
Fill	220	0.02
Excavation	7	0.05
TOTAL		
Fill	1,019	0.06
Excavation	169	0.90

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\*Reflects area of streams modified by installation of culverts.

The Proposed Action would not induce affects to FEMA-mapped floodplains or floodways as there are none mapped in the project area. A majority of the main roadway is more than 165 feet away from the shoreline of Passage Canal and would be unaffected by marine flooding. Project-related construction activities would cause temporary impacts to water quality. Vegetative clearing in conjunction with the project would increase the surface area of exposed soils and cause soil erosion, leading to increased turbidity in project area surface waters. The impacts would likely be limited to small streams and drainages within the project corridor and would undergo natural filtration prior to reaching Passage Canal. Water quality impacts would be minimized through the implementation of BMPs during construction.

#### **Cumulative Impacts**

Combined with past, present, and reasonably foreseeable future actions, the Proposed Action would not be expected to contribute to cumulative effects to water resources or water quality. Past actions in the project area, including local trail rehabilitation and the existing Shotgun Cove Road minorly impacted water resources, and together with the Proposed Action would result in minimal impacts to water resources since the area would remain largely forested and undisturbed with steam buffers. The proposed Head of the Bay development could result in water quality impacts to Passage Canal from installing a recreational boat launch, deep water port facility, or other infrastructure would likely be localized and temporary during the construction phase of the planned improvements; however, the Proposed Action, located approximately three miles east of the Head of the Bay project, would not contribute to direct impacts to the marine environment. The Proposed Action does not include impacts to floodplains, and therefore cumulative impacts to this resource are not analyzed.

## Mitigation

To minimize, avoid, and mitigate potential impacts to water resources in the project area, the following measures would be implemented:

- The City may create approximately 8.5 acres of setback protection "non-disturbance zones" around larger select watercourses on City-owned land through the adoption of code. These zones will be defined in a future USACE permit application for the project.
- Drainage ditches will be installed along the roadway, with wider ditches in muskeg areas (5 feet wide) to control surface water infiltration into the roadway.
- The contractor will be required to develop a SWPPP in compliance with ADEC's APDES and BMPs will be implemented to control and prevent stormwater runoff from causing sedimentation in wetlands, and turbidity in open waters. Erosion control measures will be left in place until exposed areas are stabilized.
- All equipment operated in or adjacent to water bodies or wetlands will be clean of oil and grease and properly maintained. Equipment operators will carry absorbent pads and spill response kits, provide containment and cleanup for portable fuel tanks (including hose and nozzle), follow approved disposal methods for waste products and repair leaky equipment promptly.
- No fuel storage, vehicle fueling, or maintenance will be conducted within 100 feet of water bodies.

# 3.12 Social, Community, and Environmental Justice

This section describes impacts to individuals and communities in the vicinity of the project corridor. Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations – was issued in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. The executive order directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations to the greatest extent practicable and permitted by law. The order also directs each agency to develop a strategy for implementing environmental justice. The order is also intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities access to public information and public participation.

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

# 3.12.1 Affected Environment

The study area includes the proposed road corridor and Whittier, the closest community to the project area. Whittier contains many opportunities for recreation in the vicinity of the proposed project area, and tourism is a large part of the local Whittier economy. Currently, Whittier has 280 year-round residents that live mainly in Begich Towers and an annual visiting population of over 700,000 (Alaska Department of Labor and Workforce Development 2020; City of Whittier 2018).

The U.S. Census Bureau estimates that 12.3% of Whittier's population are below the poverty level. Approximately 46.9% of the population identified as white; 23.3% as Asian; 8.1% as American Indian and Alaska Native; 4.7% as Native Hawaiian and Other Pacific Islander; 2.0% as Black or African American; 13.7% as two or more races (White, American Indian and Alaska Native, Asian, Black or African American, or other); 9.6% as Hispanic or Latino (U.S. Census Bureau 2019). Table 3-7 shows basic demographic and economic data for Whittier as compared to Alaska and the United States.

		United States	Alaska	Whittier
	White	73.0	65.3	46.9
	Black or African American	12.7	3.2	2.0
Race (%)	Alaska Native and American Indian	0.8	14.2	8.1
	Asian	5.4	6.2	23.3
	Native Hawaiian and Other Pacific Islander	0.2	1.2	4.7
	Two or more of other races listed	3.1	8.5	13.7
ata	Average per capita income	\$31,177	\$35,065	\$22,938
lic D	Median Household Income	\$57,652	\$76,114	\$50,156
non	Civilian Labor Force Unemployment Rate (%)	6.6	7.7	21.0
Ec	% Below Poverty Level (Individuals)	14.6	10.2	12.3

Table 3-7. Demographic and Economic Data; United States, Alaska, and Whittie	r
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Source: American Community Survey 2013-2017 5-Year-Estimates (U.S. Census Bureau 2019)

## 3.12.2 Environmental Consequences – No Action Alternative

Under the No Action Alternative, minority and low-income Whittier residents would experience the same impacts anticipated for other individuals in the area. Therefore, the No Action Alternative would not result in disproportionate impacts to these populations.

# 3.12.3 Environmental Consequences – Proposed Action Alternative

## **Direct and Indirect Impacts**

Construction activities are not expected to impact local schools, police, fire protection, access to local medical services, or local utilities. Traffic volumes could temporarily increase during construction while bringing materials and equipment to the project site, but as almost all Whittier residents live in the same building, no one group would be disproportionately affected by the increased traffic. Additionally, project construction could provide short term employment opportunities for all Whittier residents.

The Proposed Action would not result in disproportionately high and adverse effects on environmental justice populations in the project area or in the nearby community of Whittier. No residents or businesses would be displaced or relocated as result of the project. Any long-term project-related impacts or benefits and temporary construction-related impacts would affect all community members equally.

## **Cumulative Impacts**

As the Proposed Action does not have an adverse permanent impact on social or economic resources or environmental justice populations, it would not contribute to cumulative impacts to these resources.

## **Mitigation Measures**

Though no impacts to minority or low-income populations are expected, the following mitigation measures may be used to maintain public involvement in conjunction with the project:

- Construction schedules and other relevant information will be posted in public areas around Whittier such as the City office and the bulletin board at Begich Towers.
- Project information materials will be provided in languages other than English, if requested.