2 PROJECT ALTERNATIVES

This chapter describes the reasonable alternatives evaluated in this Final[1] Supplemental Environmental Impact Statement (SEIS) and provides information on the screening process used to select these alternatives. The chapter is divided into five sections: Alternative Screening, Alternatives Determined Not Reasonable, Reasonable Alternatives, Identification of the Preferred Alternative, and Funding Considerations.

2.1 Alternative Screening

Alternatives for the 2005 Supplemental Draft EIS were screened in fall 2003 after the scoping process. The alternative screening process used specific criteria to evaluate alternatives and determine the range of reasonable alternatives. The list of alternatives to be screened was derived from the following Juneau Access Improvements (JAI) Project documents:

- The 1994 *Reconnaissance Engineering Report* (DOT&PF, 1994b)
- The 1997 Draft EIS (DOT&PF, 1997)
- The 1999 DOT&PF *Preferred Alternative Report* (PAR; DOT&PF, 1999)

Alternatives were screened using four criteria.

- Criterion I – Cost/Technical Feasibility and Common Sense. Using professional judgment and cost data from previous analyses, the alternatives were screened to determine if they would be economically and/or technically feasible or go against common sense.
- Criterion II – Appropriateness and Unnecessary Variations. Alternatives were screened to determine if certain variations were unnecessary to consider a full spectrum of alternatives.
- Criterion III – Purpose and Need. To be reasonable, an alternative must at least partially meet a majority (three or more) of the five Purpose and Need elements. Alternatives were screened with regard to the Purpose and Need elements as follows:
    - Element 1 – Meet Future Capacity Needs. An alternative should provide sufficient capacity to meet the projected traffic demand for that mode.
    - Element 2 – Provide Flexibility and Opportunity for Travel. An alternative should provide for more round-trips per day from Juneau to Haines and Skagway than the No Action Alternative.
    - Element 3 – Reduce Travel Time. An alternative should have a quicker one-way travel time between Juneau and Haines/Skagway than the travel time of the No Action Alternative.
    - Element 4 – Reduce State Annual Costs for Transportation in Lynn Canal. An alternative should have estimated annual maintenance and operations (M&O) costs that are less than the 1997 M&O estimated costs for the No Action Alternative. (The 2004 No Action Alternative M&O cost estimates were unknown at the time of this screening.)

[1] This SEIS is based on the 2014 Draft SEIS and substantive changes have been highlighted in gray for easy identification by the reader.

  - Element 5 – Reduce User Cost. An alternative should have a lower one-way travel cost between Juneau and Haines/Skagway than the current cost under the No Action Alternative. (The No Action Alternative costs were estimated from the Summer 2003 Alaska Marine Highway System (AMHS) ferry schedule.)
- Criterion IV – Environmental Factors. This screening process used information regarding specific social environment, physical environment, and biological environment impacts to determine if an alternative has an impact so great that it should not be considered reasonable. These environmental impact factors included cultural resources, lands protected by Section 4(f) of the 1966 Department of Transportation Act, Congressionally designated wilderness, Wild and Scenic Rivers, bald eagle nest trees, threatened and endangered species, and special aquatic sites.

A detailed discussion of the 2003 screening process and figures depicting the screened alternatives presented can be found in the *Alternative Screening Report* (Appendix A) of the 2005 Supplemental Draft EIS.

2.2 Alternatives Determined Not Reasonable

2.2.1 Taku River Valley Highway

This alternative would construct a 118-mile-long highway from the end of Thane Road in Juneau, northeast along the Taku Inlet, across the Alaska-Canada border, up the Taku River Valley, along the Sloko and Pike River Valleys, and connecting to Canadian Highway 7 south of Atlin, British Columbia (B.C.) (Figure 2-1; all Chapter 2 figures are at the end of the chapter). Under this alternative, mainline ferry service would continue in Lynn Canal.

In 1993, the B.C. Minister of Transportation was contacted regarding Canada's interest in the Taku River Valley Highway. At that time, B.C. indicated it did not support pursuit of this alternative.

In 2003, the B.C. Minister of Transportation was once again contacted to determine if B.C. was still opposed to this alternative. The October 2, 2003, response indicated that B.C. is not interested in the Taku River Valley Highway. An alternative that involves construction in, and access to, a province of a foreign country that does not have the support of the government of that province fails the common sense test and is not a reasonable alternative. This alternative also does not directly address the Purpose and Need Statement of improved transportation to and from Juneau in Lynn Canal. The alternative was dropped from further consideration.

2.2.2 Goldbelt – Ferry Shuttle Service from Cascade Point

The *Echo Cove Master Plan* (Goldbelt, 1996) identified a development opportunity to construct a highway from the end of Glacier Highway at Echo Cove to Cascade Point. A ferry terminal would be constructed at Cascade Point, and a private high-speed ferry would operate between Cascade Point and Haines/Skagway. This alternative would be a private-sector action that could not be compelled by the State of Alaska in terms of assuring its construction, continuation, or level of service. Therefore, the State could not rely on it as a long-term transportation solution on this National Highway System (NHS) route. Goldbelt is no longer pursuing the development of a private vehicle ferry to Haines and Skagway; however, the Glacier Highway has been extended 3 miles to Cascade Point (see Section 1.2.3). Potential development of private ferry service in Lynn Canal is not a reasonable alternative.

2.2.3 Haines-Skagway Intertie

This alternative would construct a highway from the northern end of Glacier Highway around Berners Bay to Katz Point north of the Katzehin River delta. A ferry terminal would be constructed at Katzehin, and a shuttle ferry would operate between Katzehin and the Lutak Ferry Terminal in Haines. A new highway would be constructed between the end of the road in Lutak Inlet and Dyea Road in Skagway.

The purpose and need for the JAI Project is to improve transportation to and from Juneau in Lynn Canal. An alternative that has a very costly road component connecting Haines and Skagway would be primarily a Haines-Skagway access improvement project, not a Juneau access improvement project. The Haines-Skagway intertie is not considered a reasonable alternative for the JAI Project because it addresses a different purpose and need.

2.2.4 East Lynn Canal Highway with Bridge to Haines

This alternative would construct a highway from the northern end of Glacier Highway around Berners Bay to Skagway. An approximately 7,000-foot-long bridge would be constructed from the north end of the Katzehin River delta across Chilkat Inlet to Battery Point, south of Haines. (Because Battery Point is located in Chilkat State Park, Section 4(f) constraints could require an even longer bridge.)

Water depths, bridge span lengths, and the need to accommodate large-vessel passage (including cruise ships) at this location dictate a high-clearance suspension bridge or a floating structure with an opening span. Construction costs associated with a structure of this magnitude were estimated in the *Reconnaissance Engineering Report* to be approximately $190 million. More detailed estimates for recent bridge projects, when applied to this distance (ignoring the much greater depth), indicate a cost of close to $250 million. This additional cost would be prohibitive, adding substantially to the cost of any East Lynn Canal Highway alternative. On the basis of cost, this alternative was dropped from further consideration.

2.2.5 East Lynn Canal Rail

This alternative would construct a railroad connection from the northern end of Glacier Highway to Skagway. A ferry terminal would be constructed near Katz Point north of the Katzehin River delta, and a new shuttle ferry would run between Katzehin and the Lutak Ferry Terminal in Haines.

An East Lynn Canal Rail alternative was partially analyzed in the 1997 Draft EIS. At that time, the Alaska Department of Transportation and Public Facilities (DOT&PF) compared a typical segment of road and the corresponding railroad construction costs and determined that the East Lynn Canal Rail alternative more than doubled the highway comparison costs and had limited ability to meet the Purpose and Need elements. Therefore, this alternative was considered to be unreasonable in the 1997 Draft EIS.

In 2003, the analysis for a railroad connection was updated to reflect 2003 costs and standards. The conclusion of the updated analysis was the same; construction costs were more than 2.5 times higher for a railroad than for a highway. Therefore, the East Lynn Canal Rail alternative was again considered unreasonable and dropped from further consideration.

2.2.6 East Lynn Canal Highway to Katzehin with Berners Bay Shuttle Ferry (*Preferred Alternative Report* Proposal 5B)

This proposal would extend Glacier Highway from its northern endpoint to Sawmill Cove, construct ferry terminals at Sawmill Cove and Slate Cove, and operate shuttle ferries between the two ferry terminals. A highway would be constructed between Slate Cove and Katz Point north of the Katzehin River delta. A ferry terminal would be constructed at the end of the highway, and shuttle ferries would operate between the Katzehin, Lutak, and Skagway Ferry Terminals. Mainline ferry service would end at Auke Bay in Juneau.

This proposal is essentially a combination of ferry components from two other 1999 PAR proposals:

- Proposal 5A (now designated as Alternative 2A), which proposed shuttle service across Berners Bay
- Proposal 5D (now designated as Alternative 2B) which proposed a terminal at Katzehin with shuttles to both Haines and Skagway

Proposal 5B was evaluated in the PAR in response to concerns raised about impacts of a road through Berners Bay and concerns about favoring Skagway at the perceived expense of Haines with a road link to Skagway. The alternative was rated relatively low in the PAR because of its combination of high construction cost and high operating cost, as well as comparatively long travel times and high user fees. It was determined to be unreasonable during 2003 screening as an unnecessary variation that also did not pass the common sense test because it required all travelers to take two ferries separated by a highway link. With Alternative 2A determined not reasonable in 2005 due to Section 4(f) impacts, the Berners Bay shuttle concept is no longer part of any reasonable alternative. Sufficient analysis has occurred on Alternative 2A for DOT&PF and cooperating agencies to determine that the use of shuttles in Berners Bay is not a reasonable way of reducing project impacts in the Berners Bay area. Therefore, the alternative remains not reasonable.

2.2.7 East Lynn Canal Highway from Katzehin to Skagway (*Preferred Alternative Report* Proposal 5C)

This proposal would extend the Glacier Highway from its northern endpoint to Sawmill Cove in Berners Bay. Ferry terminals would be constructed at Sawmill Cove and Katzehin, and the *M/V Malaspina* would operate as a day boat between the two ferry terminals. A second shuttle ferry would operate between the Katzehin and Lutak Ferry Terminals. Mainline ferry service would end at Auke Bay. A new highway would then be constructed from Katzehin to Skagway.

This alternative was proposed in 1999 specifically as a way of improving service with the *M/V Malaspina*. The *M/V Malaspina* was costly to operate on this route because the length of the route necessitated two crews. AMHS planners were investigating ways to get two round trips per day from this double crew. The PAR rated this alternative lower than the 1997 No Action Alternative because of its marginal service improvements relative to its high capital and operating costs.

This proposal is also a combination of other alternatives, in this case combining the highway extension and ferry route of Alternative 4D with a highway link from Alternative 2. Conventional vessel operation, with and without a highway extension from Echo Cove, is a part

of Alternatives 4C and 4D. An additional combination of ferry and highway links is an unnecessary variation on existing alternatives and was dropped from further consideration.

2.2.8 Original Marine Alternative 4, Options A through D

The original marine options in the 1997 Draft EIS were based on improving service in Lynn Canal with the marine technology prevalent in the mid-1990s. All four options utilized the same vessel, the high-speed Wavepiercer catamaran, capable of carrying 105 vehicles. The differences between options were summer starting points (Auke Bay versus Berners Bay) and additional versus supplemental service. The latter difference is primarily an operations issue. Typically, AMHS operational changes occur at the discretion of the AMHS from season to season and are not a federal action subject to the National Environmental Policy Act (NEPA). However, because the number of vessels required for Lynn Canal service is dependent on whether mainline ferries continue in the corridor, this potential change in operation was captured in two marine options in the 1997 Draft EIS.

Based on 1997 Draft EIS comments, 2003 scoping comments, and AMHS experience and direction in following years, the original marine options were modified for the 2005 Supplemental Draft EIS and 2006 Final EIS. The new marine alternatives introduced in the 2005 Supplemental Draft EIS and 2006 Final EIS retained the different potential summer supplemental service locations (Auke Bay versus Berners Bay), but dropped the issue of mainline service level in favor of analyzing high-speed shuttle ferries versus conventional-speed shuttles. This approach reflected several developments at the time:

- Both AMHS and the Inter-Island Ferry Authority (IFA) had recent experience operating day boats (vessels operating point to point and returning to the same port every night rather than 24-hour operation), and there was increased public interest in this type of operation.
- AMHS experimented with turning some mainliners around in Juneau in hopes of moving through-corridor traffic onto another vessel, with poor results. For this reason and due to scheduling concerns, it is likely that as long as there are mainline ferries there will always be some mainline service in Lynn Canal absent a highway connection.
- AMHS had designed and constructed two fast vehicle ferries (FVFs), which are much different than the 105-vehicle ferry analyzed in the 1997 Draft EIS and designed specifically for Southeast conditions.

As with the highway alternative alignment adjustments that occur to reduce impacts or utilize new information, new Alternatives 4A through 4D (see Sections 2.3.5 through 2.3.9) replace the original marine options from the 1997 Draft EIS. The original marine options are variations that are no longer relevant, and therefore were dropped from further consideration.

2.2.9 Alternatives Determined Not Reasonable After Publication of the 2005 Supplemental Draft EIS

Alternatives 2, 2A, and 2C were evaluated as reasonable in the 2005 Supplemental Draft EIS but were dropped from consideration in the 2006 Final EIS after the Federal Highway Administration (FHWA) determined they would take Section 4(f) protected lands within the Skagway and White Pass District National Historic Landmark (NHL). The NHL includes natural areas that were determined by the National Park Service (NPS) to be contributing factors of the historic landmark designation, which led to FHWA's determination that the natural areas are

protected under Section 4(f). The alignments of Alternatives 2, 2A, and 2C could not be shifted to avoid the natural areas of the NHL (see Chapter 6 for more information on the Section 4(f) applicability determination). The original alternative screening criteria included Section 4(f) impacts because DOT&PF and FHWA recognized that, given the project purpose and need and the existence of reasonable alternatives without 4(f) impacts, a 4(f) impact could render an alternative unconstructable. Based on the Section 4(f) applicability determination, these alternatives were determined to be not reasonable.

East Lynn Canal Highway with Katzehin Ferry Terminal (2005 Supplemental Draft EIS Alternative 2) – This alternative would construct a 68.5-mile-long highway from the end of Glacier Highway at the Echo Cove boat launch area around Berners Bay to Skagway (Figure 2-2; note that a 3-mile segment of roadway from Echo Cove to Cascade Point has since been constructed [see Section 1.2.3]). A ferry terminal would be constructed north of the Katzehin River delta, and operation of the Haines-Skagway shuttle would change to shuttle service between Katzehin and the Lutak Ferry Terminal in Haines. Mainline ferry service would end at Auke Bay in Juneau, and the existing Haines-Skagway shuttle service would be discontinued. The *FVF Fairweather* would be redeployed on other AMHS routes. The highway from Auke Bay to Skagway and the shuttle ferry service from Katzehin to Haines would become the NHS routes in Lynn Canal.

East Lynn Canal Highway with Berners Bay Shuttle (2005 Supplemental Draft EIS Alternative 2A) – This alternative would construct a 5.2-mile-long highway from the end of Glacier Highway at Echo Cove to Sawmill Cove in Berners Bay (Figure 2-3; note that a 3-mile segment of roadway from Echo Cove to Cascade Point has since been constructed [see Section 1.2.3]). A ferry terminal would be constructed at both Sawmill Cove and Slate Cove, with shuttle ferries operating between them. A 52.9-mile-long highway would be constructed between Slate Cove and Skagway. A ferry terminal would be constructed at Katzehin, and the Haines-Skagway shuttle would operate between the Katzehin and Lutak Ferry Terminals. Mainline ferry service would end at Auke Bay, and the Haines-Skagway shuttle service would be discontinued. The *FVF Fairweather* would be redeployed on other AMHS routes. The highway from Auke Bay to Skagway, the shuttle ferry service across Berners Bay, and the shuttle ferry service from Katzehin to Haines would become the NHS routes in Lynn Canal.

East Lynn Canal Highway with Shuttle to Haines from Skagway (2005 Supplemental Draft EIS Alternative 2C) – This alternative would construct a 68.5-mile-long highway from the end of Glacier Highway at Echo Cove around Berners Bay to Skagway (Figure 2-4; note that a 3-mile segment of roadway from Echo Cove to Cascade Point has since been constructed [see Section 1.2.3]). A Haines-Skagway shuttle would continue to provide service to Haines. Mainline ferry service would end at Auke Bay, and no new terminals would be constructed. The *FVF Fairweather* would be redeployed on other AMHS routes. The highway between Auke Bay and Skagway and the shuttle ferry service between Skagway and Haines would become the NHS routes in Lynn Canal.

2.3 Reasonable Alternatives

The remaining alternatives carried forward from the 2006 Final EIS at least partially meet a majority of the Purpose and Need elements screening criteria; pass the cost, common sense, and appropriateness tests; and have no known environmental impacts that would render them unreasonable alternatives. In compliance with NEPA requirements, a No Action Alternative is included in the range of alternatives to be evaluated.

Since the 2006 Final EIS was published, there have been other changes that have resulted in changes to the reasonable alternatives. These changes include:

- Between 2006 and 2012, the *FVF Fairweather* did not operate in Lynn Canal on a regular schedule. It was, however, used in Lynn Canal in summer to support special events, roughly one or two times per month, May through September. This operating environment was in place during the development of the alternatives considered in the 2014 Draft SEIS. In 2015, the *FVF Fairweather* operated in Lynn Canal 3 days per week in summer.
- In 2006, the AMHS planned to have the *M/V Aurora* start Haines-Skagway shuttle service in 2007; however, when the *FVF Fairweather* was moved to the Sitka route, the *M/V Malaspina* was made a summer day boat in Lynn Canal and provided excess capacity between Haines and Skagway. The *M/V Aurora* was deployed to Prince William Sound.
- Two new Day Boat ACFs were planned and programmed as additions to the AMHS fleet and are currently under construction. Acquisition and deployment of these ferries are State actions independent from the JAI Project. They represent a change in the programmed assets available in Lynn Canal. The reasonable alternatives have been updated to incorporate the Day Boat ACFs where appropriate.
- In 2009, the U.S. District Court ruled that the 2006 JAI Project Final EIS was not valid because it did not consider an alternative that would improve surface transportation in Lynn Canal by utilizing existing AMHS assets. The DOT&PF appealed the District Court ruling to the U.S. Court of Appeals for the 9th Circuit, and in May 2011, the three-judge panel upheld previous Court decisions because the 2006 Final EIS did not include an alternative that would improve transportation using existing assets.

  As a result of these legal proceedings, DOT&PF and FHWA initiated preparation of the 2014 Draft SEIS to include an alternative that satisfies the Court order. The new alternative, "Alternative 1B - Enhanced Service with Existing Alaska Marine Highway System Assets," is a Transportation System Management alternative that includes improvements that rely on existing ferry assets and explores other system enhancements. Alternative 1B and its development are described in Section 2.3.2. Its impacts are assessed in Chapter 4.

All reasonable build alternatives include at least one ferry link. The parameters of the marine segments control the capacity and flexibility provided by the alternatives, and the marine segments have a large effect on travel time and costs. Capacity needs to be based on demand, but demand is affected by the type of service, and varies throughout the year[2]. To best meet the

[2] Each of the reasonable alternatives satisfies the purpose and need to varying degrees in that each provides greater capacity than Alternative 1 - No Action and each has been designed to accommodate the demand that would occur

Purpose and Need elements while not inflating costs, the marine portions of each alternative have been designed to meet the projected average summer demand (not peak demand) for each alternative, while providing for greater trip frequency than the No Action Alternative. Larger vessels, more vessels, and longer operating schedules could provide greater capacity and flexibility, but at a greater cost. To address capacity and cost equitably, ferry service for each marine segment that does not use the Day Boat ACFs is based on the projected 2055 average summer daily traffic for the marine segment(s) of that alternative. To provide reasonable frequency of service with the least cost to the State, summer ferry service is generally provided for 14 to 16 hours each day, with less-frequent service in the winter. For the projected 2055 average summer daily traffic, see the *Traffic Forecast Report* (Revised Appendix AA). See the *Marine Segments Technical Report* (Revised Appendix GG) for more details on potential crewing for ferry segments of alternatives. Table 2-1 lists the reasonable alternatives and their numeric designations.

Table 2-1:
Reasonable Alternatives Evaluated in the Final SEIS

Alternative Title	Numeric Designation
No Action Alternative	Alternative 1
Enhanced Service with Existing Alaska Marine Highway System Assets	Alternative 1B
East Lynn Canal Highway to Katzehin with Shuttles to Haines and Skagway	Alternative 2B
West Lynn Canal Highway	Alternative 3
Fast Vehicle Ferry Service from Auke Bay	Alternative 4A
Fast Vehicle Ferry Service from Berners Bay	Alternative 4B
Conventional Monohull Service from Auke Bay	Alternative 4C
Conventional Monohull Service from Berners Bay	Alternative 4D

The following descriptions of the reasonable alternatives include information on key parameters for the project purpose and need: capacity, travel time, travel frequency, and cost (design, construction, maintenance, operation, and total project life cost). All travel times between Juneau and Haines and Juneau and Skagway presented in this discussion were calculated from Auke Bay in order to provide a consistent measure of travel time for each alternative. The travel time ending point in Haines is downtown Haines (the intersection of Third Avenue and Main Street) and the ending point in Skagway is the Skagway Ferry Terminal.

The alternative descriptions and cost estimates include all construction required for implementation of the alternatives. No improvements to connecting facilities would be required, although construction and operation of a build alternative could accelerate the scheduling of improvements to adjacent facilities. Initial construction costs have been updated based on 2016 estimates. All maintenance, operation, and total project life cost[3] values are expressed in 2016 dollars.

given differences in attributes such as cost, travel time, and convenience. There is an underlying latent demand for travel in the corridor (unconstrained demand) and more or less of that demand will be realized with each alternative, depending on the attributes of that alternative.

[3] The total project life cost is the summation of the annual expenses and revenues over the lifetime of the facility.

2.3.1 Alternative 1 – No Action (Preferred Alternative)

Alternative 1 – No Action includes a continuation of mainline[4] ferry service in Lynn Canal and incorporates two Day Boat ACFs previously programmed for construction by AMHS. See Figure 2-5. Alternative 1 – No Action is not a direct continuation of 2017 ferry service. Rather, it is a continuation of the AMHS's *current plan* and reflects the most likely AMHS operations in the absence of any capital improvements specific to the JAI Project. The following assumptions are incorporated in Alternative 1 – No Action:

1. No new roads or ferry terminals in Lynn Canal would be built, and there would be no improvements to existing facilities beyond those already programmed.
2. Previously programmed improvements[5] that are part of Alternative 1 – No Action would be:
    a. Use of two Day Boat ACFs. One Day Boat ACF would sail between Auke Bay and Haines, while the other would sail between Haines and Skagway. Travelers going between Auke Bay and Skagway on the Day Boat ACFs would be required to transfer ferries in Haines. Other AMHS ferries that are currently operating as summer day boats in Lynn Canal will be deployed elsewhere in the system.
    b. Programmed improvements to vehicle and passenger staging areas at the Auke Bay and Haines Ferry Terminals to optimize traffic flow on and off the Day Boat ACFs.
    c. Programmed expansion of the Haines Ferry Terminal to include a new double bow berth[6] for bow loading/unloading of the Day Boat ACFs.
3. Mainline ferries would continue to serve northern Lynn Canal.
4. The AMHS would continue to be the NHS route between Juneau and Haines/Skagway.

Capacity – Alternative 1 traffic capacity would be determined by the combination of mainline and Day Boat ACF sailings.[7] Mainline vessel capacity ranges from 80 to 134 vehicles one way, with an assumed two round trips per week in summer and one round trip in winter traveling Auke Bay-Haines-Skagway-Haines-Auke Bay. Summer mainline ferry service would be provided by one *Matanuska/Malaspina* class ferry (88-vehicle capacity) and one *M/V Columbia* (134-vehicle capacity) trip per week[8,9,10,11]. Winter mainline ferry service would be provided by

[4] Mainline ferry service consists of larger vessels that travel the length of the system from Bellingham, WA or Prince Rupert, B.C., in the south to Haines and Skagway in the north. The vessels have overnight accommodations for passengers and crew. Smaller vessels that are referred to as "day boats" connect smaller communities with each other and with the mainline routes.

[5] Unless otherwise specified, all three of the programmed improvements are assumed to be part of the other alternatives under consideration.

[6] A berth is a space for a ferry to dock at a terminal. Berths can have different configurations depending on the location of the ferry vehicle door to be used. For efficient operations, Haines needs to accommodate loading/unloading from the ACF's bow doors.

[7] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

[8] Since the 2014 Draft SEIS was published, the reported AMHS capacities of several ferries in the AMHS fleet had changed slightly (http://www.dot.state.ak.us/amhs). For consistency with the 2014 Draft SEIS, the capacity numbers in the 2014 Draft SEIS were retained for this Final SEIS. The traffic analysis relied on capacities reported in the 2014 Draft SEIS.

[9] AMHS. 2015. Our Fleet: M/V Matanuska. http://www.dot.state.ak.us/amhs/fleet/matanuska.shtml.

[10] AMHS. 2015. Our Fleet: M/V Malaspina. http://www.dot.state.ak.us/amhs/fleet/malaspina.shtml.

[11] AMHS. 2015. Our Fleet: M/V Columbia. http://www.dot.state.ak.us/amhs/fleet/columbia.shtml.

a *Matanuska/Malaspina* class ferry. For the purposes of determining available capacity, mainline ferry capacity has been apportioned 60 percent to Haines and 40 percent to Skagway, based on historical usage. The one-way capacity of the Day Boat ACFs would be 53 vehicles each. The capacity of the Day Boat ACFs has been apportioned based on the percentage of traffic demand in Lynn Canal to Haines and Skagway. Table 2-2 presents the capacity of Alternative 1 – No Action based on these assumptions.

Table 2-2:
Daily Traffic Capacity for Alternative 1

Route	Number of Vehicles
Auke Bay-Haines	
Summer	93
Winter	42
Auke Bay-Skagway[1]	
Summer	61
Winter	28

[1]Traffic between Auke Bay and Skagway on the Day Boat ACFs is required to transfer ferries in Haines.

Travel Time – The one-way trip times for Alternative 1 are shown in Table 2-3. Times shown in the table include ferry time and driving time (if appropriate). Ferry time consists of waiting time, check-in and loading time, transit time, and unloading time. Check-in time covers the time the AMHS requires for vehicles to be present at the dock prior to loading. Check-in time for the mainline ferry is 2 hours, and it is 1 hour for a Day Boat ACF.

Table 2-3:
Travel Times for Alternative 1 – No Action

Route		Travel Time (hours)	
		Via Mainline Ferry	Via Day Boat ACF
Auke Bay-Haines	Drive Time	0.1	0.1
	Ferry Time (including check-in, transit, and unloading)	7.1	6.1
	Total	7.2	6.2
Auke Bay-Skagway	Drive Time	0	0
	Ferry Time (including check-in, transit, and unloading)	9.1	8.1
	Total	9.1	8.1

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

Travel Frequency – The opportunity to travel between Auke Bay and Haines or Skagway would depend on the frequency of mainline ferry and Day Boat ACF service. The travel frequency for Alternative 1 is shown in Table 2-4.

Table 2-4:
Travel Frequency for Alternative 1 – No Action

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer	1.2	8
Winter	0.7	4
Auke Bay-Skagway		
Summer	1.2	8
Winter	0.7	4

Cost –The annual M&O costs would be $18.2[12] million: $7.3 million for mainline ferry service, $6.4 million for Day Boat ACF service between Auke Bay and Haines, and $4.5 million for Haines-Skagway shuttle service.[13] The estimated total project life cost less residual value is $787 million. The ferry fares[14] for Alternative 1 – No Action are shown in Table 2-5.

Table 2-5:
Ferry Fares for Alternative 1 – No Action

Route	Auke Bay-Haines	Auke Bay-Skagway
Adult Ferry Passenger	$39.00	$53.00
19-foot Vehicle	$90.00	$116.00

The net State cost per vehicle would be $279.

Alternative 1 – No Action includes some approved projects that have not yet been constructed as of the printing of this Final SEIS. These improvements are for the AMHS as a whole, are a State action independent of the JAI Project, and will occur regardless of any action that may result from the JAI Project. As such, the costs of these independent actions are not attributed to Alternative 1 – No Action or any JAI Project alternative.

2.3.2 Alternative 1B – Enhanced Service with Existing Alaska Marine Highway System Assets

Alternative 1B is a Transportation System Management alternative that includes operational improvements that focus specifically on increasing the service provided by the transportation system (including programmed improvements and other system enhancements) within Lynn

[12] Revised total is due to (1) updating costs to 2015 dollars and (2) a discrepancy in the data relied on to generate the 2014 Draft SEIS mainliner operating costs.
[13] Due to rounding, numbers may not add up precisely to the total.
[14] The methodology used to calculate the fares is documented in Appendix A of the *Traffic Forecast Report* (Revised Appendix AA of this Final SEIS).

Canal using existing AMHS assets. This alternative was not evaluated in the 2006 Final EIS, but was developed in response to the 2009 U.S. District Court order (see Section 2.3). Figure 2-6 illustrates Alternative 1B.

Development of Alternative 1B[15] – In keeping with the Court order, DOT&PF and FHWA developed Alternative 1B based on the following objectives:

- Rely on existing ferry assets and terminals, without new construction
- Consider reassigning mainline vessels
- Provide additional capacity as compared to Alternative 1 – No Action
- Adjust schedules and increase frequency as compared to Alternative 1 – No Action
- Reduce travel time as compared to Alternative 1 – No Action
- Include system enhancements

The process began by coordinating with AMHS staff to review existing ferry assets and terminals and to consider and evaluate the following three components for Alternative 1B:

- Existing AMHS assets reasonably available and feasible for use in Lynn Canal
- Programmed AMHS assets (i.e., AMHS programmed improvements that will be implemented regardless of the outcome of the JAI Project)
- Enhancements that could be employed as part of Alternative 1B that do not involve capital investments

The resulting alternative was presented to agencies and the general public during the JAI Project Draft SEIS 2012 scoping period. Following the scoping period, Alternative 1B was modified for analysis in the 2014 Draft SEIS to reflect the following events:

- In 2006, AMHS began the process toward building a new class of ferry to provide day boat shuttle service in the southeast part of the ferry system. As the design developed over time, the length of the vessel, designated as an ACF, grew to 350 feet, and crew quarters and a full dining facility were added. With these changes, the vessel was no longer a day boat shuttle ferry. The cost of this 350-foot ACF was estimated at $170 million. In December 2012, the Governor announced that the AMHS would pursue plans to build two smaller, less-costly State-funded ACFs instead of one large ACF. The smaller ACFs are referred to as Day Boat ACFs. Both ferries will have a capacity of approximately 300 passengers and 53 vehicles. This change in direction in the ACF program was made to develop vessels that better meet AMHS needs in Southeast Alaska and was a State action independent from the JAI Project. This decision meant that two new programmed ferries would be available for use in Alternative 1B, instead of just one[16].

[15] The following three paragraphs and associated bullets were initially located in Section 2.2.10 of the 2014 Draft SEIS and have been added as needed (revisions to the 2014 Draft SEIS text are shaded gray).

[16] This decision also required Alternative 1 – No Action to be modified to reflect the availability of two new ferries instead of one. Other changes that occur in Alternative 1 – No Action as a result of this decision include improved vehicle and passenger staging areas at the Auke Bay and Haines ferry terminals to optimize traffic flow on and off the Day Boat ACFs, and the expansion of the Haines Ferry Terminal to include a new double bow berth.

- In March 2013, litigation regarding recurrent problems with the engines of the *FVFs Fairweather* and *Chenega* was resolved[17]. Essentially the engines had not been designed to run at the speeds needed to make the two runs between Juneau and Haines/Skagway in a 12-hour window as needed for day boat service in Lynn Canal. Having a FVF make only one round trip per day in Lynn Canal was considered unreasonable since there are other vessels that can also make one trip per day and the *FVF Fairweather* was needed for same time of day service to Sitka[18]. Extending the operating day beyond 12 hours and maintaining daily service is not possible without crew quarters[19]. Based on this development, DOT&PF and FHWA determined that their earlier consideration to use the *FVF Fairweather* as part of Alternative 1B needed to be revised.
- During scoping in 2012, many commenters expressed concern over the loss of fast ferry service to Sitka and Petersburg that would result from using the *FVF Fairweather* in Lynn Canal. Many believed that the use of the *FVF Fairweather* would improve service in Lynn Canal at the expense of other routes in Southeast Alaska. This, in combination with the engine problems identified in the second bullet above, contributed to removing the *FVF Fairweather* from Alternative 1B.

Since the 2014 Draft SEIS was published, AMHS has made several changes that affect Alternative 1B and require reconsideration of the alternative's composition, including the following:

- Due to funding levels, AMHS has taken the *M/V Taku* out of service; it has been retired and sold.
- AMHS has placed the *FVF Chenega* in long-term layup. The *FVF Chenega* could return to AMHS service if AMHS determines there is a need for it and they have the funding to operate it. Returning the *FVF Chenega* to service from long-term storage would require an up-front refurbishment. Given that the *FVF Chenega* is currently laid up, it could be deployed without decreasing service elsewhere in the AMHS system.
- DOT&PF is currently in the process of replacing the *M/V Tustumena*. The *M/V Tustumena* was built in 1964 and serves the communities of Southcentral Alaska, Kodiak Island, and Southwest Alaska. The *M/V Tustumena* is in poor condition and is past its useful life. It is one of two ocean-class vessels in the AMHS fleet. Because of its size and design, it is the only AMHS vessel that is capable of serving all 13 ports of call between Homer and Unalaska. The replacement vessel is designed to meet these needs

[17] In 2010, the State sued the engine manufacturer and the contractor responsible for the design and construction of the two FVFs based on recurrent problems with the ferries' diesel engines.

[18] At the time the Draft SEIS was prepared, the *FVF Fairweather's* primary purpose was to service Sitka. Since then, the AMHS schedule has changed. AMHS is currently operating the *FVF Fairweather* in Lynn Canal 3 days per week and servicing Sitka one day per week.

[19] According to USCG rest requirements, to have a replacement crew on board, crew quarters must be available to ensure adequate crew rest. The FVFs do not have crew accommodations that would permit this, so crews would have to change while the ferry is docked. In addition, certain activities, such as maintenance, fueling, refilling potable water tanks, and emptying sewage holding tanks, have to be done on a daily basis. Currently, in Lynn Canal, Auke Bay is the only terminal where all of these activities can be performed. In Skagway, ferries can refuel and refill water. DOT&PF plans to improve the Skagway Ferry Terminal so it can handle sewage. To perform all of these activities in Haines, and some services in Skagway, the terminals would need to be upgraded, which would require up-front capital investment (not in keeping with the directive from the court).

and has slightly more capacity. The project is in the current STIP with construction scheduled to start in 2018.

- Between 2005 and 2012, AMHS had planned to retire the *M/V Malaspina* and replace it with a new ferry (now the Day Boat ACF). AMHS has reconsidered its decision to retire the *M/V Malaspina* and now plans to keep it as part of its fleet, using it during shoulder seasons as a backup vessel, but laying it up during summers. It remains an existing asset that could be deployed as part of Alternative 1B during the summer.
- AMHS made substantial improvements to its online reservation system, including enhancing the reservation website to make it easier to use. As a result, Alternative 1B no longer includes additional enhancements to the reservation system. In addition, as the majority of AMHS reservations are now made through the website rather than through the reservation call center, having the reservation call center operate with extended hours is not likely to result in additional reservations or better customer service. As a result, Alternative 1B no longer includes extending the reservation call center hours by four per day.

In addition, comments on the 2014 Draft SEIS indicated that many people were concerned about capacity on the Auke Bay-Haines route. Also, commenters suggested operational improvements that DOT&PF and FHWA have partially incorporated into Alternative 1B. One key change to Alternative 1B was an increase in the Day Boat ACF sailings between Auke Bay and Haines from six round trips per week to seven round trips. In addition, the routing of the *M/V Malaspina* was modified to provide additional service to Haines. As proposed in this Final SEIS, the *M/V Malaspina* would sail between Skagway and Auke Bay 5 days per week; on the sixth day, it would sail Skagway-Haines-Auke Bay-Skagway, and on the seventh day is would sail the reverse (Skagway-Auke Bay-Haines-Skagway).

For information about how Alternative 1B was developed, see Revised Appendix CC, *Development of Alternative 1B – Enhanced Service with Existing Alaska Marine Highway System (AMHS) Assets*, of this Final SEIS. It reflects the current status and availability of ferries (existing assets) in the AMHS fleet.

Alternative 1B would incorporate all of the programmed improvements described under Alternative 1 and, as with Alternative 1, no new roads or terminals would be built.

Alternative 1B would provide an increase in summer capacity and number of sailings in Lynn Canal by using the two Day Boat ACFs in addition to the *M/V Malaspina* (rather than removing the *M/V Malaspina* from summer service in Lynn Canal, as is assumed under Alternative 1 – No Action). Alternative 1B would include a continuation of mainline ferry service in Lynn Canal. Fares would be reduced 20 percent for Day Boat ACF and *M/V Malaspina* trips in Lynn Canal to increase ridership.

Mainline service would include two round trips per week in summer and one per week in winter, with Auke Bay-Haines-Skagway-Haines-Auke Bay routing. During summer, the *M/V Malaspina* would make one round trip per day, 5 days per week on a Skagway-Auke Bay-Skagway route. On the sixth day, the *M/V Malaspina* would sail on the Skagway-Auke Bay-Haines-Skagway route, and on the seventh day, it would sail that route in reverse (Skagway-Haines-Auke Bay-Skagway). One Day Boat ACF would make one round trip between Auke Bay and Haines 7 days per week. The other Day Boat ACF would make two round trips per day between Haines and Skagway 6 days per week; it would not sail on the seventh day because the mainliner would be

on a similar schedule. In winter, ferry service in Lynn Canal would be provided primarily by the Day Boat ACFs three times per week.

Under Alternative 1B, the AMHS would continue to be the NHS route between Juneau and Haines/Skagway.

Capacity – Alternative 1B summer traffic capacity[20] would be determined by a combination of Day Boat ACF, mainline ferry, and *M/V Malaspina*[21] sailings. Mainline vessel capacity ranges from 80 to 134 vehicles one way, with an assumed minimum of two round trips per week in summer and one round trip in winter traveling Auke Bay-Haines-Skagway-Haines-Auke Bay. In the summer, it is assumed that there would be one *M/V Matanuska/Malaspina* class ferry (88-vehicle capacity) and one *M/V Columbia* (134-vehicle capacity) trip per week. Winter mainline ferry service is assumed to be provided by an *M/V Matanuska/Malaspina* class ferry. For the purposes of determining available capacity, mainliner capacity has been apportioned 60 percent to Haines and 40 percent to Skagway, based on historical usage. The one-way capacity of a Day Boat ACF would be 53 vehicles. In the summer, Skagway bound traffic is expected to use the *M/V Malaspina*, leaving the Auke Bay-Haines Day Boat ACF entirely available for Haines bound traffic. In the winter, there would be no direct Auke Bay-Skagway service so the capacity of the Auke Bay-Haines Day Boat ACF is apportioned based on the percentage of traffic demand in Lynn Canal to/from Haines and Skagway. Table 2-6 presents the capacity of Alternative 1B based on these assumptions.

Table 2-6:
Daily Traffic Capacity for Alternative 1B

Route	Number of Vehicles
Auke Bay-Haines	
Summer	160
Winter	42
Auke Bay-Skagway[1]	
Summer	171
Winter	28

[1]For the purposes of calculating capacity, the capacity of the *M/V Malaspina* and the mainline ferry was used in summer. In winter, the *M/V Malaspina* does not operate, so the capacity of the mainline ferry and Day Boat ACF was used.

Travel Time – The one-way trip times for Alternative 1B are shown in Table 2-7. Times shown in the table include ferry time and driving time (if appropriate). Ferry time consists of waiting time, check-in and loading time, transit time, and unloading time. Check-in time covers the time the AMHS requires for vehicles to be present at the dock prior to loading. The check-in time for the mainline ferry is 2 hours, and it is 1 hour for a Day Boat ACF and the *M/V Malaspina*.

[20] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

[21] The *M/V Malaspina* is considered a mainline ferry because it has overnight passenger and crew quarters. It belongs to the *Matanuska/Malaspina* class ferry. These ferries are virtually identical and are considered interchangeable. In the summer, it is anticipated the *M/V Malaspina* would be used as a day boat while the *M/V Matanuska* would be used as a mainline ferry. In the winter, both ferries would be used as mainline ferries.

Table 2-7:
Travel Times for Alternative 1B

Route		Travel Time (hours)		
		Via Mainline Ferry	**Via Day Boat ACF**	**Via *M/V Malaspina***
Auke Bay-Haines	Drive Time	0.1	0.1	0.1
	Ferry Time (including check-in, transit, and unloading)	7.1	6.1	6.3
	Total	7.2	6.2	6.4
Auke Bay-Skagway	Drive Time	0	0	0
	Ferry Time (including check-in, transit, and unloading)	9.1	8.1	6.8
	Total	9.1	8.1	6.8

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street). The *M/V Malaspina* times shown between Auke Bay and Skagway are for the most common routing and fastest time.

Travel Frequency – The opportunity to travel between Auke Bay and Haines or Skagway would depend on the frequency of mainline ferry, Day Boat ACF, and *M/V Malaspina* service. The round-trip travel frequency for Alternative 1B is shown in Table 2-8.

Table 2-8:
Travel Frequency for Alternative 1B

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer	1.4	10
Winter	0.7	4
Auke Bay-Skagway		
Summer	2.3	16
Winter	0.7	4

Cost – Alternative 1B would have no final design or construction cost. The annual M&O costs within Lynn Canal would be $26.5[22] million: $7.3 million for mainline ferry service, $6.7 million for Day Boat ACF service between Auke Bay and Haines, $4.5 million for Day Boat ACF service between Haines and Skagway, and $8.0 million for *M/V Malaspina* summer shuttle service. [23] The estimated total project life cost less residual value is $1.2 billion. The ferry fares under Alternative 1B are shown in Table 2-9.

[22] Revised total is due to (1) updating costs to 2015 dollars, (2) a discrepancy in the data relied on to generate the 2014 Draft SEIS mainliner operating costs, and (3) changes made to the alternative.

[23] Due to rounding, numbers may not add up precisely to the total.

Table 2-9:
Ferry Fares for Alternative 1B

Route	Auke Bay-Haines	Auke Bay-Skagway
Adult Ferry Passenger	$31.00	$42.50
19-foot Vehicle	$72.00	$93.00

The net State cost per vehicle would be $283.

2.3.3 Alternative 2B– East Lynn Canal Highway to Katzehin with Shuttles to Haines and Skagway

Alternative 2B would construct the East Lynn Canal Highway from Echo Cove to a new ferry terminal 2 miles north of the Katzehin River, with ferry service connecting Katzehin to Haines and Skagway (Figure 2-7a). The highway would be 50.8 miles long, including 47.9 miles of new highway and widening of 2.9 miles of the existing Glacier Highway from Echo Cove to Cascade Point. The highway would have a 30-foot pavement width, with two 11-foot-wide vehicle lanes and 4-foot shoulders (Figure 2-7b). The minimum design speed would be 40 miles per hour (mph)[24]. DOT&PF has revised the roadway typical section from what was presented in the 2006 Final EIS by increasing the thickness of selected material below the pavement and base structure from 12 inches to 24 inches, and by increasing the ditch width from 8 feet to 10 feet. The increase in thickness of the selected material is needed to minimize the effects of frost and preserve the integrity of the road structure. The increased ditch width is needed to accommodate subsurface drainage from the thicker selected material and provide more capacity for drainage and snow storage.

The design would meet American Association of State Highway and Transportation Officials (AASHTO) standards for a rural arterial except for the 4-foot shoulder width, which would be an exception to the 6-foot AASHTO recommended shoulder width (see the *Technical Alignment Report* [Addendum to Appendix D of the 2006 Final EIS[25]] and the *2017 Update to Appendix D – Technical Alignment Report* in Appendix Z for further information).

Ferry service between Katzehin and Haines/Skagway would use the Day Boat ACFs. Haines-Skagway shuttle service would continue to operate in the summer using a new conventional monohull ferry. Mainline ferry service would end at Auke Bay and no longer operate in Lynn Canal. The Skagway Ferry Terminal would be modified to include a new end berth to accommodate the new Katzehin-Skagway Day Boat ACF. The highway from Auke Bay to Katzehin and the ferry service between Katzehin and Haines/Skagway would become the NHS routes in Lynn Canal.

Capacity – The capacity of this alternative would depend on the shuttle ferry system at Katzehin[26]. Summer service would consist of three ferries; two Day Boat ACFs that would sail

[24] The minimum design speed is not the average travel speed on the highway. Many sections of the highway would meet substantially higher standards and therefore would be posted at 50 mph. It is expected that the average speed on the highway would be 45 mph taking into account the curves requiring a reduction to 40 mph.

[25] The Addendum was included as part of Appendix W of the 2006 Final EIS.

[26] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

between Katzehin and Haines/Skagway and a third shuttle ferry that would sail between Haines and Skagway. The Day Boat ACFs would have a 53-vehicle capacity, and the Haines-Skagway ferry would have an 18-vehicle capacity. The Haines-Skagway shuttle is sized to meet the projected increased traffic resulting from improved service in addition to existing traffic levels. The sizing of the shuttle is addressed in Revised Appendix GG, *Marine Segments Technical Report,* Chapter 4, and Attachment C. During winter, no direct Haines-Skagway shuttle would operate: one vessel would operate between Skagway and Katzehin and the second vessel would operate between Haines and Katzehin. Haines-Skagway travelers would need to ride one ferry to the Katzehin Ferry Terminal and then transfer to the other ferry. The daily traffic volumes that would be accommodated by Alternative 2B are provided in Table 2-10.

Table 2-10:
Daily Traffic Capacity for Alternative 2B

Route	Number of Vehicles
Auke Bay-Haines	
Summer	848
Winter	636
Auke Bay-Skagway	
Summer	636
Winter	424

Travel Time – The one-way trip times for Alternative 2B are provided in Table 2-11. Times shown in the table include ferry time and driving time. Ferry time consists of waiting time, loading time, transit time, and unloading time. The travel times for the ferries to and from Katzehin and between Haines and Skagway do not include check-in time because reservations would not be taken. Vehicles would be accommodated on a first-come, first-serve basis. An average waiting time is included in the travel time to account for a portion of drivers assumed to arrive well ahead of the loading schedule.

Table 2-11:
Travel Times for Alternative 2B

Route		Travel Time (hours)
Auke Bay-Haines	Drive Time	1.8
	Ferry Time (including waiting, loading, transit, and unloading)	1.5
	Total	3.3
Auke Bay-Skagway	Drive Time	1.7
	Ferry Time (including waiting, loading, transit, and unloading)	2.3
	Total	4.0

Note: For consistency, the travel times for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

Travel Frequency – Under Alternative 2B, flexibility and opportunity for travel would be a function of the frequency of Day Boat ACF service to and from the Katzehin Ferry Terminal. During the summer, the ferries to/from Katzehin would operate approximately 15 hours per day.

During the winter, the ferry to/from Haines would operate approximately 11 hours per day, and the ferry to/from Skagway would operate about 10 hours a day. The Haines-Skagway shuttle would not operate; travelers going between Haines and Skagway would travel to Katzehin and transfer ferries. Winter travel would be periodically limited by road closures for avalanche control; however, one or more ferries would be available to transport vehicles and passengers in Lynn Canal on days when the highway was closed. Trip frequency for Alternative 2B is provided in Table 2-12.

Table 2-12:
Travel Frequency for Alternative 2B

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer	8	56
Winter	6	42
Auke Bay-Skagway		
Summer	6	42
Winter	4	28

Cost – Total final design and construction costs for Alternative 2B would be approximately $680.2 million, including $619.5 million for highway design and construction, approximately $24.7 million for vessel acquisition, approximately $26.4 million for the Katzehin Ferry Terminal improvements, and approximately $9.6 million for the Skagway Ferry Terminal improvements. Annual M&O costs are estimated to be approximately $20.9 million: $2.4 million for the highway (including avalanche control costs) and $18.5 million for the shuttle ferry operations. The estimated total project life cost less residual value is $1.2 billion. The ferry fares for Alternative 2B are shown in Table 2-13.

Table 2-13:
Ferry Fares for Alternative 2B

Route	Katzehin-Haines	Katzehin-Skagway
Adult Ferry Passenger	$5.00	$8.50
19-foot Vehicle	$16.00	$25.00

The net State cost per vehicle would be $43.

Alignment – The Alternative 2B road alignment is a refinement of the 2006 Final EIS alignment and was designed to further reduce impacts to wetland habitats and to avoid and/or minimize impacts to bald eagle nest trees. It also reflects design changes based on additional geotechnical survey information. Alternative 2B would begin at Echo Cove and would involve widening Glacier Highway to Cascade Point (see Section 1.2.3). From there, the highway would generally parallel the shoreline to a point north of the Katzehin River, where a ferry terminal would be built. The route would generally be set back from the shoreline except at a few locations where topography would allow the highway to be located well inland. In some locations, topography requires placement of the alignment at the edge of tidelands. Wherever possible in these

locations, the edge of the construction area would be positioned above the high tide line to minimize marine impacts as well as reduce visual impacts. Segment details are provided in the subsections below. A more detailed description of the current alignment, the ferry terminal layout, and the design criteria for this alternative can be found in the *2017 Update to Appendix D - Technical Alignment Report* (in Appendix Z).

2.3.3.1 Echo Cove to Antler River

Along the eastern shore of Berners Bay the highway would generally be located inland from the shore to avoid disturbing trees with eagle nests and filling beach areas. Up to Cascade Creek, the highway location would use the Cascade Point Road, widening and making grade improvements as necessary. The highway would avoid the U.S. Forest Service Berners Bay cabin by passing approximately 1,000 feet east of the cabin site and approximately 500 vertical feet above it. Beyond the cabin, highway construction would involve short stretches of exposed rock cuts, with some cuts up to 150 feet high.

2.3.3.2 Head of Berners Bay

The Antler, Gilkey, Lace, and Berners rivers form a large delta at the head of Berners Bay. The bridge over the Antler River would be approximately 2,800 feet long, and the bridge over the Lace River would be approximately 2,900 feet long. Both bridges would be constructed with enough clearance to permit airboats, the largest craft currently navigating these rivers, to pass under them.

The highway through this part of Berners Bay would be set back from the ocean shoreline to avoid the intertidal habitat at the head of the bay, minimize impacts to wetlands, and reduce the lengths of the river crossings.

2.3.3.3 Lace River to Comet Landing

The highway from the west side of the Lace River to the beach near Independence Lake would cross a combination of heavily wooded uplands and forested wetlands. From Slate Cove to Point Sherman the highway would move inland to cross the Point Saint Mary peninsula and to avoid trees containing eagle nests near the shore. This segment would require fill hauled from other sections, as few rock cuts would be required.

The highway west of the Lace River would intersect the existing unpaved road (known as Jualin Road) that runs from Slate Cove to the Jualin Mine. This is a public road. Two “T” intersections would be created, separated by a short segment where the two roads would be on a common alignment. Jualin Road would have stop signs at both intersections because of its lower traffic volume.

A combination maintenance station and rest stop would be located at Comet Landing at the existing Kensington mine facilities. Coeur Alaska, Inc. has moved its mine operations to the Jualin Mine area and has agreed to negotiate the use of its Comet facility.

2.3.3.4 Independence Lake to Katzehin River

North of Comet Landing, the highway would be located close to the shore to avoid the trees with eagle nests on the hillsides, to mitigate avalanche zones, and to pass below steep cliffs. At avalanche zones with relatively high hazard indices, including north of Independence Lake and

south of Yeldagalga Creek, the highway would be constructed on intertidal areas. Three avalanche shed structures would be built to protect the highway at high avalanche hazard areas. At any location where highway construction would be near or below the high-tide line, riprap slope protection would be constructed.

Near Met Point and Gran Point the highway would be located uphill of the shoreline to avoid sea lion haulouts at these areas. The highway would be notched into the existing terrain, resulting in a natural screen between the haulouts and the highway. At two locations in the vicinity of Gran Point, the highway would be routed through two tunnels to avoid cliff hazards.

2.3.3.5 Katzehin River Area

The highway approach to the Katzehin River would be located close to the shore to avoid steep cliffs above the high-tide line. Riprap slope protection would be used to protect the highway from erosion. The bridge across the Katzehin River would be approximately 2,600 feet long and set high enough to allow airboats to pass underneath. The highway would pass inland, behind the intertidal flats north of the Katzehin River, to the location of the proposed Katzehin Ferry Terminal. This location would provide some southern wave protection, have access to deep water, and have suitable depths for a terminal area and breakwater. Rubble-mound breakwaters would be sited to the north and south of a dredged mooring basin to provide protection from predominate northerly and southerly waves. Dredged material would be incorporated into the fill for terminal parking. The terminal would include a single end berth connected by a transfer bridge to the parking and staging area.

2.3.4 Alternative 3 – West Lynn Canal Highway

Alternative 3 would widen Glacier Highway from Echo Cove to Cascade Point (see Section 1.2.3) and extend Glacier Highway from Cascade Point to Sawmill Cove in Berners Bay (5.2 miles total). New ferry terminals would be constructed at Sawmill Cove in Berners Bay and at William Henry Bay on the west shore of Lynn Canal. A new West Lynn Canal Highway (38.9 miles) would be constructed from the William Henry Bay Ferry Terminal to Haines with a bridge across the Chilkat River/Inlet (Figure 2-8). The highway would connect to the existing Mud Bay Road at Haines. The highway design features for this alternative would be the same as those described for Alternative 2B in terms of design speed and typical section.

The Day Boat ACFs would operate between the Sawmill Cove Ferry Terminal and the William Henry Bay Ferry Terminal. A new conventional monohull ferry would be constructed as part of this alternative to operate between Haines and Skagway in place of the Day Boat ACF that would be deployed between Sawmill Cove and William Henry Bay. The Skagway Ferry Terminal would be modified to include a new end berth to accommodate the Haines-Skagway shuttle ferry. Mainline ferry service would end at Auke Bay in Juneau. The highway from Auke Bay to Sawmill Cove, the ferry between Sawmill Cove and William Henry Bay, the West Lynn Canal Highway from William Henry Bay to Haines, and the ferry between Haines and Skagway would be designated as the NHS routes in Lynn Canal.

> Note: Alternative 3 originally was considered reasonable after scoping in 1994, but after detailed study was determined to be not reasonable in 1996. A user benefit analysis indicated that this alternative would have only marginal benefits. Although there was little controversy associated with dropping this alternative in 1996 and little interest expressed in this alternative in the 1997 Draft EIS comments, both resource agencies and

the public expressed interest in this alternative during 2003 scoping. This alternative met four of the five Purpose and Need elements as defined during screening and was therefore included in the range of reasonable alternatives in the 2006 Final EIS.

Capacity – Under Alternative 3, traffic capacity would be determined by the ferry system between Sawmill Cove and William Henry Bay. The Sawmill Cove-William Henry Bay route would use the Day Boat ACFs (53-vehicle capacity), with both vessels operating in the summer and one in the winter. For purposes of calculating capacity to/from Haines and Skagway, the capacities of the Day Boat ACFs have been apportioned based on the percentage of total traffic demand in Lynn Canal to Haines and Skagway. The Haines-Skagway route would use a new ferry with a 40-vehicle capacity. The Haines-Skagway shuttle is sized to meet the projected increased traffic resulting from improved service, in addition to existing traffic levels. The sizing of the shuttle is addressed in Revised Appendix GG, *Marine Segments Technical Report*, Chapter 4, and Attachment C. During winter, the Haines-Skagway shuttle would continue to operate, but only one ferry (instead of two) would sail between Sawmill Cove and William Henry Bay. The daily traffic volumes that would be accommodated by Alternative 3 are provided in Table 2-14.

Table 2-14:
Daily Traffic Capacity for Alternative 3

Route	Number of Vehicles
Auke Bay-Haines	
Summer	816
Winter	273
Auke Bay-Skagway	
Summer	456
Winter	151

Travel Time – The one-way trip times for Alternative 3 are provided in Table 2-15. Times shown in the table include ferry time and driving time. Ferry time consists of waiting time, loading time, transit time, and unloading time. The travel times for the shuttle ferries between Sawmill Cove and William Henry Bay and between Haines and Skagway do not include check-in time because reservations would not be taken. Vehicles would be accommodated on a first-come, first-serve basis; therefore, waiting time is included to account for drivers who arrive ahead of scheduled loading times.

Table 2-15:
Travel Times for Alternative 3

Route		Travel Time (hours)
Auke Bay-Haines	Drive Time	1.6
	Ferry Time (including waiting, loading, transit, and unloading)	1.6
	Total	3.2
Auke Bay-Skagway[1]	Drive Time	1.7
	Ferry Time (including waiting, loading, transit, and unloading)	3.8 NB / 3.4 SB[1]
	Total	5.5 NB / 5.1 SB[1]

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

[1]Times shown are based on average of ferry wait times. The average wait time differs northbound (NB) to southbound (SB). The Sawmill Cove-William Henry Bay ferry and the Haines-Skagway ferry would operate at different frequencies, so travelers would have to wait varying times for the second ferry connection. The NB wait time varies between 26 and 86 minutes, while the SB wait times vary between 0 and 83 minutes.

Travel Frequency – Under Alternative 3, flexibility and opportunity for travel would be determined by the shuttle ferry system. The two Sawmill Cove/William Henry Bay shuttles would operate 17 hours per day in the summer, and a single shuttle would operate 9 hours per day in the winter. The Haines-Skagway shuttle would operate 15 hours per day in summer and 10 hours per day in winter. Winter travel would also be limited by road closures for avalanche control; however, one or more ferries would be available to transport vehicles and passengers in Lynn Canal on days when the highway was closed due weather or roadway conditions. The estimated trip frequency for Alternative 3 is provided in Table 2-16.

Table 2-16:
Travel Frequency for Alternative 3

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer	12	84
Winter	4	28
Auke Bay-Skagway		
Summer	6[1]	42
Winter	4	28

[1]The Sawmill Cove-William Henry Bay ferry frequency is such that people travelling from Juneau to Skagway cannot make the connection on the first ferry of the day from Haines to Skagway. They can make this connection on the remaining five sailings each day. Southbound traffic can complete the connection using all six sailings between Haines and Skagway. Therefore, the effective number of round trips per day for Juneau-Skagway traffic is 5.5.

Cost – Total final design and construction costs for Alternative 3 would be approximately $595.6 million, including $487.3 million for highway design and construction, approximately $53.7 million for vessel acquisition, and approximately $54.6 million for ferry terminal development. Annual M&O costs are estimated to be approximately $22.1 million: $2.2 million for the highway (including avalanche control costs) and $19.9 million for the shuttle ferry systems. The estimated total project life cost less residual value is $1.2 billion. The ferry fares for Alternative 3 are shown in Table 2-17.

Table 2-17:
Ferry Fares for Alternative 3

Route	Sawmill Cove-William Henry Bay	Haines-Skagway
Adult Ferry Passenger	$7.50	$8.00
19-foot Vehicle	$21.00	$23.00

The net State cost per vehicle would be $46.

Alignment – Alternative 3 would begin on the eastern side of Lynn Canal with the extension of Glacier Highway to a new ferry terminal at Berners Bay. The West Lynn Canal Highway would follow the western shoreline of Lynn Canal and the Chilkat Inlet, from William Henry Bay to Haines (Mud Bay Road). Wherever possible, the highway would be located sufficiently inland to avoid impacts to the beach fringe and to reduce visual effects. The terrain is generally conducive to this, but at some locations a combination of trees with eagle nests, avalanche zones, steep terrain, caves, and/or other geological features would force the highway to be located close to the beach, and in a few locations highway fill would be placed below the high-tide line and protected with riprap. Segment details are provided in the subsections below. A more detailed description of the current alignment, the ferry terminal layout, and the design criteria for this alternative can be found in the *2017 Update to Appendix D – Technical Alignment Report* (in Appendix Z).

2.3.4.1 Echo Cove to Sawmill Cove

Alternative 3 would involve widening 2.9 miles of Glacier Highway between Echo Cove and Cascade Point and extending the highway an additional 2.3 miles from Cascade Point to a new ferry terminal at Sawmill Cove in Berners Bay. The new ferry terminal at Sawmill Cove would be a twin-berth facility used to overnight the two Day Boat ACFs side by side. Each of the berths would be connected by a separate transfer bridge to the parking and staging area on shore. Dredging would be required in Sawmill Cove to provide adequate depth for mooring and turning, and intertidal fill would be required.

2.3.4.2 William Henry Bay

A ferry terminal would be constructed at William Henry Bay for Day Boat ACF service across Lynn Canal. The William Henry Bay Ferry Terminal would be somewhat protected from southeast winds but exposed to severe northerly storms; therefore, vessels would return to the Sawmill Cove Ferry Terminal to overnight. At the William Henry Bay Ferry Terminal, a pile-supported access trestle would be used to reach adequate water depths for vessel berthing. A single berth would be built, with a transfer bridge connecting the berth and the pile-supported

approach trestle. No dredging would be required, but fill would be placed in the intertidal area for the parking and staging area.

2.3.4.3 Endicott River Area

The highway from the William Henry Bay Ferry Terminal to the Endicott River area would be located on a wide bench at about 100–150 feet above the beach for most of the segment. The highway would descend off the bench onto a 1,100-foot-long bridge across the Endicott River. The bridge elevation would be set to provide sufficient clearance for airboats. The highway would be elevated on a fill embankment across the brush-covered gravels that form the Endicott River alluvial fan. From the Endicott River crossing to the Sullivan River crossing, wide, timber-covered benches are frequent, but at two locations the highway would drop onto the beach to avoid trees with eagle nests, important geological features, and stretches of steep terrain. Riprap armor would be placed at these locations to protect the highway fill from wave erosion, and the road surface would be placed to avoid high tides and storm surges.

2.3.4.4 Sullivan River Area

In the area of the Sullivan River, the highway would cross a wide plateau to the south of the river before dropping down to the river floodplain. A 600-foot-long bridge over the Sullivan River would be built to the north bank of the river. The bridge would be set high enough to allow airboats to pass underneath. From the Sullivan River north to the Glacier River, the highway would be located 100–300 feet above sea level, except at two locations where it would be located just inside the beach fringe to avoid steep cliffs. The high avalanche hazard zones opposite the middle of Sullivan Island would be mitigated by a combination of bridges and elevated fills with large culverts.

2.3.4.5 Glacier River Area

Long sections of highway would be on fill that would traverse flats on either side of the Glacier River channel. A 400-foot-long bridge would cross the channel. The highway north of the Glacier River would be built on an elevated fill through brush and timber covering the Davidson Glacier alluvial fan. The highway would have a series of curves to miss most of the many small ponds and wetlands in this low-lying area. A 400-foot-long bridge would cross the unnamed outlet of Davidson Glacier Lake.

2.3.4.6 Davidson Glacier to Pyramid Harbor

The highway would continue north from the Davidson Glacier area on heavily timbered benches immediately above the beach cliffs. Construction on these benches would consist primarily of rock cuts with some downhill fills. A 428-foot-long bridge would cross Ludaseska Creek, and a 300-foot-long bridge would cross the glacial stream at Anchorage Point. At Anchorage Point, the construction would shift to fills placed on the alluvial fan of a glacial stream. Elevated fills would be used to mitigate the high avalanche hazard zone south of Pyramid Harbor, with large-diameter culverts providing the necessary drainage.

2.3.4.7 Chilkat River Area

The 2.0-mile Chilkat River crossing would extend from Green Point to Mud Bay Road. The bridge abutment on the west side would start approximately 500 feet from the shore of the

Chilkat River to avoid placing fill on the Dalton Trail, which starts at Pyramid Harbor and heads north along the Chilkat River. The highway in this area would consist of 6,350- and 2,850-foot-long bridges separated by a 2,000-foot-long causeway in the middle of the inlet. The causeway would be placed to the northwest of Pyramid Island to avoid trees with eagle nests on the island. The causeway would be in the intertidal zone in an area of glacial silt deposition. Both bridges would be set at an elevation that would allow airboats and other small open boats, the only vessels currently navigating past Pyramid Island, to pass underneath.

The eastern abutment of the Chilkat River/Inlet crossing would be located above the high-tide line on the Chilkat Peninsula. From the bridge abutment the highway would continue on a short fill section to connect with Mud Bay Road in a standard T-shaped intersection.

A more detailed description of the alignment, the ferry terminal layouts, and the design criteria for this alternative can be found in the *2017 Update to Appendix D – Technical Alignment Report* (in Appendix Z).

2.3.5 Alternatives 4A through 4D

Alternatives 4A through 4D would include continued mainline ferry service in Lynn Canal, and the AMHS would continue to be the NHS route between Juneau and Haines/Skagway.[27] These alternatives are based on a minimum of two mainline ferry trips per week in the summer and one per week in the winter. In Alternatives 4A and 4B, the Haines-Skagway ferry service would be provided by a new conventional monohull ferry because the Day Boat ACFs programmed under Alternative 1 – No Action are too large for the demand on this route. In Alternatives 4C and 4D, the Haines-Skagway ferry service would be provided by a new conventional monohull ferry because the Day Boat ACFs programmed under Alternative 1 – No Action are needed for service between Auke Bay and Haines/Skagway. All of these alternatives would require construction of a new double end berth at Auke Bay.

Alternatives 4A through 4D would provide faster and/or more frequent service with greater capacity than Alternative 1 – No Action while minimizing operating costs. Various combinations of the following are proposed to reduce travel times: faster boats, shorter summer routes, and port-to-port operations (travel to one port, then return to origin). Crew shifts with minimal overtime would reduce operating costs.

These four alternatives partially met three or more of the five Purpose and Need elements as defined for screening and therefore were included in the range of reasonable alternatives in the 2006 Final EIS and have been carried forward in this Final SEIS.

> Note: Alternative 4 was originally identified as the AMHS Alternative in the 1994 *Reconnaissance Engineering Report*. It was designated as the All Marine Alternative in the 1997 Draft EIS even though it included two options with a 5-mile road extension. As described in Section 2.2.8, the original marine alternative options have been modified to reflect recent AMHS experience and planning.

[27] AMHS experimented with turning some mainliners around in Auke Bay and moving Lynn Canal corridor through-traffic on another vessel, with poor results. For this reason and scheduling concerns, it is likely that as long as there are mainliner ferries, there will be mainline service in Lynn Canal absent a highway connection.

2.3.6 Alternative 4A – Fast Vehicle Ferry Service from Auke Bay

Alternative 4A would construct two new FVFs to provide daily summer service between Auke Bay and Haines and between Auke Bay and Skagway. Figure 2-9 illustrates this alternative. No new roads would be built for this alternative. The Auke Bay Ferry Terminal would be expanded to include a double end berth. A new conventional monohull ferry would be constructed for use between Haines and Skagway (the Day Boat ACFs programmed under Alternative 1 – No Action would not be used on this route because they are considered much too large for the demand on this route). Mainline ferry service between Auke Bay and Haines/Skagway would continue, with a minimum of two weekly trips estimated in the summer and one in the winter. The Day Boat ACFs would no longer operate in Lynn Canal.

Capacity – Under Alternative 4A, traffic capacity would be determined by the combination of FVF and mainline ferry sailings[28]. Alternative 4A would have two high-speed ferries, each with a 31-vehicle capacity, providing service to Haines and Skagway. Mainline vessel capacity ranges from 80 to 134 vehicles one way. In the summer, it is assumed that there would be one *Matanuska/Malaspina* class ferry (88-vehicle capacity) and one *M/V Columbia* (134-vehicle capacity) trip per week. Winter mainline ferry service is assumed to be provided by a *Matanuska/Malaspina* class ferry. For the purposes of determining available capacity, mainline capacity has been apportioned 60 percent to Haines and 40 percent to Skagway, based on historical usage. The daily traffic volumes that would be accommodated by Alternative 4A are provided in Table 2-18.

Table 2-18:
Daily Traffic Capacity for Alternative 4A

Route	Number of Vehicles
Auke Bay-Haines	
Summer	162
Winter	77
Auke Bay-Skagway	
Summer	149
Winter	72

Travel Time – The one-way trip times for Alternative 4A are provided in Table 2-19. Times shown in the table include ferry time and driving time (if appropriate). Ferry time consists of waiting time, check-in and loading time, transit time, and unloading time. Check-in time covers the time the AMHS requires for vehicles to be present at the dock prior to loading. The check-in time for the mainline ferry is 2 hours and is 1 hour for an FVF.

[28] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

Table 2-19:
Travel Times for Alternative 4A

Route		Travel Time (hours)	
		Via Mainline Ferry	Via FVF
Auke Bay-Haines	Drive Time	0.1	0.1
	Ferry Time (including check-in, transit, and unloading)	7.1	3.8
	Total	7.2	3.9
Auke Bay-Skagway (via Haines)	Drive Time	0	0
	Ferry Time (including check-in, transit, and unloading)	9.1	4.1
	Total	9.1	4.1

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

Travel Frequency – Under Alternative 4A, flexibility and opportunity for travel would be a function of the frequency of mainline ferry and FVF service. The trip frequency is provided in Table 2-20.

Table 2-20:
Travel Frequency for Alternative 4A

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer	2.3	16
Winter	1.1	8
Auke Bay-Skagway		
Summer	2.3	16
Winter	1.1	8

Cost – Total final design and construction costs for Alternative 4A would be approximately $250.2 million, including approximately $206.1 million for vessel acquisition and approximately $44.1 million for ferry terminal construction at Auke Bay. Annual M&O costs are estimated to be approximately $33.7[29] million: $7.3 million for mainline ferry service, $24.1 million for Lynn Canal shuttle service, and $2.3 million for the Haines-Skagway shuttle. The estimated total project life cost less residual value is $1.6 billion. The ferry fares for Alternative 4A are shown in Table 2-21.

[29] Revised total is due to 1) updating costs to 2015 dollars and 2) a discrepancy in the data relied on to generate the 2014 Draft SEIS mainliner operating costs.

Table 2-21:
Ferry Fares for Alternative 4A

Route	Auke Bay - Haines	Auke Bay - Skagway
Adult Ferry Passenger	$39.00	$53.00
19-foot Vehicle	$90.00	$116.00

The net State cost per vehicle would be $335.

Design Details – The only construction for this alternative, other than for new vessels, would be the reconstruction of the west end of the Auke Bay Ferry Terminal to create two new end berths. Terminal layout details for the Auke Bay modifications can be found in the *2017 Update to Appendix D – Technical Alignment Report* (in Appendix Z).

2.3.7 Alternative 4B – Fast Vehicle Ferry Service from Berners Bay

Alternative 4B would widen and extend Glacier Highway from Echo Cove to Sawmill Cove in Berners Bay (5.2 miles total) using the same design standards described in Alternative 2B (Figures 2-10 and 2-11). A new ferry terminal would be constructed at Sawmill Cove in Berners Bay with two end berths to accommodate both FVFs at the same time. The Auke Bay Ferry Terminal would be expanded to include a double end berth. This alternative would construct two new FVFs to provide service between Sawmill Cove and Haines/Skagway in the summer[30] and between Auke Bay and Haines/Skagway in the winter[31]. Mainline ferry service between Auke Bay and Haines/Skagway would continue, with two weekly trips estimated in the summer and one in the winter. The Day Boat ACFs would no longer operate in Lynn Canal. A new conventional monohull ferry would be constructed for use between Haines and Skagway.

Capacity – Under Alternative 4B, traffic capacity would be determined by the combination of FVF and mainline ferry sailings[32]. Alternative 4B would have two FVFs, each with a 53-vehicle capacity providing service between Sawmill Cove and Haines and Skagway. In the winter, the ferry would make two round trips a day from Auke Bay: one to Haines and one to Skagway. Mainline vessel capacity ranges from 80 to 134 vehicles one way. In the summer, it is assumed that there would be one *Matanuska/Malaspina* class ferry (88-vehicle capacity) and one *M/V Columbia* (134-vehicle capacity) trip per week. Winter mainline ferry service is assumed to be provided by a *Matanuska/Malaspina* class ferry. For the purposes of determining available capacity, mainline capacity has been apportioned 60 percent to Haines and 40 percent to Skagway, based on historical usage. This combination of vessels would be able to accommodate the daily traffic volumes listed in Table 2-22.

[30] Due to environmental concerns in Berners Bay during the spring (herring and eulachon spawning, as well as humpback whale and Steller sea lion concentrations), the summer schedule under Alternatives 4B (and 4D) would run from May 15 to September 30.

[31] Due to environmental concerns in Berners Bay during the spring (herring and eulachon spawning as well as humpback whale and Steller sea lion concentrations), winter operation logistics, and lower winter travel demand, the winter schedule would operate from Auke Bay.

[32] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

Table 2-22:
Daily Traffic Capacity for Alternative 4B

Route	Number of Vehicles
Auke Bay-Haines	
Summer (via Sawmill Cove)	250
Winter (via) Auke Bay)	121
Auke Bay-Skagway	
Summer (via Sawmill Cove)	237
Winter (via Auke Bay)	116

Travel Time – The one-way trip times for Alternative 4B are shown in Table 2-23. Times shown in the table include ferry time and driving time (if appropriate). Ferry time consists of waiting time, check-in and loading time, transit time, and unloading time. Check-in time covers the time the AMHS requires for vehicles to be present at the dock prior to loading. The check-in time for the mainline ferry is 2 hours and is 1 hour for a FVF. Mainline ferry travel time and the winter FVF travel times from Auke Bay would be the same as in Alternative 4A.

Table 2-23:
Travel Times for Alternative 4B

Route		Travel Time (hours)		
		Via FVF summer[1]	Via FVF winter[1]	Via Mainliner
Auke Bay - Haines[1]	Drive Time	0.8	0.1	0.1
	Ferry Time (including check-in, transit, and unloading)	2.9	3.9	7.1
	Total	3.7	4.0	7.2
Auke Bay - Skagway[1]	Drive Time	0.7	0	0
	Ferry Time (including check-in, transit, and unloading)	3.2	4.2	9.1
	Total	3.9	4.2	9.1

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

[1]Alternative 4B would include FVF service from Sawmill Cove Ferry Terminal in summer and from Auke Bay Ferry Terminal in winter, with differing travel times.

Travel Frequency – Under Alternative 4B, flexibility and opportunity for travel between Auke Bay and Haines or Skagway would be determined by the combined frequency of mainline ferry and FVF service. Two FVFs would operate in summer from Sawmill Cove Ferry Terminal; the shorter distance between ferry terminals allows for two round trips per day. In winter, a single FVF would make two round trips a day from Auke Bay: one to Haines and one to Skagway. This schedule would result in the travel frequency provided in Table 2-24.

Table 2-24:
Travel Frequency for Alternative 4B

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer (via Sawmill Cove)	2.3	16
Winter (via Auke Bay)	1.1	8
Auke Bay-Skagway		
Summer (via Sawmill Cove)	2.3	16
Winter (via Auke Bay)	1.1	8

Cost – Total final design and construction costs for Alternative 4B would be approximately $317.6 million, including $10.2 million for highway design and construction, approximately $241.6 million for vessel acquisition, and approximately $65.8 million for ferry terminal design and construction at Auke Bay and Sawmill Cove. Annual M&O costs would be $33.3 million[33]: $7.3 million for mainline service, $23.5 million for Lynn Canal shuttle service, $2.4 million for the Haines-Skagway shuttle, and $18,000 for highway maintenance. The estimated total project life cost less residual value is $1.7 billion. The ferry fares for Alternative 4B are shown in Table 2-25.

Table 2-25:
Ferry Fares for Alternative 4B

Route	Summer		Winter	
	Sawmill Cove - Haines	Sawmill Cove - Skagway	Auke Bay - Haines	Auke Bay-Skagway
Adult Ferry Passenger	$25.00	$35.50	$39.00	$53.00
19-foot Vehicle	$57.00	$77.00	$90.00	$116.00

The net State cost per vehicle would be $179.

Alignment – Alternative 4B would begin just north of the Echo Cove boat launch. It would follow the same alignment as described for Alternative 3 from Echo Cove north to a new ferry terminal at Sawmill Cove. This would involve construction of 2.3 miles of new highway and widening of 2.9 miles of existing road. (5.2 miles total). The Sawmill Cove Ferry Terminal would have two end berths with two support floats and two steel transfer bridges. Dredging at the terminal site would be required to provide adequate depth. A detailed description of the alignment, the ferry terminal layout, and the design criteria for this alternative can be found in the *2017 Update to Appendix D – Technical Alignment Report* (in Appendix Z).

[33] Revised total is due to (1) updating costs to 2015 dollars and (2) a discrepancy in the data relied on to generate the 2014 Draft SEIS mainliner operating costs.

2.3.8 Alternative 4C – Conventional Monohull Service from Auke Bay

This alternative would use the two Day Boat ACFs to operate between Auke Bay and Haines/Skagway (Figure 2-9). The Auke Bay Ferry Terminal would be expanded to include a new double end berth, to accommodate both Day Boat ACFs at once. A new conventional monohull ferry would be constructed for shuttling between Haines and Skagway. The Skagway Ferry Terminal would be modified to include a new end berth to accommodate the Day Boat ACF. Mainline ferry service between Auke Bay and Haines/Skagway would continue, with two weekly trips estimated in the summer and one in the winter. No new road construction would occur.

Capacity – Under Alternative 4C, traffic capacity would be determined by the combination of Day Boat ACF and mainline ferry sailings.[34] Each of the two Day Boat ACFs would have a capacity of 53 vehicles. In the summer, each Day Boat ACF would make one trip per day, with one vessel making a round trip to Haines and the other making a round trip to Skagway. In winter, a single vessel would operate, alternating between a round trip to Haines one day and to Skagway the next. Mainline vessel capacity ranges from 80 to 134 vehicles one way. In the summer, it is assumed that there would be one *Matanuska/Malaspina* class ferry (88-vehicle capacity) and one *M/V Columbia* (134-vehicle capacity) trip per week. Winter service is assumed to be provided by a *Matanuska/Malaspina* class ferry. For the purposes of determining available capacity, mainline capacity has been apportioned 60 percent to Haines and 40 percent to Skagway, based on historical usage. Alternative 4C would accommodate the traffic volumes provided in Table 2-26.

Table 2-26:
Daily Traffic Capacity for Alternative 4C

Route	Number of Vehicles
Auke Bay-Haines	
Summer	144
Winter	68
Auke Bay-Skagway	
Summer	131
Winter	63

Travel Time – The one-way trip times for Alternative 4C are provided in Table 2-27. Times shown in the table include ferry time and driving time (if appropriate). Ferry time consists of check-in and loading time, transit time, and unloading time. Check-in time covers the time the AMHS requires for vehicles to be present at the dock prior to loading. The check-in time for the mainline ferry is 2 hours and is 1 hour for a Day Boat ACF.

[34] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

Table 2-27:
Travel Times for Alternative 4C

Route		Travel Time (hours)	
		Via Mainline Ferry	Via Day Boat ACF
Auke Bay-Haines	Drive Time	0.1	0.1
	Ferry Time (including check-in, transit, and unloading)	7.1	6.1
	Total	7.2	6.2
Auke Bay-Skagway	Drive Time	0	0
	Ferry Time (including check-in, transit, and unloading)	9.1	6.6
	Total	9.1	6.6

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

Travel Frequency – Under Alternative 4C, flexibility and opportunity for travel would be a function of the frequency of mainline ferry and Day Boat ACF service. The two Day Boat ACFs would each make one trip per day during the summer (one between Auke Bay and Haines and the other between Auke Bay and Skagway). In winter, a single Day Boat ACF would alternate daily trips to Haines and Skagway; mainline ferry service would continue at one trip per week. Trip frequency for Alternative 4C is provided in Table 2-28.

Table 2-28:
Travel Frequency for Alternative 4C

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer	1.3	9
Winter	0.6	4.5
Auke Bay-Skagway		
Summer	1.3	9
Winter	0.6	4.5

Cost – Total final design and construction costs for Alternative 4C would be approximately $78.4 million, including approximately $24.7 million for vessel acquisition and approximately $53.7 million for ferry terminal construction at Auke Bay and Skagway. Annual M&O costs are estimated to be approximately $22.7[35] million: $7.3 million for mainline ferry service, $13.1 million for Lynn Canal shuttle service, and $2.3 million for the Haines-Skagway shuttle. The estimated total project life cost less residual value is $981 million. The ferry fares for Alternative 4C are shown in Table 2-29.

[35] Revised total is due to (1) updating costs to 2015 dollars and (2) a discrepancy in the data relied on to generate the 2014 Draft SEIS mainliner operating costs.

Table 2-29:
Ferry Fares for Alternative 4C

Route	Auke Bay-Haines	Auke Bay-Skagway
Adult Ferry Passenger	$39.00	$53.00
19-foot Vehicle	$90.00	$116.00

The net State cost per vehicle would be $313.

Design Details – The only construction required for this alternative, other than new Haines-Skagway ferry and modification of the Skagway Ferry Terminal, would be the reconstruction of the west end of the Auke Bay Ferry Terminal to create two new end berths. The terminal layout details for the Auke Bay modifications can be found in the *2017 Update to Appendix D – Technical Alignment Report* (in Appendix Z).

2.3.9 Alternative 4D – Conventional Monohull Service from Berners Bay

Alternative 4D would widen the existing Glacier Highway from Echo Cove to Cascade Point and extend it from Cascade Point to Sawmill Cove in Berners Bay (5.2 miles total) using the same design standards described in Alternative 2B (Figures 2-10 and 2-11). A new ferry terminal would be constructed at Sawmill Cove in Berners Bay with a double end berth, to accommodate both Day Boat ACFs at once. The Day Boat ACFs would provide service between Sawmill Cove and Haines/Skagway in summer[36] and between Auke Bay and Haines/Skagway in winter. The Auke Bay Ferry Terminal also would be expanded to include a new double end berth. A new conventional monohull ferry would be constructed for use between Haines and Skagway. The Skagway Ferry Terminal would be modified to include a new end berth to accommodate the Day Boat ACF. Mainline service from Auke Bay to Haines-Skagway would continue, with two weekly trips estimated in the summer and one in the winter.

Capacity – Under Alternative 4D, traffic capacity would be determined by the combination of Day Boat ACF and mainline ferry sailings.[37] Each of the Day Boat ACFs in Alternative 4D would have a capacity of 53 vehicles. In the summer, the Day Boat ACFs would be used to make two trips per day between Sawmill Cove and Haines and two trips per day between Sawmill Cove and Skagway. In winter, a single Day Boat ACF would operate from Auke Bay, alternating between a round trip to Haines one day and a round trip to Skagway the next day. Mainline vessel capacity ranges from 80 to 134 vehicles one way. In the summer, it is assumed that there would be one *Matanuska/Malaspina* class ferry (88-vehicle capacity) and one *M/V Columbia* (134-vehicle capacity) trip per week. Winter service is assumed to be provided by a *Matanuska/Malaspina* class ferry. For the purposes of determining available capacity, mainline capacity has been apportioned 60 percent to Haines and 40 percent to Skagway, based on historical usage. The daily traffic volumes that would be accommodated by Alternative 4D are provided in Table 2-30.

[36] Due to environmental concerns in Berners Bay during the spring (herring and eulachon spawning, as well as humpback whale and Steller sea lion concentrations), the summer schedule under Alternatives 4B (and 4D) would run from May 15 to September 30.

[37] To compare alternatives that have both road and ferry segments, this analysis focuses on automobile capacity of the ferries. Ferries also transport walk-on passengers.

Table 2-30:
Daily Traffic Capacity for Alternative 4D

Route	Number of Vehicles
Auke Bay-Haines	
Summer (via Sawmill Cove)	250
Winter (via Auke Bay)	68
Auke Bay-Skagway	
Summer (via Sawmill Cove)	237
Winter (via Sawmill Cove)	63

Travel Time – The one-way travel times are provided in Table 2-31. Times shown in the table include ferry time and driving time (if appropriate). Ferry time consists of check-in and loading time, transit time, and unloading time. Check-in time covers the time the AMHS requires for vehicles to be present at the dock prior to loading. The check-in time for the mainline ferry is 2 hours and is 1 hour for a Day Boat ACF. Mainline ferry travel time and the winter Day Boat ACF travel times from Auke Bay would be the same as in Alternative 4C.

Table 2-31:
Travel Times for Alternative 4D

Route		Travel Time (hours)		
		Via ACF summer[1]	Via ACF winter[1]	Via Mainliner
Auke Bay - Haines[1]	Drive Time	0.8	0.1	0.1
	Ferry Time (including check-in, transit, and unloading)	4.2	6.1	7.1
	Total	5.0	6.2	7.2
Auke Bay - Skagway[1]	Drive Time	0.7	0	0
	Ferry Time (including check-in, transit, and unloading)	4.7	6.6	9.1
	Total	5.4	6.6	9.1

Note: For consistency and to allow direct comparisons between alternatives, the travel time measures for each alternative start at Auke Bay, and the end point is either the Skagway Ferry Terminal or downtown Haines (Third Avenue and Main Street).

[1]Alternative 4D would include Day Boat ACF service from Sawmill Cove Ferry Terminal in summer and from Auke Bay Ferry Terminal in winter, with differing travel times.

Travel Frequency – Under Alternative 4D, flexibility and opportunity for travel would be a function of the frequency of mainline ferry and Day Boat ACF service. In the summer, the two Day Boat ACFs would make two trips per day between Sawmill Cove and Haines and two trips per day between Sawmill Cove and Skagway. In winter, a single Day Boat ACF would operate from Auke Bay, alternating between a round trip to Haines one day and to Skagway the next day. Trip frequency is provided in Table 2-32.

Table 2-32:
Travel Frequency for Alternative 4D

Route	Round Trips per Day	Round Trips per Week
Auke Bay-Haines		
Summer (via Sawmill Cove)	2.3	16
Winter (via Auke Bay)	0.6	4.5
Auke Bay-Skagway		
Summer (via Sawmill Cove)	2.3	16
Winter (via Auke Bay)	0.6	4.5

Cost – Total final design and construction costs for Alternative 4D would be approximately $110.3 million, including $10.2 million for highway design and construction, approximately $24.7 million for vessel acquisition, and approximately $75.4 million for ferry terminal design and construction at Auke Bay, Skagway, and Sawmill Cove. Annual M&O costs would be $24.2[38] million: $7.3 million for mainline service, $14.5 million for Lynn Canal shuttle service, $2.4 million for the Haines-Skagway shuttle, and $18,000 for highway maintenance. The estimated total project life cost less residual value is $1.0 billion. The ferry fares for Alternative 4D are shown in Table 2-33.

Table 2-33:
Ferry Fares for Alternative 4D

Route	Summer		Winter	
	Sawmill Cove - Haines	Sawmill Cove - Skagway	Auke Bay - Haines	Auke Bay - Skagway
Adult Ferry Passenger	$25.00	$35.50	$39.00	$53.00
19-foot Vehicle	$57.00	$77.00	$90.00	$116.00

The net State cost per vehicle would be $105.

Alignment – The roadway alignment and terminal details for Alternative 4D are identical to those of Alternative 4B. Road construction would begin at the end of Glacier Highway just north of the Echo Cove boat launch. The alignment would follow the same alignment as Alternative 3 from Echo Cove north to a new ferry terminal at Sawmill Cove in Berners Bay. This would involve construction of 2.3 miles of new highway and widening of 2.9 miles of existing road (5.2 miles total). The Sawmill Cove Ferry Terminal would have two end berths with two support floats and two steel transfer bridges. Dredging would be required to provide adequate depth.

A detailed description of the roadway alignment, the ferry terminal layout, and the design criteria for this alternative can be found in the *2017 Update to Appendix D – Technical Alignment Report* (in Appendix Z).

[38] Revised total is due to (1) updating costs to 2015 dollars and (2) a discrepancy in the data relied on to generate the 2014 Draft SEIS mainliner operating costs.

2.4 Alternatives Suggested in Comments Received on the 2014 Draft SEIS

Comments on the 2014 Draft SEIS included multiple suggestions related to alternatives, including suggestions to evaluate new alternatives, variations on reasonable alternatives, and variations on alternatives previously considered not reasonable. Sections 2.4.1 and 2.4.2 discuss two proposed alternatives labeled by their proponent as "Alternative 1B Optimized" and "Alternative 5" (DOT&PF has retained this labeling solely for convenience). DOT&PF and FHWA gave these alternatives a hard look by forecasting the travel demand and developing capital and operating costs for each (see Appendix II, *Alternative 1B Optimized and Alternative 5 Evaluation*). Section 2.4.3 discusses other alternatives and variations on alternatives suggested in comments that were clearly not reasonable, were duplicative of alternatives already in the JAI Project SEIS, or were determined not reasonable in previous alternative development and screening efforts.

2.4.1 Enhanced Service with Existing AMHS Assets

An alternative developed by the Skagway Marine Access Commission (SMAC) and labeled "Alternative 1B Optimized" was submitted in association with their comments on the 2014 Draft SEIS. This is a ferry alternative that would use only existing AMHS ferries and terminals, with suggested modifications to vessels used and routes run to "optimize" (in SMAC's opinion) Alternative 1B as presented in the 2014 Draft SEIS.

In summer, SMAC's alternative would consist of one Day Boat[39] Alaska Class Ferry (ACF) sailing between Auke Bay and Haines daily. The second Day Boat ACF would sail between Skagway and Auke Bay daily. The *M/V Malaspina* would sail daily on the following route: Haines-Skagway-Haines-Auke Bay-Haines. In winter, one Day Boat ACF would sail between Auke Bay and Haines 5 days per week. The second Day Boat ACF would sail between Haines and Skagway 5 days per week, making two trips each day it sails. The *M/V Malaspina* would not sail in Lynn Canal in winter. Under this scenario, mainline ferry service would not continue in Lynn Canal.

DOT&PF and FHWA have examined this proposal and have determined that it is not a reasonable alternative for the following reasons. First, the Day Boat ACF could not make a daily Auke Bay-Skagway run and meet United States Coast Guard (USCG) work/rest requirements. Without modification of the vessel or the loading and unloading facility at the Skagway Ferry Terminal to decrease the Day Boat ACF operating day, it would not be compliant with the USCG requirements.

Second, discontinuing mainline ferry service within Lynn Canal would create capacity problems at Auke Bay. During summer, on the 2 days per week that the mainliner sails, the amount of transferring traffic plus local traffic demand to/from Skagway would be greater than the capacity of Auke Bay-Skagway Day Boat ACF proposed in SMAC's alternative.

Third, there would be insufficient berth space and vehicle staging areas in Auke Bay to have the mainline vessel in port while accommodating all the transferring vehicles without vessel and vehicle congestion and delays. To fully clear northbound and southbound connecting travelers onto the mainline vessel, the mainliner would need to remain docked in Auke Bay long enough

[39] A day boat shuttle ferry is home ported in one community and normally returns to that community each night for overnight moorage. A day boat shuttle ferry does not include crew or passenger staterooms (DOT&PF, 2012d).

for the two Day Boat ACFs and the *M/V Malaspina* to come and go. Moreover, the staging area at Auke Bay would be insufficient to accommodate all the disembarking and embarking vehicles. The existing space is limited and was not designed or sized to handle the transfers of the volumes expected. A detailed analysis of SMAC's Alternative 1B Optimized is found in Appendix II, *Alternative 1B Optimized and Alternative 5 Evaluation*.

2.4.2 All Day Boat ACF Alternative

An alternative developed by SMAC and labeled as "Alternative 5" was submitted in association with their comments on the 2014 Draft SEIS. Alternative 5 is a ferry alternative that builds upon Alternative 4C from the 2014 Draft SEIS. It relies on using three Day Boat ACF vessels in Lynn Canal (the two programmed vessels currently under construction and a new vessel that would be built under this scenario), plus the terminal improvements identified in Alternative 4C. This proposal would eliminate mainline ferry service in Lynn Canal.

In summer, SMAC's Alternative 5 would consist of (1) a Day Boat ACF sailing between Haines and Auke Bay daily, (2) a second Day Boat ACF sailing between Skagway and Auke Bay daily, and (3) a third Day Boat ACF sailing between Auke Bay and Haines 4 days per week and between Auke Bay and Skagway 3 days per week. The Haines-Skagway shuttle from the *Southeast Alaska Transportation Plan* (SATP) would make two round trips per day. In winter, one Day Boat ACF would sail between Haines and Auke Bay 5 days per week, and a second Day Boat ACF would make two round trips between Haines and Skagway on the days the first Day Boat ACF sails. The third Day Boat ACF and the Haines-Skagway shuttle would not sail in Lynn Canal in winter.

DOT&PF and FHWA have examined this alternative and have determined that it is a variation of existing alternatives and therefore would be an unnecessary addition to the range of reasonable alternatives. It would attract fewer trips than Alternative 1B, provides similar capacity to Haines (and less to Skagway), and would have similar travel time as other alternatives studied (Alternatives 1 – No Action, 1B, and 4C). It fits within the range of capital and operational costs (not the cheapest and not the most expensive of the ferry options). In short, it is not unique enough to constitute something outside the range of alternatives already studied. Further, sufficient information has been generated to confirm it is inferior to other alternatives already in the JAI Project SEIS.

Additionally, during summer, discontinuing mainline ferry service within Lynn Canal could create capacity issues that may prevent some travelers from reaching their final destination via a direct ferry connection. Vehicles traveling through Juneau in either direction on mainline vessels would be required to transfer from the Lynn Canal vessels to the mainline vessel at Auke Bay. Mainline vessels hold between 88 and 134 vehicles. Depending on how many vehicles were passing through Juneau, there could be insufficient capacity on the days the mainliner arrives when local traffic would be added to the demand generated by these mainline vessels. Some Lynn Canal travelers would likely have to use the Haines-Skagway shuttle and travel via Haines or Skagway to reach their final destination, which increases their travel time and potentially their costs (if they need to stay overnight).

A detailed analysis of SMAC's Alternative 5 is found in Appendix II, *Alternative 1B Optimized and Alternative 5 Evaluation*.

2.4.3 Other Suggestions Regarding Alternatives

Some comments on the 2014 Draft SEIS included suggestions for apparently new alternatives, as well as alignment or operational variations for alternatives that were evaluated in the 2014 Draft SEIS. In some cases, the suggestions proposed changes to alternatives already determined not reasonable. It is important to note that an EIS is required to evaluate a full range of alternatives, but is not required to examine every possible variation in a theoretically infinite set of variations. The suggested variations did not improve upon the alternatives already evaluated in a meaningful way or provide a better solution to addressing the purpose and need for the project. The following paragraphs describe examples of those suggestions and DOT&PF's and FHWA's consideration of those suggestions. All comments received on the 2014 Draft SEIS and responses appear in Appendix JJ, *Responses to Draft Supplemental Environmental Impact Statement Comments*.

2.4.3.1 New Alternatives Suggested

Some commenters suggested ways to make Alternative 2B into an all-road alternative that could avoid the Skagway and White Pass District National Historic Landmark, or suggested various means that would avoid avalanche-prone or difficult terrain.

Suggestions to analyze a long tunnel through the mountains (e.g., Juneau or Berners Bay to Skagway) or a floating road (see also Section 2.2.4) were dismissed based on their failure to meet screening criterion I, which was cost/technical feasibility and common sense (for more information on the screening criterion, see Section 2.1). The cost of dozens of miles of tunnel or floating road would be prohibitively high, and the extensive structural elements required would not be feasible.

A road route up the Katzehin River valley and a northern tributary to intersect the Klondike Highway was suggested, without routing detail. The valleys in question are narrow and steep-sided, terminating in high peaks and icefields. A surface route would not be feasible over the highest terrain (6,000+ feet) due to grade, snowpack, and unavoidable glaciers. The route would likely require a tunnel beginning at approximately 2,500 feet in elevation under the peaks and icefields and extending more than 5 miles long. This suggestion did not meet screening criterion I (Cost/Technical Feasibility and Common Sense) as professional judgment regarding technical feasibility and cost as well as a common sense approach to this route indicate this would not be a reasonable alternative. Because the route would not specifically improve travel in Lynn Canal (completely bypassing the communities of Haines and Skagway), it would not meet the purpose and need.

2.4.3.2 Suggested Variations on Reasonable Alternatives

Commenters suggested variations to alternatives already determined reasonable. DOT&PF and FHWA considered these suggestions to determine if they were reasonable. Examples of the kinds of suggestions received are described below.

Some commenters suggested that, for safety and to avoid difficult terrain, the road options (Alternatives 2B and 3) be summer-only roads, with ferry service between Juneau and Haines/Skagway in winter. This suggestion is basically a combination of Alternative 2B or 3 and Alternative 1 - No Action. Such an alternative would minimize the need for (and cost of) snow sheds and avalanche control measures on the East or West Lynn Canal's highway components

because they would not be operated in winter. However, DOT&PF has examined the maintenance issues and risk associated with avalanches, and has included avalanche risk mitigation in its highway design and operating plans for Alternatives 2B and 3. With mitigation, including the ability to employ ferries if the East or West Lynn Canal Highways were to be closed for avalanche mitigation or other weather-related concerns, DOT&PF has designed the roads proposed under Alternatives 2B and 3 (and is committed to implementing avalanche control measures) so that those roads would be well within safety standards for roads in mountainous avalanche terrain, similar to other highways in Alaska. Having invested in a highway, were Alternative 2B or 3 to be built, it would not make sense for DOT&PF to close the road and revert to the existing ferry service in winter[40] (not meeting the purpose and need for half the year). The year-round road would serve the traveling public better (more frequent service and less time and cost of travel). For these reasons, this option was did not pass screening criterion II (Appropriateness and Unnecessary Variations) because it was determined to be an unnecessary variation and not appropriate. This option does not satisfy the JAI Project's purpose and need, and therefore is not reasonable.

In a variation on Alternative 2B, some commenters suggested that it might be possible to avoid construction of a large bridge over the Katzehin River by placing the Katzehin Ferry Terminal south of the river. As part of the alternatives development process, FHWA and DOT&PF had previously investigated locations for a ferry terminal at the north end of the East Lynn Canal Highway and determined that the area south of the Katzehin River was not suitable because of upland terrain, exposure to storm wind and waves, and the likely need for continual dredging of material carried by the river to keep the terminal area safe for ferry operations. For these reasons, changing the location of the ferry terminal did not meet screening criterion II (Appropriateness and Unnecessary Variations) because it is not considered appropriate and is an unnecessary variation. As a result, these suggestions are not reasonable. These variations also did not meet screening criterion I (Cost/Technical Feasibility and Common Sense) because of the costs associated with initial construction and the likely need for continual maintenance dredging.

Variations on Alternative 3 included suggestions for different ferry terminal locations on the east and west sides of Lynn Canal. For example, the existing Auke Bay Ferry Terminal could be used instead of the proposed Sawmill Cove Ferry Terminal on the east side, and St. James Bay/Boat Harbor could be used instead of William Henry Bay on the west side.

Potential ferry terminal sites on the east side of Lynn Canal were evaluated during the original alternatives screening based on basin characteristics and exposure to weather. The distance from Auke Bay to a terminal in William Henry Bay or St. James Bay/Boat Harbor on the west side of Lynn Canal would be much greater than the route proposed under Alternative 3. The longer route would increase the duration of the ferry run, resulting in reduced frequency of service; longer overall travel time; reduction in traffic volume, resulting in an inferior alternative to alternatives evaluated in the EIS. Therefore these suggestions did not meet screening criterion II (Appropriateness and Unnecessary Variations) as they are considered an unnecessary variation on the terminal site evaluated under Alternative 3.

[40] DOT&PF anticipates some winter closures for avalanche control and snow removal. For example, DOT&PF estimates the road associated with Alternative 2B would be closed for an average of 12 days per year (see *2017 Update to Appendix J – Snow Avalanche Report*) compared to the suggestion of closing the road for the entire winter.

Cascade Point was another suggested east side ferry terminal site instead of Sawmill Cove. DOT&PF had previously considered this suggestion during the original alternatives development process and disclosed that if Alternative 3, 4B, or 4D were selected, Cascade Point would be further investigated regarding its suitability and availability for the terminal in this Final SEIS (see Appendix A, *Alternative Screening Report*, of the 2005 Supplemental Draft EIS).

Several commenters suggested eliminating mainliner ferries in Lynn Canal. This concept was carefully reviewed and determined not reasonable because the capacity provided by the mainliner would be required to meet the projected traffic demand for the primary ferry alternatives. Eliminating mainliner ferries in Lynn Canal would also inconvenience passengers by requiring them to change ferries, which would increase their travel time. Appendix II, *Alternative 1B Optimized and Alternative 5 Evaluation*, provides information on the logistical and capacity problems related to discontinuing mainliner service in Lynn Canal in conjunction with ferry alternatives. Another suggestion was to run one Day Boat ACF shuttle ferry on a Juneau-Haines-Skagway-Haines-Juneau run and the other on an opposite schedule, starting in Skagway. This would not be possible, given the time each round trip would take. The Day Boat ACF vessels will not include crew's quarters; AMHS assumes crew members would return home at the end of their shifts. Therefore, these alternatives are not reasonable because they are not technically feasible based on criterion I (Cost/Technical Feasibility and Common Sense).

Commenters suggested different ferry operation scenarios, including a hub-and-spoke system of ferries in Lynn Canal. This suggestion was not well defined, but was compared to the Inter-Island Ferry Authority operation at Prince of Wales Island. The ferry alternatives proposed for the JAI Project, Alternatives 1B and 4A through 4D, are essentially a hub and spoke system, with Juneau being the hub and Haines and Skagway being the spokes. Under Alternatives 1B and 4A through 4D, AMHS would provide daily ferry service to and from the hub connecting to the spokes. Because alternatives already evaluated in the JAI Project SEIS employed a hub and spoke system, these suggestions were determined not reasonable because they were unnecessary variations of alternatives already examined (i.e., did not meet screening criterion II: Appropriateness and Unnecessary Variations).

2.4.3.3 Suggested Alternatives Previously Determined Not Reasonable

Commenters suggested several alternatives that FHWA and DOT&PF had previously considered and determined not reasonable. DOT&PF and FHWA reviewed the suggestions from the commenters and considered whether any new information was provided that would make these alternatives reasonable. The suggestions include:

- A road to Atlin, B.C., via the Taku River valley south of Juneau. This route would not address the purpose and need and was not favored by the government of Canada. See Section 2.2.1.
- A road from Juneau to Skagway. Originally proposed in Alternatives 2, 2A, and 2C, FHWA determined these to be not reasonable because of impacts to property at Skagway protected under Section 4(f) of the U.S. Department of Transportation Act. Section 4(f) requires avoidance of Section 4(f) property if a feasible and prudent alternative is available. See Section 2.2.9 and Chapter 6.
- Alternative modes to roads and ferries, such as railroad service to Juneau. Rail access was considered previously and rejected. See Section 2.2.5.

- A bridge across Lynn Canal from the Katzehin River Delta to Haines. The structure was previously determined to be cost prohibitive. See Section 2.2.4.
- An alternative that would include a road between Haines and Skagway as a stand-alone road or as part of a system from Juneau through Haines to Skagway. The Haines-Skagway road would not fully support the purpose and need for the project, as is more fully described in Section 2.2.3.

2.4.3.4 Suggestions That Would Not Meet Purpose and Need

Commenters provided multiple suggestions that were not stand-alone alternatives or were not related directly to the purpose and need for this project. Examples include:

- Commenters suggested road alternatives leading farther south on the west side of Lynn Canal to other communities. These suggested road connections might have value as part of a regional transportation plan that would improve access to the suggested communities; however, they would not improve surface transportation to and from Juneau. These proposed connections would solve different problems and, therefore, are not addressed in detail in this Final SEIS.
- Commenters suggested better, cheaper air travel to and from Juneau. This suggestion did not specify how cheaper air travel might be accomplished, but it is not a reasonable alternative because it would not meet the purpose and need for the project, which is focused on the need for improved surface transportation.
- Commenters suggested changes to AMHS operations, some of which were related only tangentially to the JAI Project. For example, some commenters suggested discontinuing service to Washington state for cost savings and using the money saved to improve the rest of the ferry system. In another example, a commenter suggested building a parking garage for paid parking at the Auke Bay Ferry Terminal and using the revenues generated to support the AMHS.

The JAI Project identifies transportation problems in a specific corridor, and the needs are specific to surface transportation within that corridor, as indicated by the statement of purpose and need in Chapter 1. Suggested options like the ones in this section, which include roads to other places, different modes of travel, and far-reaching or overarching operational suggestions, do not address the purpose and need for this project and are outside the purview of the JAI Project SEIS.

2.5 Identification of the Preferred Alternative

Governor Walker announced on December 15, 2017, that the "No Build Alternative" is the State's Preferred Alternative due to Alaska's current fiscal challenges (State of Alaska, 2016b). FHWA agreed that this was a prudent course of action. This section describes the background circumstances leading to the identification of the preferred alternative. The primary reason for the change in preferred alternatives was the plight of Alaska's economy and its effect on the State government's overall budgetary health (see additional discussion in Section 2.5.2). This fiscal environment, in turn, has affected DOT&PF's budget and its ability to advance a build transportation solution in Lynn Canal.

Controversy regarding the JAI Project was also a contributing factor. Much of the controversy surrounding this project, which has persisted for many years, is related to the potential impacts to the natural and social environment associated with alternatives with substantial road components. Some of the controversy has been related to the basic modal choice reflected in the build alternatives (i.e., ferries versus roads). This has been expressed in numerous resolutions from the local governments of Haines, Skagway, and Juneau and is reflected in their adopted comprehensive plans. In general, Haines and Skagway local governments have been in favor of improved ferry options due to concerns with economic and social changes in their communities. Conversely, Juneau's government has supported the alternatives with large road components.

The level of controversy is further reflected in the intense interest from the public as expressed in the comments generated for and against the various alternatives through past scoping processes and public hearings, submitted on draft versions of the EIS, and reflected in surveys. Many residents and environmental advocacy groups (local and national) have expressed environmental concerns (captured in the impacts disclosed in this Final SEIS and in the comments summarized in Appendix JJ, *Responses to Draft Supplemental Environmental Impact Statement Comments*), and some groups have filed lawsuits based on those concerns. The history of the lack of consensus and controversy is summarized in Section 2.5.3. It should be noted that the FHWA has not identified any environmental impacts at this time that would preclude selection of a build alternative. In addition, there is nothing about the type or level of controversy on its own that would prevent FHWA from selecting a build alternative.

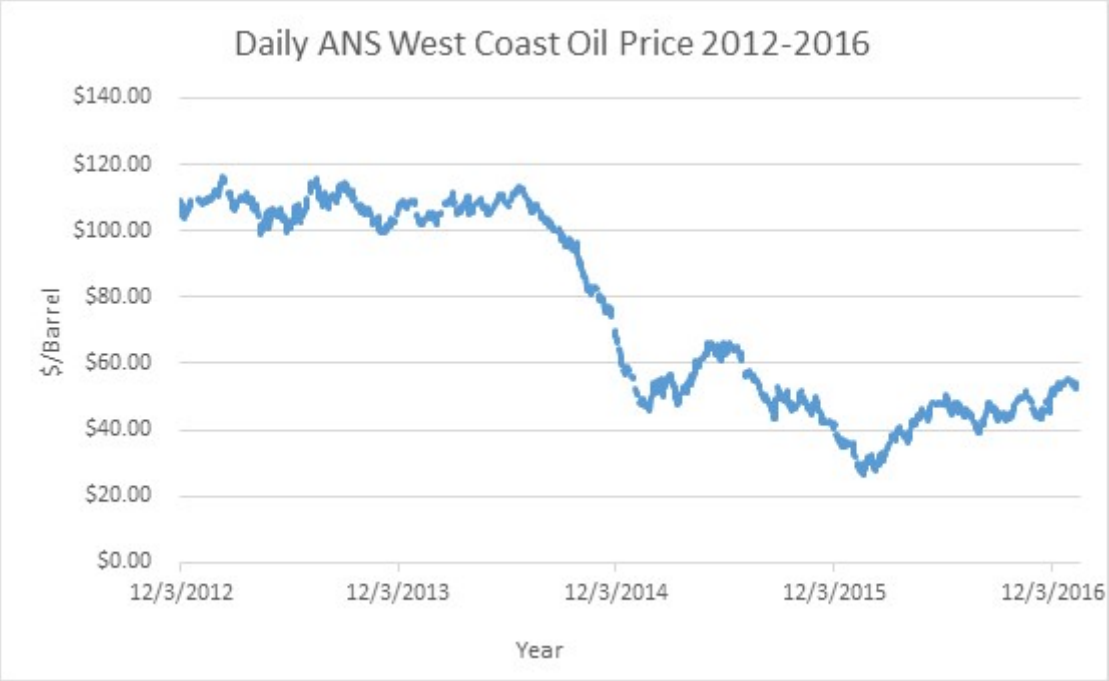
DOT&PF and FHWA have identified Alternative 1 – No Action as the preferred alternative. Both agencies recognize that this alternative will not solve the existing and future transportation problems in Lynn Canal. DOT&PF and FHWA continue to stand by the transportation purpose and need identified and refined over many years with input from the public and agencies, as defined in detail in Chapter 1.

All build alternatives would address the identified transportation problems in Lynn Canal. Alternative 1 – No Action provides only incremental improvement to Lynn Canal transportation challenges. However, travel costs for users will continue to be high; there will be limited opportunities for improvement in flexibility or frequency of when travel can occur; travel times will remain long; limited capacity improvement will be made toward satisfying corridor demand; and costs to the State will remain high considering the low number of vehicles served.

2.5.1 Alaska's Economic Conditions

Historically, Alaska's State budget has been heavily reliant on oil taxes/royalties to fund State government. According to the Institute of Social and Economic Research (ISER), between 2005 and 2014, oil revenues averaged 90 percent of Alaska's unrestricted general fund revenues (Knapp, 2015). The following graph (Graph 2-1) depicts the steep decline in oil prices, which has had a detrimental effect on the Alaska economy. While the JAI Project SEIS was in development, oil prices dropped precipitously, going from a high of more than $116 per barrel in February 2013 to a low of just over $26 per barrel in January 2016. While prices stabilized in the $40 to $50 per barrel range in 2016, this represents a price drop of more than 50 percent from the price levels that were experienced earlier in the decade.

Graph 2-1: Daily West Coast Oil Price, 2012-2016

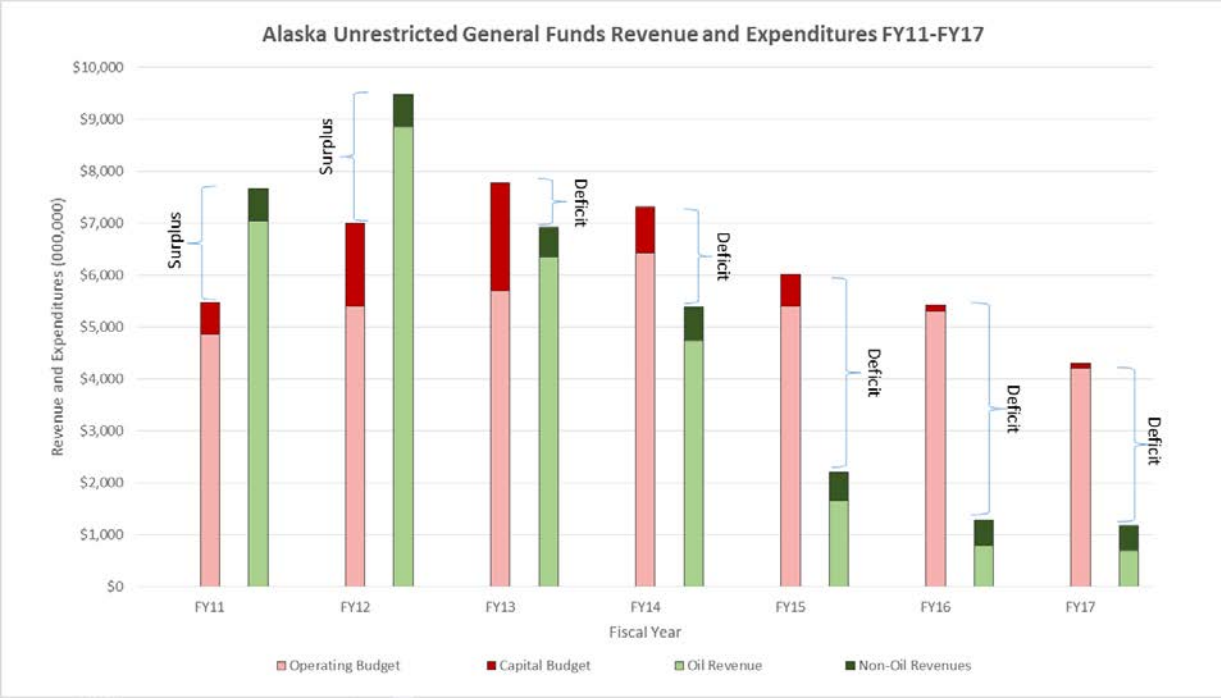


Source: State of Alaska, 2017b

Compounding matters, during that same timeframe, North Slope Oil production also declined. When the Draft SEIS was started in 2012, more than 212.7 million barrels per year were shipped through the Trans-Alaska Pipeline. By 2015 that number had declined to 185.5 million barrels—a 13 percent reduction (Alyeska Pipeline, 2017).

The drop in oil prices and declining production had a substantial impact on the State budget since the publication of the 2014 Draft SEIS. The impact is reflected in the following graph (Graph 2-2). Graph 2-2 shows that as the price of oil fell, Alaska's unrestricted general fund revenue fell commensurately. ISER reports that between 2012 and 2015 there was a $7.2 billion drop in oil revenues per year (an 81 percent decline; Knapp, 2015). Graph 2-2 also depicts the reliance on oil revenues for funding State government, which historically contributed approximately 90 percent until mid-2014. As a result of declining revenues, the Governor and Legislature have made major cuts to State capital and operating budgets.

Graph 2-2: Alaska Unrestricted General Funds Revenues and Expenditures, Fiscal Years 2011-2017



Source: Alaska Division of Legislative Finance, 2017

The State of Alaska started deficit spending in 2013, and that trend accelerated in 2014 with the collapse of oil prices. Graph 2-2 also depicts the cuts to Alaska's capital and operating budgets. Capital budgets, in particular, have been reduced, going from more than $2 billion in Fiscal Year (FY) 2013 to $96 million in FY 2017.

Despite cuts of $3.5 billion from the overall State budget between 2013 and 2017, the deficit still hovered around $3 billion per year in 2016 and 2017. Of note, during the preparation of the Draft SEIS in 2011 through 2013, the Alaska economy and budget were strong, and capital and operating budgets were growing and fully funded. In other words, data available at that time did not hint at the serious budgetary problems the JAI Project would be facing.

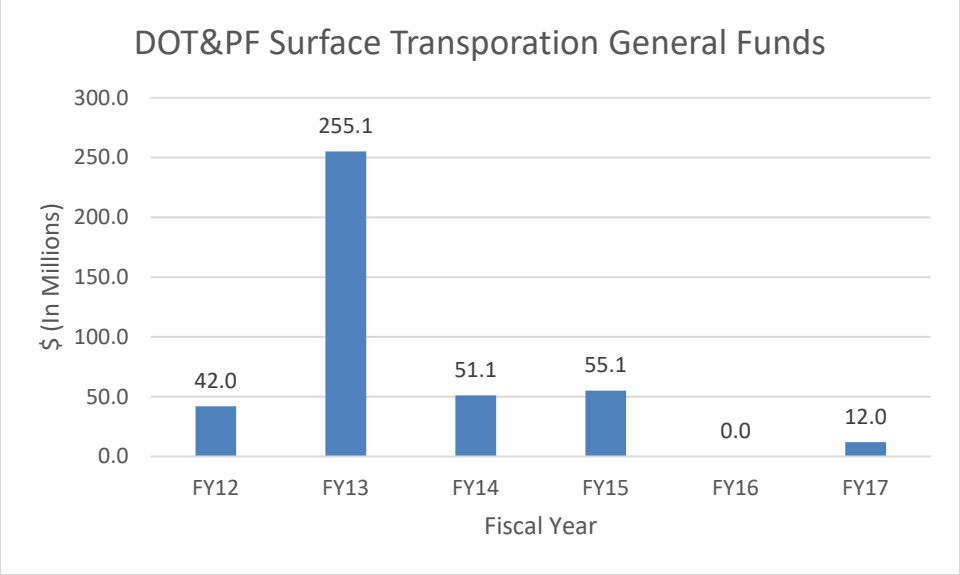
2.5.2 DOT&PF Surface Transportation Funding Sources

Alaska's current fiscal situation has affected all State spending, which includes funding for both capital surface transportation projects and DOT&PF's operating budget. DOT&PF's surface transportation program (capital and operating) has three primary sources of funding: (1) State General Funds (allocated through the State Capital Budget process); (2) Federal-aid Highway funds (generally require a 9 percent State match, which in Alaska is funded through State General Funds); and (3) General Obligation Bonds (paid back through State general funds over time). Federal-aid Highway funds cannot be used for operations. Each of these funding sources relies on State General Fund Dollars. With declining State monies available, substantial cuts have been made to both DOT&PF's capital and operating budgets.

General Funds. DOT&PF's General Funds are comprised of both capital funds and routine operating and maintenance funds.

Capital Budget. The following graph (Graph 2-3) shows General Fund contributions to DOT&PF's surface transportation capital program, which do not include State match for Federal-aid Highway funds. While the Draft SEIS was being prepared in 2012 and 2013, the State's General Fund was contributing in excess of $42 million to DOT&PF's surface transportation capital program each year. State General Fund contributions to the capital program are down to $12 million in FY 2017. That is a reduction of $30 million in DOT&PF's capital program as compared to FY 2012 (DOT&PF, 2017).

Graph 2-3: DOT&PF Surface Transportation General Funds



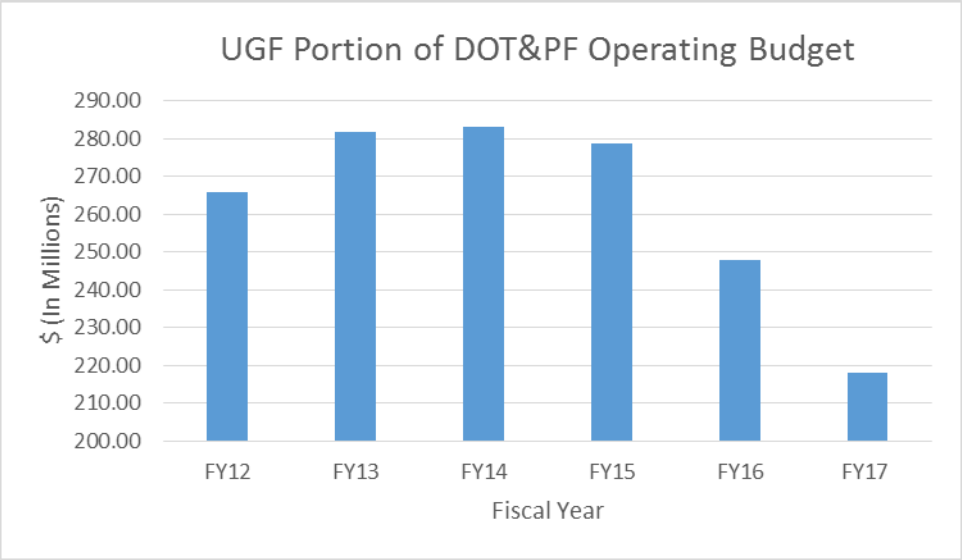
Note: Totals include named projects, Roads to Resources, and AMHS overhaul/maintenance. In FY 13, the Legislature funded a number of construction projects, including one ACF.

Alaska's Office of Management and Budget (OMB) reported in June 2016 that the State's main savings account would only last one more year without a balanced, sustainable fiscal plan, compelling Governor Walker to "conserve cash and avoid incurring additional debt" (State of Alaska, 2016a). The Governor suspended $100 million in DOT&PF State-funded transportation projects that were relying on General Fund dollars from previous capital budgets.[41] He also cut projects like Knik Arm Crossing—a major project that was proposed to be partially funded with State General Funds, State bonds, and U.S. Department of Transportation sources, including Federal-aid Highway funding and a direct loan through the Transportation Infrastructure Finance and Innovation Act. Even though that project had a large amount of federal dollars planned for its construction, due to its size, the contributing amount of State money was considered unaffordable, given the State's budget problems.

[41] Anchorage: U-Med District Northern Access; Matanuska-Susitna: Fairview Loop Road Reconstruction; Fairbanks: University Avenue Widening; Southeast: Kake-Petersburg Road

Operating Budget. DOT&PF's operating budget has seen similar cuts. The following graph (Graph 2-4) shows General Fund cuts to DOT&PF's operating budget.

Graph 2-4: Unrestricted General Fund Portion of DOT&PF's Operating Budget

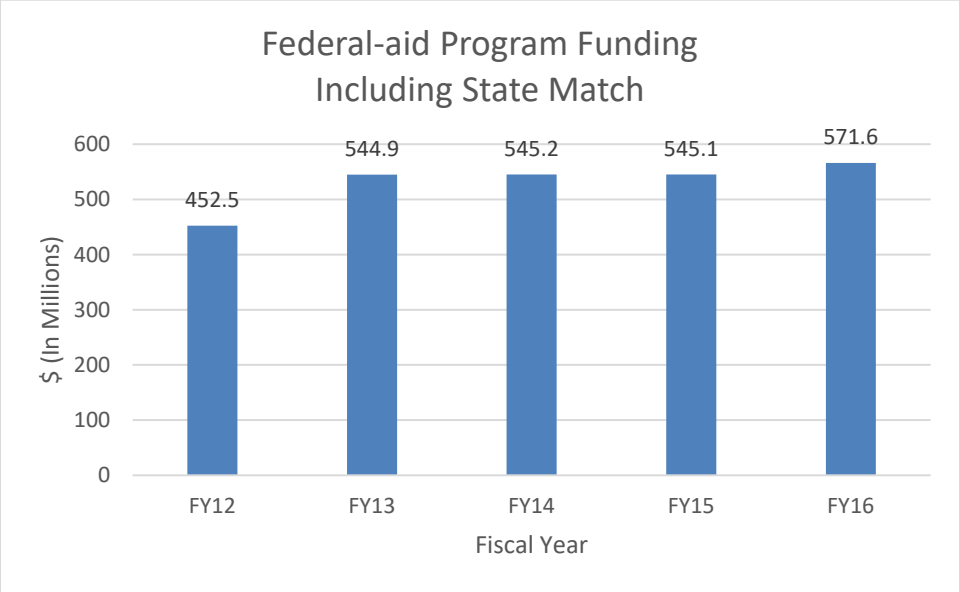


Source: State of Alaska, 2016d

DOT&PF's operating budget was cut from levels that hovered around $280 million in 2013 through 2015 to less than $250 million in 2016. In December 2016, the Governor announced additional cuts, indicating that DOT&PF's Unrestricted General Fund budget for operations would be reduced from the $278 million level funded in FY 2015 to $218 million in FY 2017 (a 22 percent reduction). These cuts required reducing equipment operators statewide by 10 percent, reducing hours of operation at hub airports, and cutting AMHS service (State of Alaska, 2016c). This reality also contributed to the selection of Alternative 1 – No Action as the preferred alternative.

Federal-aid Highway Funds. The following graph (Graph 2-5) shows that Federal Highway funding in Alaska has remained relatively stable over the last several years.

Graph 2-5: Federal-aid Program Funding



Note: Federal-aid Program funding includes the Core Highway Program and the Ferry Boat Program. The Core Highway Program consists of the National Highway Performance Program, Surface Transportation Block Grant Program, Transportation Alternatives Program, Congestion Mitigation and Air Quality, PM 2.5 Congestion Mitigation and Air Quality, Recreational Trails Program, Metropolitan Planning Funds, Highway Safety Improvement Program (Flexible, Rural, Rail and Penalty), Statewide Planning, Statewide Research, and National Highway Freight Program. The State match for the core highway program is approximately 9 percent and for the Ferry Boat program is approximately 20 percent. See www.fhwa.dot.gov/resources/legsregs/ for funding levels and www.fhwa.dot.gov/specialfunding/fbp/ for Ferry Boat Program funding information.

Between 2012 and 2015, Federal-aid Highway funding/State match ranged between $452.5 million and $545.1 million, and increased to $571.6 million in 2016. The increase in FY 2016 is due to funding provided under the passage of the Fixing America's Surface Transportation Act. The increase of $119.1 million between 2012 and 2016 represents a 26.3 percent increase over that 5-year period.

General Obligation Funds. The third primary source of surface transportation funding is General Obligation Bonds. The most recent bond package was passed by voters in 2013. That State-funded bond package totaled $254 million. The Governor suspended the issuance of $153 million in General Obligation Bonds from the 2013 voter-approved package, cancelling four highway projects[42] (State of Alaska, 2016a).

The net result is that the current budget deficit has affected the State's ability to advance a build transportation solution in Lynn Canal at this time. Given the State's budgetary reality, Alternative 1 – No Action is a prudent State direction from a fiscal standpoint.

[42] These projects include Glenn Highway, Hiland Road to Artillery Road Reconstruction (Anchorage); Old Steese Highway to McGrath Road Reconstruction and Extension (Fairbanks); Wendell Street Bridge Replacement (Fairbanks); and Knik-Goose Bay Road Reconstruction (Matanuska-Susitna Borough).

2.5.3 Controversy

The continued controversy on the JAI Project contributed to the decision to identify Alternative 1 – No Action as the preferred alternative. This project has had a history of division, with elected officials and the public split on how to proceed. The one thing all parties have agreed on is that there is a need to improve transportation in Lynn Canal; the question has been how to accomplish that. Feelings are strong on both sides, and the sentiment has wavered back and forth over the years on whether to build a road or to improve ferry service to improve transportation in Lynn Canal. The following project history provides a flavor of the controversy associated with the JAI Project and documents the lack of consensus on a course forward.

- February 1994. The City and Borough of Juneau (CBJ) Assembly adopted a resolution indicating that "the City and Borough of Juneau strongly supports improvements to the transportation system in the Lynn Canal corridor" (CBJ, 1994).
- March 18, 1997. The Haines Borough adopted a resolution opposing the construction of the "East Lynn Canal Road," supporting the other alternatives that did not bypass Haines (Haines Borough, 1997).
- June 1997. DOT&PF and FHWA issued a Draft EIS for the JAI Project. The 1997 Draft EIS did not identify a preferred alternative. The public comment period ran from June 23 to December 15, 1997. As documentation of the interest and controversy, approximately 3,000 public comments were received on the 1997 Draft EIS for and against road and ferry alternatives (see Appendix V of the 2006 Final EIS).
- November 11, 1997. The Haines Chamber of Commerce passed a resolution opposing construction of the East Lynn Canal Road and other road options and supporting improved ferry service (Haines Chamber of Commerce, 1997).
- December 8, 1997. The CBJ passed a resolution supporting improved access to Juneau. The resolution supported improvements to the ferry system in Lynn Canal in the short term, and encourage consideration of road access from Juneau to Skagway in the long term (CBJ, 2007b).
- 1999. A survey conducted for the City of Skagway "indicated that 49 percent of Skagway residents oppose a road while 46 percent were in favor of a road" (DOT&PF, 2006).
- January 2000. "Governor Knowles declared Alternative 2 the state's preferred alternative. At the same time, Governor Knowles stated that the alternative would not be actively pursued during his administration and that most work on the EIS would be discontinued. In February 2000, the DOT&PF Commissioner confirmed the state's selection of Alternative 2 as the preferred alternative to FHWA, along with a plan to continue obtaining specific data that would be crucial to restarting the EIS at a later date" (DOT&PF 2006).
- January 2000. Governor Knowles decided to advance construction of fast ferries. According to the *Juneau Empire*, "In January 2000, Knowles chose fast ferries as the solution to transportation problems in the upper Lynn Canal. He later vetoed $1.5 million appropriated by the Legislature to complete the EIS on Juneau access, which already had cost $5.1 million" (McAllister, 2001).

- March 12, 2000. Regarding Knowles' decision to move forward with a fast ferry alternative, the *Peninsula Clarion* reported, that "environmentalists hailed the decision to keep cars out of the Berners Bay watershed, a haven for wildlife, kayakers and campers. Civic leaders in Skagway and Haines did too, because they see the road as a threat to local business." The article quoted State Senator Robin Taylor as stating, "Fast ferries are a cruel joke." The *Peninsula Clarion* also reported that Representative Bill Hudson was frustrated that the State spent millions exploring the road when it had no chance of being built, and he was particularly incensed that DOT&PF was not considering building parts of the road to shorten the water miles to Haines and Skagway (Joling, 2000).
- October 2000. The 2006 FEIS reported, "Juneau voters were split on an advisory ballot question regarding preference for a long-range plan for surface access north from Juneau, with 5,840 choosing enhanced ferry service and 5,761 choosing a road" (2006 Final EIS).
- September 2002. A CBJ Assembly passed a resolution in support of "completion of the EIS for the identified preferred alternative for the road into Juneau …;" it passed by a 5 to 4 vote (2006 Final EIS).
- December 2002. Governor Murkowski "directed DOT&PF to aggressively pursue completion of the Juneau Access Improvements Project EIS. In February 2003, the DOT&PF Commissioner, after reviewing the Draft EIS and the reevaluation that called for a Supplemental Draft EIS, stated that Alternative 2 continued to be the state's preferred alternative. After careful scrutiny of all the studies prepared for the Supplemental Draft EIS, DOT&PF continued to prefer Alternative 2 because of its ability to best meet the purpose of and need for the proposed project, and identified it as the preliminary preferred alternative in the Supplemental Draft EIS" (2006 Final EIS).
- January 2003. The Haines Borough Assembly voted unanimously to request that a road to Haines (as opposed to a road to just Skagway) be included in the EIS (2006 Final EIS).
- March 26, 2003. According to the *Juneau Empire*, "After spending more than three years in project purgatory, the environmental study that could result in the construction of a road linking Juneau and Skagway or enhanced ferry service in upper Lynn Canal has been resurrected by the state Department of Transportation." The article reported that "Plans to build a road have been divisive in Juneau, Haines and Skagway, and many opponents have argued that road construction near Berners Bay cannot be done in an environmentally sound way" (Inklebarger, 2003).
- April 2003. The City Council of Skagway passed a resolution supporting improved ferry service and opposing a road connection by a 4 to 1 vote (2006 Final EIS).
- July/August 2003. As part of the EIS process, surveys were conducted in Juneau, Haines, Skagway, and Whitehorse (McDowell, 2003).
    - When asked about the importance of improving transportation in and out of Juneau, 78 percent of Juneau residents, 87 percent of Haines residents, and 83 percent of Skagway residents stated it was either important or very important.
    - When asked to choose between improved ferry service, an East Lynn Canal road, and a West Lynn Canal road, residents of the three communities showed very different preferences. Among Juneau residents, the top two alternatives were

improved ferry service and an East Lynn Canal road, each chosen by 36 percent of respondents; 53 percent of Haines residents preferred improved ferry service to either road alternative, while 33 percent chose the West Lynn Canal alternative; and 53 percent of Skagway residents preferred improved ferry service. The East Lynn Canal alternative was selected by 38 percent of residents.

- April 2004. The Haines Borough Assembly adopted a resolution requesting that the State and federal governments focus on enhancing marine transportation within the region (2006 Final EIS).
- October 2004. In an October 2004 advisory ballot, Skagway residents voted 62 to 38 percent in favor of improved ferry service over a road (2006 Final EIS; Inklebarger, 2004).
- January 15, 2004. The Skagway City Council passed a resolution "Supporting Ferry Service between Juneau and the Upper Lynn Canal and Opposing the Construction of any Road Linking Juneau to Skagway or Haines" (Municipality of Skagway, 2004b).
- January 2005. DOT&PF and FHWA released a Supplemental Draft EIS for public comment, accepting comments until March 2005. The Supplemental Draft EIS identified Alternative 2 as the preferred alternative for the JAI Project.
- March 2005. DOT&PF received a total of 1,373 written submissions during the public review period and oral testimony from a total of 227 individuals who attended the four public hearings held in Juneau, Haines, and Skagway. Approximately 11,000 comments were identified (2005 Supplemental Draft EIS). Comments submitted during the review period for the Supplemental Draft EIS that expressed a preference regarding alternatives were approximately 60 percent in support of a highway, with 40 percent preferring a marine alternative. During the Supplemental Draft EIS review period, both branches of the Alaska Legislature submitted resolutions in support of Alternative 2, the East Lynn Canal Highway with Katzehin Terminal (2006 Final EIS).
- January 2006. FHWA issued a Final EIS for the JAI Project. Alternative 2B (East Lynn Canal Highway to Katzehin, with shuttles to Haines and Skagway) was identified as the preferred alternative (2006 Final EIS).
- April 2006. FHWA signed the Record of Decision (ROD) for the JAI Project. Alternative 2B (East Lynn Canal Highway to Katzehin, with shuttles to Haines and Skagway) was the selected alternative (2006 ROD).
- August 16, 2006. A lawsuit was filed in District Court alleging, among other items, that FHWA violated NEPA by failing to consider reasonable alternatives for improving transportation in Lynn Canal that use existing infrastructure without new construction.
- October 29, 2007. Governor Sarah Palin's office issued a statement urging people to contact their legislators to support an East Lynn Canal Highway (included as a "whereas" statement in Haines Borough, 2007b).
- November 2007. The Haines Borough Assembly adopted a resolution reaffirming its support for their earlier resolution (04-04-042) expressing a "preference for improved ferry service rather than an East Lynn Canal Highway" (Haines Borough, 2007b).

- February 13, 2009. The District Court vacated FHWA's ROD, concluding that FHWA violated NEPA by failing to consider an alternative for improved ferry service using existing ferries and terminals (*Southeast Alaska Conservation Council, et al. v. Federal Highway Administration*, 2009 WL 10677763 [D. Alaska, 2009]).
- February 2009. The *Municipality of Skagway 2020 Comprehensive Plan* was adopted and included a policy that stated, "Support the AMHS and private ferry service (for public use) to and from Skagway. Support regular day boat ferry service in Lynn Canal and continue to improve AMHS ferry service and scheduling" (Municipality of Skagway, 2009:55).
- January 2011. The Haines Borough Assembly passed a resolution that reaffirmed two earlier resolutions and expressed "their continued preference for improved ferry service rather than an East Lynn Canal Highway" (Haines Borough, 2011).
- May 2011.The State of Alaska appealed the District Court ruling to the U.S. Court of Appeals for the Ninth Circuit and in May 2011, the three-judge panel ruled 2 to 1 to uphold the District Court decision that the 2006 Final EIS was not valid because it did not include an alternative that would improve transportation using existing assets (649 F.3d 1050 [9th Cir. 2011]).
- January 2012. In response to the Court ruling, FHWA determined that an SEIS should be prepared for the JAI Project. FHWA began this process by publishing a Notice of Intent (NOI) in the *Federal Register* on January 12, 2012, to formally announce the initiation of the JAI SEIS (*Federal Register*, Volume 77, Number 8, 2012; 2012 SEIS *Scoping Summary Report*).
- November 2013. CBJ adopted an update to the comprehensive plan that included the following policy: "Support development of a Lynn Canal Highway, as this facility is important to provide improved transportation to the Capital City for Alaska's citizens, Alaska's legislators, and for the economic well-being of Juneau and the Southeast Region" (CBJ, 2013:108).
- March 2014. Haines Mayor Stephanie Scott sent a letter to the Senate and House Transportation Committees expressing the Borough's preference for improved ferry service over a hard link. (Haines Borough, 2014).
- September 2014. DOT&PF and FHWA released a Draft SEIS. The comment period ended November 25, 2014. More than 42,200 communications were received. The project garnered attention from national environmental groups, which were able to generate more than 41,000 form letters from across the country. Comments were received, both for and against nearly every alternative, with the most attention paid to Alternative 2B (the DOT&PF's preferred alternative identified in the Draft SEIS).
- December 2016. Governor Bill Walker articulated the State's fiscal circumstances in a press release dated December 15, 2016, announcing that he preferred Alternative 1 – No Action and that the JAI Project was being cut from the budget. He stated, "I am a builder by background and understand the importance of construction projects, but I am very concerned with our current multi-billion dollar fiscal crisis and must prioritize the need for fiscal resolution" He added that he "made this difficult decision after reviewing all

litigation and all federal regulatory decisions on this project to date" (State of Alaska, 2016d).

- December 2016. Governor Walker's announcement generated its own controversy. Senator Dennis Egan stated, "I've supported this project since statehood. I'm very disappointed my three largest communities will lose the benefit from improved transportation, commerce and tourism" (Alaska Senate Democratic Caucus, 2016)
- January 23, 2017. The CBJ Assembly adopted Resolution 2784, "A Resolution Affirming the City and Borough of Juneau's Continuing Support of the Juneau Access Project." Adopted as amended. (CBJ, 2017)

As can be seen by the history of the JAI Project, controversy has remained high throughout its lifetime. There is no consensus among the communities of Juneau, Haines, and Skagway (in their plans or by their elected officials) as to which build alternative best meets the region's needs.

2.5.4 Summary

In summary, DOT&PF and FHWA find the following:

- Declining oil prices have caused the need for cuts to State budgets;
- Declining revenues, particularly General Fund revenues, have resulted in substantive cuts to DOT&PF's capital and operating budgets;
- The net result of the current budget shortfalls is that the State cannot afford a high-cost, build transportation project in Lynn Canal at this time; and
- Controversy on the JAI Project is high.

Given the State's budgetary reality, coupled with a high level of controversy, DOT&PF and FHWA have identified Alternative 1 – No Action as the preferred alternative.

2.6 Funding Considerations

Because DOT&PF and FHWA intend to select Alternative 1 – No Action in the ROD, no capital funding is necessary. Fares on marine links, along with State general funds, would continue to fund M&O for the ferry links on Alternative 1 – No Action.

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