APPENDIX E

USER BENEFIT ANALYSIS

JUNEAU ACCESS IMPROVEMENTS
SUPPLEMENTAL DRAFT
ENVIRONMENTAL IMPACT STATEMENT

STATE PROJECT NUMBER: 71100
FEDERAL PROJECT NUMBER: STP-000S (131)

Prepared for

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OCTOBER 2004

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The purpose of this study is to compare the economic benefits and costs of the ten Juneau Access alternatives. This study was prepared in support of the Juneau Access Supplemental Draft Environmental Impact Statement (SDEIS). The ten alternatives are:

Alternative 1 – No Action

Alternative 2 – East Lynn Canal Highway with Katzehin Terminal

Alternative 2A – East Lynn Canal Highway with Berners Bay Shuttle

Alternative 2B – East Lynn Canal Highway to Katzehin, shuttles to Haines and Skagway

Alternative 2C – East Lynn Canal Highway with shuttle to Haines from Skagway

Alternative 3 – West Lynn Canal Highway

Alternative 4A – Fast Vehicle Ferry (FVF) Shuttle Service from Auke Bay

Alternative 4B – FVF Shuttle Service from Berners Bay

Alternative 4C – Conventional Monohull Shuttle Service from Auke Bay (Dayboat)

Alternative 4D – Conventional Monohull Shuttle Service from Berners Bay (Dayboat)

This study uses construction and operating/maintenance cost data provided by ADOT&PF. It also draws on information provided in the Juneau Access Traffic Forecast Report, the Juneau Access Marine Segments Technical Report, and other documents.

Key Findings

As shown in Table I, the two alternatives with an unbroken highway link between Juneau and Skagway provide the greatest net economic benefit among the Juneau Access alternatives. The alternatives, 2 and 2C, both produce a $115 million net benefit, compared to the No Action alternative.

Only one marine alternative, 4D –Berners Bay Dayboat, provides a net benefit compared to the No Action alternative. Even so, the benefit is small, $2.9 million over the study period.

TABLE I

Evaluation Summary
Net Present Value (NPV)

Alternative	NPV $000	Rank	Breakeven
1 - No Action	0	7	NA
2 - East Lynn with Katzehin	115,218	1	2022
2A - East Lynn with Berners Shuttle	46,055	4	2031
2B - East Lynn to Katzehin	70,276	3	2024
2C - East Lynn without Katzehin	114,528	2	2022
3 - West Lynn Highway	32,195	5	2033
4A - FVF Auke Bay	(55,587)	9	None
4B - FVF Berners Bay	(22,945)	8	None
4C - Dayboat Auke Bay	(57,120)	10	None
4D - Dayboat Berners Bay	2,855	6	2038

Note: Values in parenthesis indicate negative net present values.

The analysis is based on a certain set of assumptions (referred to as the "base case") about construction costs, maintenance and operations costs, and other factors. Sensitivity of the analysis to higher than expected construction costs was tested (referred to as "sensitivity cases"). As indicated in Table II, the rankings of the alternatives change only slightly when the effect of higher than expected construction cost is considered. For example, if construction costs were 25 percent or more higher than predicted, Alternative 2C would produce the highest net present value (and therefore be ranked first). Alternative 2 would be ranked second.

TABLE II

Net Present Value Rankings
With Construction Cost Overruns

Alternative	Base Case	Sensitivity Cases Construction Cost Overrun 25%	50%
1 - No Action	7	4	3
2 - East Lynn with Katzehin	1	2	2
2A - East Lynn with Berners Shuttle	4	(5)	(6)
2B - East Lynn to Katzehin	3	3	(4)
2C - East Lynn without Katzehin	2	1	1
3 - West Lynn Highway	5	(7)	(7)
4A - FVF Auke Bay	(9)	(10)	(10)
4B - FVF Berners Bay	(8)	(8)	(8)
4C - Dayboat Auke Bay	(10)	(9)	(9)
4D - Dayboat Berners Bay	6	(6)	(5)

Note: Rankings in parenthesis indicate alternatives with negative net present values.

As indicated in Table III, Alternative 2C – East Lynn without Katzehin has the lowest State-funded total project life-cycle costs in every case. Total project costs are the

sum of the capital and operating costs for each alternative. Life-cycle cost is the sum of the present values of total project costs over the life of the project. Alternative 2 – East Lynn with Katzehin has the second lowest cost in every case.

TABLE III

Alternative Rankings
Total Project Life-Cycle Cost, State Funds Only
(Present Value of State-Funded Capital and Operating Costs)

		Sensitivity Cases	
	Base	Construction Cost Overrun	
Alternative	Case	25%	50%
1 - No Action	6	6	6
2 - East Lynn with Katzehin	2	2	2
2A - East Lynn with Berners Shuttle	3	3	3
2B - East Lynn to Katzehin	4	4	4
2C - East Lynn without Katzehin	1	1	1
3 - West Lynn Highway	5	5	5
4A - FVF Auke Bay	10	10	10
4B - FVF Berners Bay	9	9	9
4C - Dayboat Auke Bay	8	8	8
4D - Dayboat Berners Bay	7	7	7

In the Base Case, Alternative 2C's State-funded project costs total $120.9 million, compared to $187.2 million for the No Action alternative. The least costly marine alternative, 4D, has total State-funded capital and operating costs of $203.9 million.

Therefore, the unbroken highway links to Skagway again dominate the rankings on the basis of State-funded project costs. By this yardstick, all highway alternatives outrank all marine alternatives, including the No Action alternative.

This superior ranking of highway alternatives over marine alternatives is the product of:

- a 90.97% Federal funding ratio for capital costs; and,
- a predominance of capital costs for highway alternatives, versus operating costs being the dominant cost for marine alternatives.

Operating costs, which are totally State-funded, make up over half of all marine alternatives' total project costs, compared to as little as one-third of total costs for highway alternatives.

When State revenues are considered (Alaska Marine Highway System fares and the State highway fuel tax), the No Action alternative has the lowest cost to the state. Alternatives 2 and 2C rank second and third. (It is important to note that the No Action alternative, in addition to the lowest net State cost, offers the lowest level of

service. In fact, the lowest cost alternative for the State would be to offer no service at all.) The No Action alternative has an annualized State-funded net project cost of $3.6 million per year in the Base Case. Alternatives 2 and 2C both average approximately $3.8 million a year, while the least costly marine alternative, 4D, costs $4.1 million a year.

Considering the impacts only on travelers, Table IV shows that Alternative 2 – East Lynn with Katzehin ranks the highest, both in terms of lowest cost to users and greatest total user benefits. User benefits reflect the number of travelers as well as the travel cost to each user. All highway alternatives outrank all marine alternatives. Alternative 2 produces user benefits with a total present value of $288 million, 2C $271 million, and 4B (the highest marine alternative) $107 million.

TABLE IV

Alternative Rankings
User Costs and User Benefits

Alternative	User Cost (lowest = 1) To/from Auke Bay	User Cost (lowest = 1) Haines to/from Skagway	User Benefits (highest = 1)
1 - No Action	10	6	10
2 - East Lynn with Katzehin	1	1	1
2A - East Lynn with Berners Shuttle	3	2	3
2B - East Lynn to Katzehin	4	5	4
2C - East Lynn without Katzehin	2	3	2
3 - West Lynn Highway	5	3	5
4A - FVF Auke Bay	7	7	7
4B - FVF Berners Bay	6	7	6
4C - Dayboat Auke Bay	9	7	9
4D - Dayboat Berners Bay	8	7	8

This study provides a detailed analysis of the user benefits and costs associated with each Juneau Access alternative. The following chapters include extensive discussion of methodology, key assumptions, and the results of sensitivity analyses.

The purpose of this study is to compare the economic benefits and costs of the ten Juneau Access alternatives.

The analysis measures the increase in benefits and costs of each of the nine "build" alternatives compared to Alternative 1—the No Action alternative. If the incremental benefits of a "build" alternative exceed its incremental costs, the project is economically worth doing.

The ten alternatives represent mutually exclusive projects. In other words, they are all ways of addressing the same transportation need. If any one of them is chosen, the other alternatives will not be built or operated.

Thus, the alternative, if any, with the greatest net benefits (benefits minus costs) is the most economically worthwhile project. In terms of the economic measure used in this report, the most worthwhile project is the one with the greatest net present value.

Benefits and costs included in this analysis are limited to those that are relatively certain, can be quantified and valued in dollars, and for which there is an accepted methodology of calculation.

Benefits are limited to user benefits. User benefits are the reduction in travel costs for travelers on a Juneau Access alternative, compared to the No Action alternative. Travel costs are the sum of the costs of travelers' time, passenger and vehicle ferry fares, vehicle operating and ownership costs, and accident costs.

Economic development benefits are not included in this study. They are addressed in the socioeconomic report.

Costs are limited to the construction, operating, and maintenance costs of each alternative. Impacts of the alternatives on the capital or operating costs of the AMHS outside of northern Lynn Canal are not part of this study.[1] External costs including public safety and emergency response-related service costs, pollution and global warming costs, and loss of wildlife or wilderness values are not included in this analysis. They are addressed in the socioeconomic and other SDEIS technical reports.

This analysis identifies the most economically valuable project. But, it does not eliminate the need to consider the other economic, socioeconomic, developmental, and environmental impacts that are outside the scope of the analysis. The benefit/cost analysis does not dictate project selection.

This analysis has relied on preliminary working drafts of other reports prepared as part of the Juneau Access SDEIS. Numbers in the final versions of these other

[1] The crediting of residual values of marine vessels against the capital costs of marine alternatives could be considered an exception to this statement. See the report section entitled "Residual Values".

reports may have changed from those in the drafts cited in this report. Any such changes are not believed to be significant.

Alternatives

Alternative 1 – No Action

The No Action Alternative does not provide for construction of any new roads or vessels. Under Alternative 1, Lynn Canal service would consist of:

- three Alaska Marine Highway mainline vessel round trips per week through Lynn Canal year round;
- daily shuttle on the *M/V Aurora* between Haines and Skagway beginning as early as 2005, with three round trips in the summer and two in the winter; and,
- the *FVF Fairweather* operating:
    - between Juneau and Haines five days per week and between Juneau and Skagway four days per week during the 5 summer months. Lynn Canal service is counted as 5 out of 7 operating days in summer for allocating vessel costs to Lynn Canal, since *FVF Fairweather* runs 2 days per week to Sitka.
    - two days per week to both Haines and Skagway in the winter. This represents 50 percent of the vessel's operating time for the 7 winter months, because it only operates two other days per week to Sitka.

Road Alternatives 2, 2A-C, and 3

The five road alternatives would make extensive use of roads to link Juneau with Haines and Skagway. Alternatives 2 and 2A-C would construct a road on the east side of Lynn Canal, all or part of the way from Echo Cove to Skagway. Alternative 3's major road link would lie on the west side of Lynn Canal.

All of the road alternatives make some use of shuttle ferries for shorter connections. Each alternative includes the *M/V Aurora* as a shuttle until demand exceeds the *M/V Aurora*'s capacity with a 16-17 hour schedule. This economic analysis is based on replacing the *M/V Aurora* with an optimal vessel at that time. AMHS may choose instead to operate on a longer schedule or construct a supplemental vessel rather than a replacement vessel.

There would be no mainline ferry service in Lynn Canal for any of the road alternatives. The *FVF Fairweather* would not operate in Lynn Canal.

Alternative 2 – East Lynn Canal Highway with Katzehin Terminal

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. A ferry terminal would be constructed north of the Katzehin River delta, and operation of the *M/V Aurora* would change to shuttle service between Katzehin and the Lutak Ferry Terminal in Haines. A new vessel would replace the *M/V Aurora* in 2016. Mainline AMHS service would end at Auke Bay, and the Haines to Skagway shuttle service would be discontinued. The *FVF Fairweather* would no longer operate in Lynn Canal.

Alternative 2A – East Lynn Canal Highway with Berners Bay Shuttle

This alternative would construct a 5.2-mile highway from the end of Glacier Highway at Echo Cove to Sawmill Cove in Berners Bay. Ferry terminals would be constructed at both Sawmill Cove and Slate Cove, and shuttle ferries would operate between the two terminals. A 52.9-mile highway would be constructed between Slate Cove and Skagway. A ferry terminal would be constructed north of the Katzehin River delta, and the *M/V Aurora* would operate between the Katzehin and the Lutak Ferry Terminals. A new vessel would replace the *M/V Aurora* in 2021. Mainline AMHS service would end at Auke Bay, and the Haines to Skagway shuttle service would be discontinued. The *FVF Fairweather* would no longer operate in Lynn Canal.

Alternative 2B - East Lynn Canal Highway to Katzehin, shuttles to Haines and Skagway

This alternative would construct a 50.5-mile highway from the end of Glacier Highway at Echo Cove, around Berners Bay, to a point north of the Katzehin River delta. Shuttle ferry service to both Skagway and Haines would be provided from a new terminal at Katzehin. The Haines to Skagway shuttle service would continue to operate[2], with two new shuttle ferries and the *M/V Aurora* forming a three-vessel system. A new vessel would replace the *M/V Aurora* in 2028. Mainline AMHS service would end at Auke Bay and the *FVF Fairweather* would no longer operate in Lynn Canal.

Alternative 2C – East Lynn Canal Highway with shuttle to Haines from Skagway

This alternative would construct a 68.5-mile highway from the end of Glacier Highway at Echo Cove around Berners Bay to Skagway with the same design features as Alternative 2. The *M/V Aurora* would continue to provide service to Haines. A new vessel would replace the *M/V Aurora* in 2018. No ferry terminal would be constructed north of the Katzehin River delta. Mainline ferry service would end at Auke Bay, and the *FVF Fairweather* would no longer operate in Lynn Canal.

[2] The Haines to Skagway shuttle service would operate only in the summer. Local traffic between Haines and Skagway in the winter would require two shuttle legs, stopping in Katzehin.

Alternative 3 – West Lynn Canal Highway

This alternative would extend Glacier Highway 5.2 miles from Echo Cove to Sawmill Cove. Ferry terminals would be constructed at Sawmill Cove and William Henry Bay, and displacement vessel shuttle ferries would operate across Lynn Canal between the two terminals. A 38.9-mile highway would be constructed from William Henry Bay to Haines with a bridge across the Chilkat River/Inlet connecting to Mud Bay Road. The *M/V Aurora* would continue to operate as a shuttle between Haines and Skagway. A new vessel would replace the *M/V Aurora* in 2030. Mainline ferry service would end at Auke Bay, and the *FVF Fairweather* would no longer operate in Lynn Canal.

Marine Alternatives 4A-D

The four marine alternatives would all provide increased ferry service in Lynn Canal, compared to the No Action alternative. There would be daily ferry service between all Lynn Canal communities.[3] Table V below, compares the daily service schedules between Juneau and Haines and Skagway.

TABLE V

AMHS Daily Round Trips from Auke Bay or Berners Bay

	Haines		Skagway	
Marine Alternative	Summer	Winter	Summer	Winter
4A - FVF Auke Bay	2.0	1.0	2.0	1.0
4B - FVF Berners Bay	4.0	1.0	2.0	1.0
4C - Dayboat Auke Bay	1.0	.5	1.0	.5
4D - Dayboat Berners Bay	2.0	.5	2.0	.5

Juneau Access project descriptions initially characterized alternatives 4C and 4D as "dayboat" alternatives. That title is used throughout this study. Since the development of this document, 4C and 4D have been relabeled as "Conventional Monohull Shuttle Service."

The four marine alternatives would construct new shuttle ferries to operate in addition to continued mainline service in Lynn Canal. The alternatives consist of either two high-speed ferries—Alternatives 4A and 4B—or two displacement dayboats—Alternatives 4C and 4D. All of the alternatives would include a minimum of two mainline vessel round trips per week, year-round, and continuation of the Haines/Skagway shuttle service provided by the *M/V Aurora*—

[3] Daily service in winter to either particular community under the dayboat alternatives 4C and 4D would require a shuttle connection between Haines and Skagway every other day.

three round trips per day in the summer and two in the winter. The *FVF Fairweather* would no longer operate in Lynn Canal. All of these alternatives would require construction of a new double stern berth at Auke Bay.

Alternative 4A – Fast Vehicle Ferry (FVF) Service from Auke Bay

This alternative would construct two FVFs to provide daily service from Auke Bay to Haines and to Skagway. There also would be two mainline vessel round trips per week. The *M/V Aurora* would provide daily shuttle connections between Haines and Skagway. The *FVF Fairweather* would not operate in Lynn Canal.

Alternative 4B – FVF Service from Berners Bay

This alternative would extend Glacier Highway 5.2 miles from Echo Cove to Sawmill Cove where a new ferry terminal would be constructed. Two FVFs would be constructed to provide daily service from Sawmill Cove to Haines and to Skagway in the summer and from Auke Bay to Haines and to Skagway in the winter.

There also would be two mainline vessel round trips per week. The mainline vessels would operate out of Auke Bay year round. The *M/V Aurora* would provide daily shuttle connections between Haines and Skagway. The *FVF Fairweather* would not operate in Lynn Canal.

Alternative 4C – Conventional Monohull Shuttle Service from Auke Bay (Dayboat)

This alternative would construct two conventional monohull vessels to provide daily service from Auke Bay to Haines and to Skagway in the summer and service from Auke Bay to Haines and to Skagway on alternating days in the winter.

The *M/V Aurora* would provide daily shuttle connections between Haines and Skagway winter and summer. There also would be two mainline vessel round trips per week. The *FVF Fairweather* would not operate in Lynn Canal.

Alternative 4D - Conventional Monohull Shuttle Service from Berners Bay (Dayboat)

This alternative would extend Glacier Highway 5.2 miles from Echo Cove to Sawmill Cove where a ferry terminal would be constructed. Two conventional monohull vessels would be constructed to provide daily service from Sawmill Cove to Haines and to Skagway in the summer and alternating day service from Auke Bay to Haines and to Skagway in the winter.

The *M/V Aurora* would provide daily shuttle connections between Haines and Skagway winter and summer. There also would be two mainline vessel round trips per week. The mainline vessels would operate out of Auke Bay year round. The *FVF Fairweather* would not operate in Lynn Canal.

Present Value and Annualized Amounts

Benefits and costs are estimated for each year of a 35-year study period, from 2004 to 2038. We also compute the present value of each year's benefits and each year's

costs. The total of the present values of an alternative's benefits and costs for all years is the net present value of an alternative.

Present value is a value at a particular point in time. It is the amount of money that, invested at that point in time at a specified rate of return, would compound to the amount of the benefit or cost in the year in which the benefit or cost occurs. The rate of return is called the discount rate. All present values in this study are as of January 1, 2004.

For example, the present value of total project costs is the amount of money needed on January 1, 2004 to fund all of the project expenditures, both capital and operating, over the entire construction period and project life. It assumes unspent balances are invested at the discount rate.

We also compute annualized net project costs.[4] The annualized net cost is an amount that, if expended each and every year of the project's construction and life, would cost the same, in present value, as the project's actual net expenditures.[5]

Budgetary Constraints

This analysis evaluates the alternatives under the State of Alaska's budgetary constraints, as well as from a purely economic point of view. It offers three ways to look at budgetary concerns:

- Life-cycle cost (LCC) analysis;
- Benefit/cost (B/C) ratios; and,
- State funds.

Life-Cycle Cost Analysis

The study presents each alternative's life-cycle costs. These are the project costs standing alone—i.e., without benefits. This is one way of evaluating the alternatives from the standpoint of the State's budgetary constraints. Aside from the benefits, the State may want to pick an alternative that costs less, for purely budgetary reasons.

The purpose of life-cycle cost analysis is different than benefit-cost analysis. Benefit-cost analysis is done to determine if a project is worth doing. It is a comprehensive evaluation of not only project costs, but also benefits and the opportunity costs to society.

[4] The use of the term "net" denotes the fact that government revenues and residual values for capital assets have been deducted from project capital and operating costs.

[5] Similarly, an annualized benefit could be computed. It would be an amount that, if received each and every year over the 35 years, would have the same present value as a project's actual flow of benefits. This report does not report annualized benefits. We have used annualized values only in connection with life-cycle cost analysis.

The objective of life cycle cost analysis is to identify the least cost alternative for achieving some purpose. It treats the decision to undertake a project as a done deal and seeks to find the least cost method of achieving it.

Different discount rates are used for LCC analysis than for benefit/cost analysis. The discount rates for life-cycle costs represent the costs to State government for the funds used. Specifically, the State's cost of capital is used for construction costs and the State's return on invested funds is used for operating and maintenance costs.

The discount rate for benefit-cost analysis represents the costs to society as a whole for the funds used. Specifically, the rate is the marginal pre-tax return on private sector investments.

Life-cycle costs are shown as the total costs for each alternative, rather than the incremental costs in comparison to the No Action alternative.

Benefit/Cost (B/C) Ratios

Generally, net present value is the best guide to project selection for Juneau Access alternatives. The ratio of benefits to cost (both measured incrementally from the No Action alternative) provides a measure of the bang for the buck. But, the ratio is a proper guide for selecting a Juneau Access alternative only if it is in competition with non-Juneau Access projects for a limited pool of funds.

If there are no budgetary constraints, the optimal project is the one with the highest net present value. The optimal project, in comparison with any other alternative, will provide more incremental benefits than it costs (incrementally). If this were not so, then the "optimal project" would in fact have a lower net present value than some other alternative, and therefore not be optimal.

For example, consider alternatives A, B and C in Table VI below. Is B optimal? B provides more benefits than A. But, to get an additional $5 in benefits, you have to spend an additional $10. It is almost a truism that B must have a lower net present value than A, and it does. One would be better off doing A and putting B's extra $10 for costs in your pocket. Your total worth would then be $85.

Does this make A optimal? Well, C has a higher NPV. And, our logical test indicates it must be a better choice than A. C only costs an additional $10, but provides $15 in return. So clearly, C would be the best choice, if you have or can raise the $60 it would cost.

TABLE VI

Alternative Ranking
Net Present Value vs. Benefit Cost Ratio
Hypothetical Example

Alternative	Costs	Benefits	NPV	B/C
A	50	125	75	2.50
B	60	130	70	2.17
B-A	10	5	(5)	
C	60	140	80	2.33
C-A	10	15	5	

The optimal project may not have the highest benefit/cost ratio. This is the case in our example above. C has a lower benefit/cost ratio than A. But, C is still optimal because its additional cost more than pays for itself in terms of additional benefits. As long as there are no limits on funding, it makes sense to allocate whatever additional funds are required to achieve the additional benefits.

If in fact, budgets are constrained, net present value may still be the best criterion for project selection. If the constraint were on funds that would only be used for Juneau Access, the optimal project would still be determined by net present value. An example would be a maximum earmarked amount of Federal highway aid that Alaska's Congressional delegation might be able to obtain for Juneau Access. In such a case, the best alternative would be the one with the highest net present value whose Federal costs do not exceed the budget constraint.

If the constraint were on funds—such as State general funds—that could be used for both Juneau Access and other projects, then benefit/cost ratios would be needed. A "bang per buck" concept only becomes an issue when the amount of funds is limited and has alternative uses.

In that case, the best Juneau Access project, and the other projects, would all be selected according to B/C ratios.[6] The entire constellation of projects would have to fit within the specified budget.

[6] The project selection procedure can become rather complex, but basically proceeds as follows:

1. rank all projects in descending order of B/C ratios;
2. select projects until the budget is exhausted;
3. upon selection of any Juneau Access alternative, calculate an incremental B/C ratio for the next highest cost Juneau Access alternative; the ratio is the incremental benefits/incremental cost of the next highest cost alternative in comparison to the selected alternative;

In this study, neither the limits on funds nor the B/C ratios of competing non-Juneau Access transportation projects are known. Therefore, no use is made of B/C ratios in this report for project evaluation. They are reported only for informational purposes should they be needed in other studies the State might undertake.

State Funds

Net present value, B/C ratios, economic costs, life-cycle costs, and annualized costs are presented in terms of both total costs and State costs. The difference is that:

1. State capital costs do not include the Federal aid to highways for construction costs; and,

2. State revenues do not include the Federal highway tax on gasoline.

We assume Federal aid covers 90.97 percent of all capital costs, including road construction, new vessel construction, vessel refurbishment, and terminal construction. 90.97 percent is the current Federal match for the National Highway System (NHS), Surface Transportation Program (STP), and several other Federal highway categorical aid programs. Federal highway taxes are estimated at the current rate of 18.4 cents per gallon.

The State's fiscal duress may make evaluation based on State costs a salient consideration. This may reflect perceived limits on State funding or a tendency to view the expenditure of Federal funds as being without cost to the State.

Evaluation based on State cost alone presumes that there is no cost to either the State or the nation for the Highway Trust Fund dollars used for the project.

In reality, there are limits to the availability of these Federal funds. At the state level, their use for Juneau Access might foreclose construction of other projects in the state. Even if Alaska's Congressional delegation obtained special funding for Juneau Access, funding would still come from the fixed pot of money represented by the Highway Trust Fund. This means that somewhere else in the country, some highway project would be foregone.

Even if one were to view the Highway Trust Fund as a source of funds that could be increased, expenditures on Juneau Access would consume real economic resources. It would ultimately reduce expenditures for some other purpose, either U.S. government programs or highway users' or taxpayers' consumption or investment.

4. if the incremental B/C ratio is greater than one, greater than the B/C ratio for any other unselected non-Juneau Access project, and the alternative fits within the budget, replace the selected Juneau Access alternative with the next highest cost alternative;
5. continue testing all higher cost Juneau Access alternatives against the selected one until all Juneau Access alternatives have been tested or the budget has been exhausted.

Discount Rates

This study uses different discount rates for benefit-cost analysis and life-cycle cost analysis. The discount rate for benefit-cost analysis represents the opportunity cost of funds to society as a whole. The rates for life-cycle cost analysis represent the cost of funds to State government.

In addition, the discount rates used in life-cycle cost analysis differ for capital costs and operating costs. They both represent opportunity cost to State government. But, the federal tax-exemption of interest on state debt offers the State a lower, subsidized opportunity cost for capital projects funded with State debt. The State of Alaska Constitution permits issuance of State and municipal debt only for capital improvement projects.

Benefit/Cost Analysis

For purposes of benefit-cost analysis, this study uses a discount rate of seven percent per annum to calculate net present values and B/C ratios. OMB Circular No. A-94[7] establishes this rate as a guideline for evaluating Federal programs whose benefits and costs are distributed over time.

The seven percent rate applies to benefit-cost analyses of public investments that are done in constant dollars. In other words, the rate is a real rate of return that bears no premium for inflation. It is to be used in analyses that do not increase future costs and benefits for general inflation.[8] This analysis is done with constant dollars.

The seven percent rate approximates the marginal pre-tax rate of return on an average investment in the private sector. It represents the opportunity costs in real dollars of spending money on a project.

The seven percent rate includes a risk premium. If all the costs and benefits of Juneau Access alternatives were known with certainty, a real risk-free rate of return would be an appropriate discount rate. Currently, this would be around 2.25 percent as reflected by yields on inflation-indexed long-term U.S. Treasury bonds.

But, the Juneau Access project entails great uncertainties. The magnitude of the cost and traffic changes, the concentration of demand in personal travel, especially of a recreational and tourist nature, the predominance of induced traffic, particularly for the road alternatives, and the more general uncertainties about population, employment, average wages, and economic growth in the region and nationally all argue for a significant risk premium in the discount rate.

[7] "OMB Circular No. A-94 Revised", U.S. Office of Management and Budget, October 29, 1992.
[8] But, the rate would still be used for analyses that include inflation in excess of or shy of the general rate of inflation for specific factors. In other words, the rate is applicable to analyses that contain inflation in real dollars.

Life-Cycle Costs

For life-cycle costs, this study uses discount rates of 2.65 percent and 5.00 percent respectively for capital costs and operating costs.

The 2.65 percent rate for capital costs represents the State of Alaska's real borrowing cost for capital improvement projects. It is an estimate of the expected interest rate on State general obligation (GO) bonds, net of inflation.

2.65 percent is based on the average Bond Buyer Index of state and local GO bonds with 20-year maturities during the most recent decade. The State of Alaska has typically issued GO bonds with average maturities shorter than 20 years. This has reflected a policy of scheduling maturities within the productive life of its known oil fields. Its most recent issue had an average life of 9.09 years. Adjustments for the shorter average Alaska maturities and for inflation produce the estimated real cost of capital as shown in Table VII.

TABLE VII

State Government
Real Cost of Capital

Bond Buyer Index of State & Local General Obligation Bonds
20-Year Maturities, Mixed Quality

Year	Yield
1994	6.18
1995	5.95
1996	5.76
1997	5.52
1998	5.09
1999	5.43
2000	5.71
2001	5.15
2002	5.04
2003	4.75
Average	5.46
Less:	
Yield spread, 10-year vs. 20-year maturity	(0.85)
Annual average inflation, Anchorage CPI 1993-2003	(1.96)
State Government Real Cost of Capital	2.65

The 5.0 percent discount rate for operating costs represents the opportunity cost to the State of spending its own money, as opposed to borrowed funds. 5.0 percent is the projected total real return on Alaska Permanent Fund investments over the long-term.[9] If State funds were not spent on State programs, at a minimum they could earn 5.0 percent (net of inflation). Presumably, if they were spent on programs other than Juneau Access, rather than invested, they would be worth at least 5.0 percent to the State, if not more.

Excess Burden

OMB Circular No. A-94 also calls for public investments that have social benefits apart from decreased Federal costs to bear an excess burden for their justification. Taxes generally distort relative prices, thereby causing inefficient allocation of resources and less than optimal economic production.

According to the Circular, "Recent studies of the U.S. tax system suggest a range of values for the marginal excess burden, of which a reasonable estimate is 25 cents per dollar of revenue".

Thus, the Circular advises, "public investments that are not justified on cost-saving grounds should include a supplementary analysis with a 25 percent excess burden. Thus, in such analyses, costs in the form of public expenditures should be multiplied by a factor of 1.25 and the net present value recomputed."

To the extent the choice of a Juneau Access alternative is dictated by life-cycle cost, this excess burden would not be relevant. But, if user benefits enter into the choice, a supplementary analysis of excess burden is appropriate.

[9] "Alaska Permanent Fund, Updated Financial Projections 2004-2014", Alaska Permanent Fund Corporation, February 29, 2004.

User Benefits

The user benefits of each alternative are measured by the reduction in user costs, compared to the user costs for the No Action alternative. The costs included in user costs are the same ones contained in the SDEIS *Juneau Access Traffic Forecast.* They are travel time; AMHS fares; vehicle operating, maintenance, and ownership costs; and accident costs.

This benefit/cost analysis computes user benefits in a step-wise fashion, starting with the highest cost "build" alternative. User benefits for the highest cost "build" alternative are computed by comparison to the No Action alternative. In succession, each alternative is compared to the next lowest cost alternative to compute the incremental user benefits for that next lowest cost alternative. The total user benefits for an alternative are the sum of:

1. the incremental benefits for that alternative; plus,

2. the cumulative amount of incremental benefits for all higher cost alternatives.

The incremental user benefits for each alternative, in comparison to the next highest cost alternative, are computed according to the AASHTO methodology[10]. The AASHTO calculation of user benefits for a highway improvement project is:

$$(U_0 - U_1) \times (V_1 + V_0)/2$$

where,

U_0 is the user cost per person, vehicle, or trip without the improvement;

U_1 is the user cost per person, vehicle, or trip with the improvement;

V_0 is the traffic volume in persons, vehicles, or trips without the improvement; and,

V_1 is the traffic volume in persons, vehicles, or trips with the improvement.

The AASHTO formula computes user benefits as the cost savings per user, due to an improvement, times the average number of users, with and without, the improvement.

The AASHTO formula was designed primarily for evaluating highway projects that make marginal changes to existing highways or highway networks. Such projects

[10] *User Benefit Analysis for Highways,* American Association of State Highway and Transportation Officials (AASHTO), August 2003.

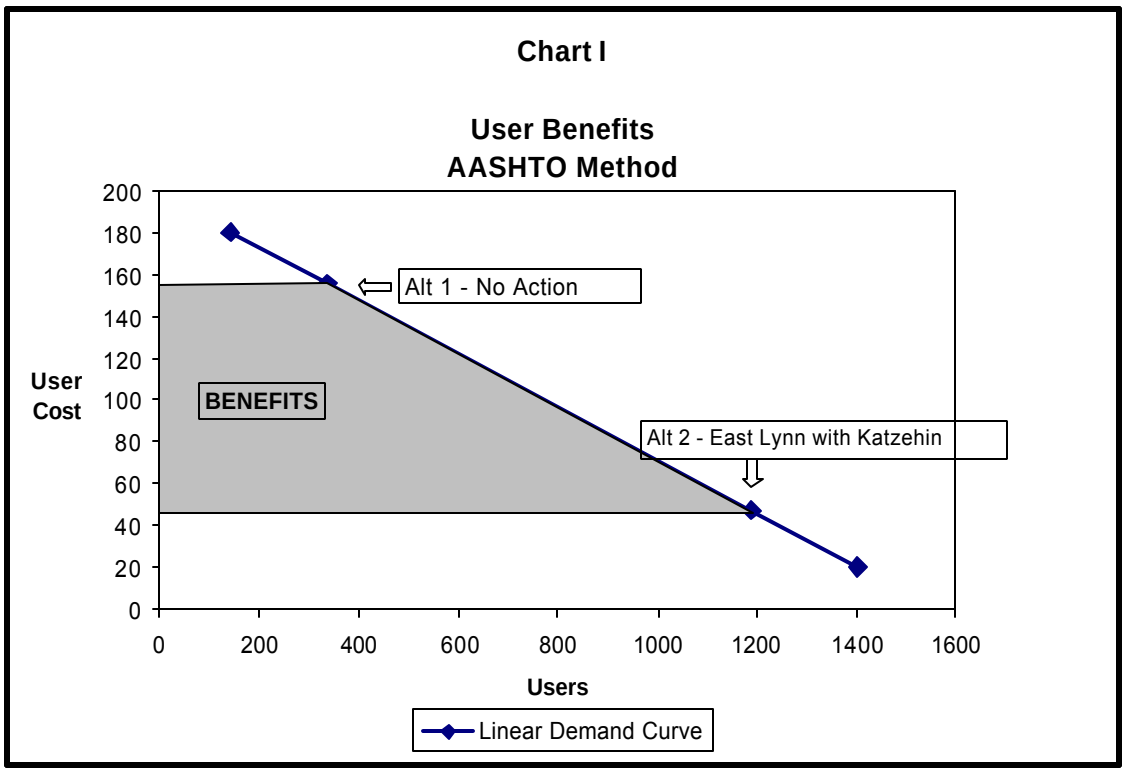
include additional lanes, traffic signalization, ramp metering, geometric improvements, access control, etc. Most of these improvements cause only small changes in costs and traffic.

Juneau Access alternatives on the other hand, would drop user costs as much as 70 percent and induce additional use up to 2.5 times levels expected under the No Action alternative. Total users in 2008 in the case of Alternative 2 would be 3.5 times those of the No Action alternative.

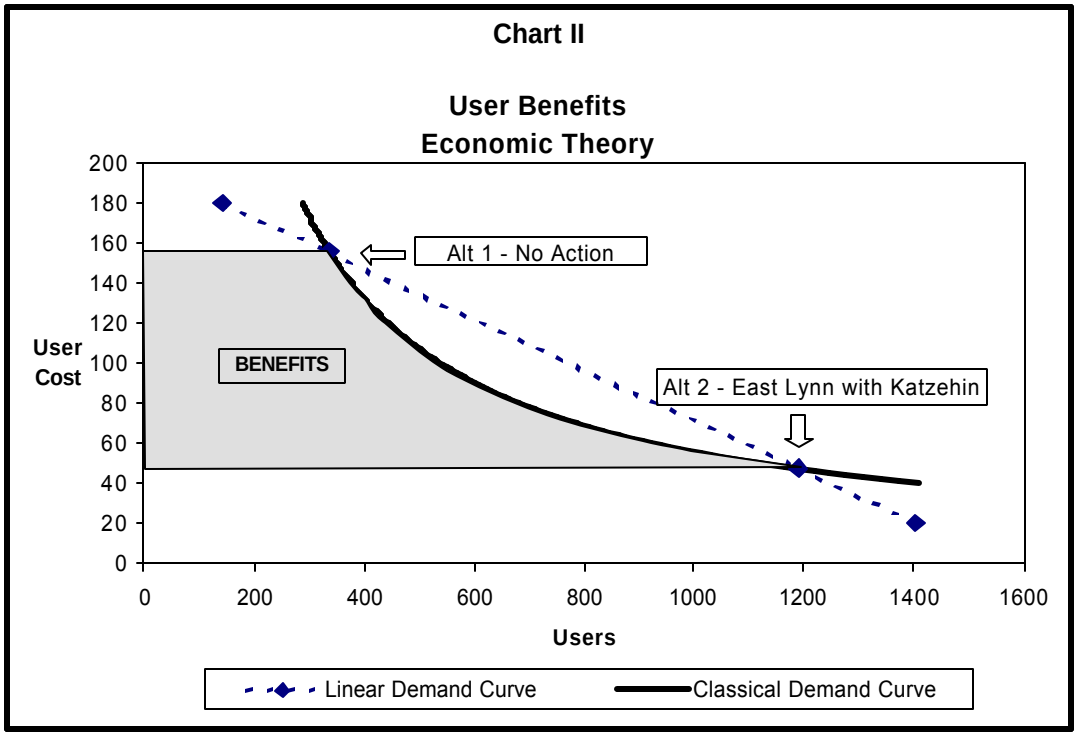
For changes of the magnitude of Juneau Access, the AASHTO formula overestimates user benefits. The greater the savings in user costs and the greater the induced traffic, the more severe the overestimation is. The step-wise calculation procedure used in this analysis minimizes the overestimation of user benefits.

For example, under the AASHTO formula, user benefits for Alternative 2 for the year 2008 are 27 percent greater than computed according to economic theory. But, using the step-wise calculation, they are overestimated by only 2 percent.

The AASHTO formula assumes that demand is a linear function of user cost. Graphically, it would look like Chart I, below.



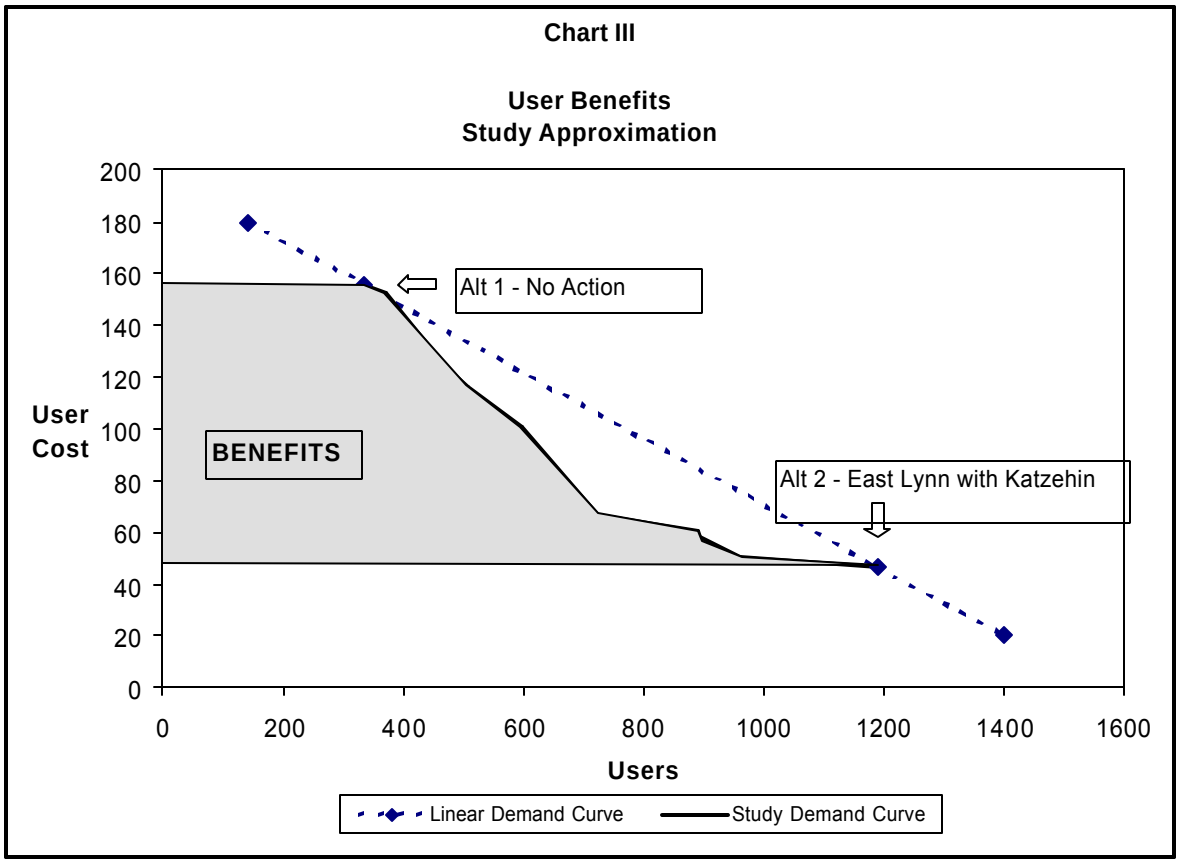
Generally, demand is more closely related to the percentage change in user cost. This gives rise to a classically-shaped demand curve, such as Chart II, below:



This study has kept the same 2004 traffic estimates that are contained in the SDEIS *Juneau Access Traffic Forecast*, even though we have revised estimated user costs. *Traffic Forecast* estimated traffic for all alternatives except Alternative 2 – East Lynn Highway with Katzehin Terminal, on the basis of their user cost relative to 2002 user costs under the current system. The revisions in user costs, discussed in the following section, would produce different traffic estimates than those in *Traffic Forecast* for all alternatives except Alternative 2.

2004 traffic forecasts could be revised to reflect the revised user costs in this report. We have not done so in order to maintain consistency with *Traffic Forecast*'s beginning traffic estimates and to avoid the costs of redoing the traffic forecast, as well as this benefit-cost analysis.

The *Traffic Forecast*'s traffic estimates, paired with the revised user costs, still provide a close approximation to a classical demand curve, as Chart III below shows.



Charts I-III use actual estimates contained in this report. The charts accurately portray in graphical form the different approaches to estimation of user benefits for an average day in 2008.

User Costs

User costs in this report differ somewhat from those in the SDEIS *Juneau Access Traffic Forecast*. They consist of the same elements, computed in the same way, but they have been updated, corrected, or refined to provide a more precise calculation of benefits. User costs by alternative and route segment are contained in the following Appendix tables:

- Table A-I: Auke Bay-Haines and Auke Bay-Skagway blended costs;
- Table A-II: Auke Bay-Haines;
- Table A-III: Auke Bay-Skagway;
- Table A-IV: Haines-Skagway; and,

- Table A-V: mode detail for marine legs, by alternative.

Table A-VI summarizes user costs for all road legs. See Appendix Tables A-I through A-IV for the alternatives to which they apply.

User costs are calculated as follows:

Travel Time

Travel time is the sum of transit time, plus, in the case of marine legs, ferry unload time and frequency delay. The value of time in this report differs from that used in the SDEIS *Juneau Access Traffic Forecast*. Time is valued at an average of $8.02 per hour. The average value for time used in the *Traffic Forecast* is $10.47.

The estimation of the average time value is shown in Table VIII below. It is based on the following assumptions:

1. Alaska and Yukon residents comprise 51.9 percent of traffic on all alternatives. This is their percentage of AMHS Lynn Canal traffic in 2002, as presented in Table 6 of the *Traffic Forecast*. Non-residents comprised 48.1 percent.

2. 2002 mean hourly wages for Alaska and the U.S. are used as the time value respectively for Alaska/Yukon residents and non-residents. These hourly wages of $19.37 and $17.10 respectively are from the U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics (OES). They correspond to mean annual wages of $40,280 and $35,560 respectively.

3. 2002 wages are adjusted to 2004 dollars using the Anchorage and U.S. CPI respectively. On an hourly basis, they are $20.29 and $17.92 respectively. On an annual basis, they would be $42,193 and $37,265.

4. The 2003 U.S. average employer cost for total benefits as a percentage of wages and salaries for all civilian workers, 39.7 percent, is used to estimate average total compensation of Alaska residents of $28.33 an hour. The ratio is from the U.S. Department of Labor, Bureau of Labor Statistics data series, "Employer Cost for Employee Compensation".

5. The after-tax cost of average wages and average total compensation is estimated by deducting 25 percent. This produces after-tax wage costs for Alaska residents and non-residents of $15.21 and $13.44 per hour, respectively.

   We use a 25 percent tax cost for non-work travel because the 2004-dollar mean annual wages—$42,193 and $37,265 for Alaska and the U.S., respectively—generally fall within the 25 percent tax brackets. The 2003 U.S. individual income tax 25 percent brackets are:

Single	$28,400 - $68,800
Married filing jointly	$56,800 - $114,650

Married filing separately	$28,400 - $57,325
Head of household:	$38,050 - $98,250

In the case of marrieds filing jointly with the higher bracket amounts, 25 percent may still be a reasonable estimate, given the prevalence of two-income families. No attempt is made to estimate an average state income tax marginal rate for non-resident wages.

After-tax costs to employers for work-related travel would have to reflect an amalgam of individual (proprietorship, partnership, etc.) and corporate tax schedules, as well as the considerable tax-exempt non-profit and government employment in Lynn Canal. 2003 individual and corporate tax rates range up to 35 per cent and 38 percent respectively. We have not attempted to directly estimate the marginal rate for work–related travel. We use a 25 percent tax cost as a reasonable approximation to compute a $21.25 an hour after-tax cost to employers of total Alaska compensation.

6. We assume all work-related travelers are Alaska residents. The SDEIS *Juneau Access Traffic Forecast* estimates work-related travel to be 15 percent of all Lynn Canal traffic. This means that 28.9 percent of Alaska residents would be traveling for work (15 percent/51.9 percent Alaska residents). The remainder of Alaska residents, 71.1 percent, would be traveling for non-work purposes.

7. We assume the value of time for adults traveling for non-work purposes is 50 percent of the after-tax wage cost. This is generally consistent with the recommendations contained in AASHTO 's *User Benefit Analysis for Highways*.[11] The recommendations are based on revealed preference studies by transportation economists. The 50 percent discount produces estimated after-tax time values of $7.61 and $6.72 for Alaska residents' and non-residents, respectively.

8. We assume that there is no opportunity cost for children's time and that children make up 20 percent of non-work travelers. The 20 percent estimate is based on the fact that 10.62 percent of 2002 AMHS passenger tickets were for children 12 and under. These assumptions produce estimated average time values of $6.09 and $5.38 for Alaska residents and non-residents' respective non-work travel.

The weighted average time value of all Alaska travelers would be $10.47. This is the product of 71.1% non-work travel @ $6.09 per hour and 28.9% work-related travel @ $21.25 per hour.

The weighted average time value of all travelers would be $8.02. This is the product of 51.9% Alaska residents @ $10.47 per hour and 48.1% nonresidents @ $5.38 per hour.

[11] See Table 5-1: Guidelines for Assigning Values of Time in Highway Project Analysis contained in *User Benefit Analysis for Highways*, American Association of State Highway and Transportation Officials, August 2003.

TABLE VIII

Average Time Value

	Alaska Residents		Nonresidents		
	$	Persons	$	Persons	All Travelers
All Travelers		51.9%		48.1%	100.0%
Average Hourly Wage					
2002	19.37		17.10		
2004 dollars	20.29		17.92		
Benefits/Wages					
2003 U.S. Average	39.7%				
Average Total Compensation, 2004	28.33				
Marginal Tax Rate	25.0%		25.0%		
After-Tax Opportunity Cost					
Work-Related Travel (based on Total Compensation)	21.25	28.9%		0.0%	
Non-Work Travel (based on Hourly Wage)	15.21	71.1%	13.44	100.0%	
Non-Work Travel @ 50% of Value	7.61		6.72		
Adults	7.61	80.0%	6.72	80.0%	
Children	0.00	20.0%	0.00	20.0%	
All Non-Work Travelers	6.09		5.38		
Average Work & Non-Work Travel	10.47		5.38		8.02

AMHS Fares

Fares on displacement vessels are the 2002 summer fares of $26 per passenger and $61 per 19-foot vehicle for Auke Bay-Haines one-way travel and $35 per passenger and $83 per 19-foot vehicle for Auke Bay-Skagway travel. Fares between Sawmill Cove and Haines and Skagway are the 2002 Auke Bay fares pro-rated on the basis of nautical miles from Sawmill Cove compared to nautical miles from Auke Bay.[12] All other fares are computed on the basis of flat fees of $2.00 per passenger and $6.00 per vehicle plus $0.30 per mile for passengers and $0.60 per mile for vehicles.

Fast ferry fares are the displacement vessel fares, plus 10 percent. This fast ferry premium was not contained in the SDEIS *Juneau Access Traffic Forecast.* Fares in this report also differ from the *Traffic Forecast* due to a more detailed modeling of average route distances.

[12] The Skagway fare is pro-rated on the basis of 53.16 nautical miles from Sawmill Cove compared to 81.79 miles from Auke Bay on the route that includes a stopover in Haines. The direct route between Auke Bay and Skagway is 76.98 miles.

Vehicle Costs

Vehicle operating, maintenance, and ownereship costs are calculated at 43.7 cents per statute mile, the same as in the SDEIS *Juneau Access Traffic Forecast.*

Accident Costs

Accident costs are calculated at 11.6 cents per statute mile, the same as in the SDEIS *Juneau Access Traffic Forecast.*

Unit User Cost

This is the total one-way trip cost per user, computed as in the SDEIS *Juneau Access Traffic Forecast*. For each alternative, it is:

$$UC_i = (((T_i \times V) + PF_i) \times PPV_i) + VF_i + (VC + AC) \times M_i)/PPV_i$$

Where,

UC_i = average total user cost for the ith alternative;
T_i = average total time for the ith alternative;
V = average time value—$8.02 per hour in the Base Case;
PF_i = total AMHS passenger fares per person for the ith alternative;
PPV_i = average number of persons per vehicle for the ith alternative;
VF_i = total AMHS vehicle fares for the ith alternative;
VC = vehicle operating, maintenance, and ownership cost per mile—43.7 cents per mile;
AC = accident cost per mile—11.6 cents per mile; and,
M_i = total statute road miles for the ith alternative.

Other Revisions to SDEIS Juneau Access Traffic Forecast *User Costs*

In addition to re-estimating time value and AMHS fares, we made the following changes to the *Juneau Access Traffic Forecast* user costs:

1. The blended user costs for the Auke Bay-Haines and Auke Bay-Skagway origin-destination traffic were weighted according to the distribution of Haines and Skagway traffic estimated in Table 17 of the SDEIS *Juneau Access Traffic Forecast.* The distributions shown in Table 17 varied among the alternatives. But, the user costs estimated in *Traffic Forecast* assumed a uniform 50 percent Haines and 50 percent Skagway traffic among all alternatives. This report's blended user costs and the percentages of Auke Bay traffic having their origin or destination in Haines or Skagway are shown in Appendix Table A-I.[13]

[13] Table 17 *Traffic Forecast* percentage distributions for Alternatives 2C and 3 differ from those in Table A-I because Table 17 includes through traffic (to Haines for 2C and Skagway for 3), while Table A-I includes only origin and destination traffic. Table A-I weights are based on origin-destination traffic because that is how the user costs for Haines and Skagway in Tables A-II and A-III are constructed.

2. User costs for the 4.3-mile segment between downtown Haines and the Lutak Inlet AMHS terminal were calculated and included in all appropriate alternatives as shown in Appendix Tables A-II through A-IV.

3. Based on the recommendation of the Alaska Department of Transportation & Public Facilities (DOT&PF), we assume highway traffic averages 45 miles per hour, compared to 40 miles per hour in *Traffic Forecast*.

4. Travelers' time required to load ferries is assumed to be included in frequency delay. Travelers' total time equals time en route plus, for ferry travel, unload time and frequency delay.

5. Distinct user costs for the following ferry modes of travel were calculated:

    a. mainline vessels traveling between Auke Bay and Skagway were recognized to have a longer route and a stopover, compared to dayboat or fast ferry vessels; we estimate stopover in Haines, including unload and load time, at 41 minutes;

    b. mainline vessels were recognized to operate year-round from Auke Bay in the 4B and 4D Berners Bay alternatives;

    c. winter operations in Alternative 4B and 4D were recognized to be from Auke Bay, rather than Berners Bay;

    d. a different frequency delay was recognized for the Katzehin-Haines shuttle after 2015 for Alternative 2 as a result of a service schedule with one fewer round trips after the *M/V Aurora* is retired;

    e. on the Haines-Skagway routes, recognition was given to:

        i. the absence of a direct shuttle between the two communities in winter in Alternative 2B, necessitating two shuttle legs with a stop at Katzehin; and,

        ii. the slightly more frequent service for the No Action alternative, which would have 3 mainline round-trips per week between the cities, compared to marine alternatives 4A-D, which would have only 2 mainline round-trips per week.

    These user costs were blended with the other ferry modes for a route segment, weighted by service frequency and by summer vs. winter traffic, to produce average user costs for the travel leg. Appendix Table A-V shows the detail of user costs by travel mode for marine legs.

6. User costs (and benefits) for origin-destination traffic between Haines and Skagway are included in this report. They are not blended with the Auke Bay traffic. *Traffic Forecast* did not include user costs for Haines-Skagway local traffic.

7. Statute and nautical route mileage, ferry unload and transit time, and frequency delay have been corrected, refined, and updated.

Table IX compares SDEIS *Juneau Access Traffic Forecast*'s user costs with those of this report.

TABLE IX

User Costs
compared to SDEIS *Juneau Access Traffic Forecast*

Alternative	Traffic Forecast	Benefit Cost Analysis	Ratio
Auke Bay-Haines and Auke Bay-Skagway			
1 - No Action	194.31	155.55	80%
2 - East Lynn with Katzehin	60.15	46.79	78%
2A - East Lynn with Berners Shuttle	78.49	58.20	74%
2B - East Lynn to Katzehin	78.81	60.83	77%
2C - East Lynn without Katzehin	73.84	50.10	68%
3 - West Lynn Highway	95.67	67.16	70%
4A - FVF Auke Bay	132.72	116.20	88%
4B - FVF Berners Bay	114.27	100.38	88%
4C - Dayboat Auke Bay	179.03	152.37	85%
4D - Dayboat Berners Bay	141.59	124.05	88%
Haines-Skagway			
1 - No Action	NA	42.74	
2 - East Lynn with Katzehin (2008-2015)	NA	30.65	
2A - East Lynn with Berners Shuttle	NA	31.28	
2B - East Lynn to Katzehin	NA	37.65	
2C - East Lynn without Katzehin	NA	34.01	
3 - West Lynn Highway	NA	34.01	
4A - FVF Auke Bay	NA	43.80	
4B - FVF Berners Bay	NA	43.80	
4C - Dayboat Auke Bay	NA	43.80	
4D - Dayboat Berners Bay	NA	43.80	

User Benefit Calculations

User benefit calculations were performed separately for Auke Bay traffic and Haines-Skagway local traffic. The two estimated amounts of user benefits were summed to produce total user benefits for a given alternative. User benefits for both Auke Bay traffic and Haines-Skagway traffic were calculated according to the same methodology described below.

Appendix Tables A-VII through A-XV show the calculation of each "build" alternative's user benefits for Auke Bay traffic. Appendix Tables A-XVI through A-XXIV show the calculations for Haines-Skagway local traffic.

User benefits for each "build" alternative are calculated as follows. The specific calculation steps, for each year from 2004 through 2038 as shown in the tables, are:

- The columns with the heading "Blended Unit User Costs", or for Haines-Skagway local traffic "Unit User Costs", calculate the reduction in cost per user, compared to the next highest cost alternative. The user costs for each alternative are those contained in Table IX for this benefit-cost analysis.

- The 2004 figure under columns headed "AADT" is the unrounded base traffic estimated for the SDEIS *Juneau Access Traffic Forecast*[14]. AADT is average annual daily traffic. In this case, it is a count of the number of vehicles per day going in either direction between origin and destination city pairs.

  Auke Bay traffic for other years is calculated using the following annual rates of growth, taken from Table 15 of *Juneau Access Traffic Forecast*:

  - 2004–2007: 0.5 percent; and,

  - 2008–2038: see Table X.

[14] The SDEIS *Juneau Access Traffic Forecast* published report contains only rounded figures for 2004 AADT. They are shown in Table 11 of *Traffic Forecast*.

TABLE X

Annual Growth in Auke Bay AADT
2008-2038

Alternative	Annual Growth
1 - No Action	1.10%
2 - East Lynn with Katzehin	2.00
2A - East Lynn with Berners Shuttle	1.90
2B - East Lynn to Katzehin	1.90
2C - East Lynn without Katzehin	1.90
3 - West Lynn Highway	1.80
4A - FVF Auke Bay	1.50
4B - FVF Berners Bay	1.60
4C - Dayboat Auke Bay	1.20
4D - Dayboat Berners Bay	1.40%

The Auke Bay traffic projections for 2008 and 2038 in this report do not precisely match those of *Traffic Forecast*. *Traffic Forecast* slightly understates projected traffic. In this report, all costs and benefits are assumed to occur mid-year. To escalate AADT from mid-2004 to mid-2008, we escalate the 2004 figure three years at the 0.5 percent rate, yielding mid-2007 traffic, and one year at the 2008-38 rate to get mid-2008 AADT. By contrast, *Traffic Forecast* escalated the 2004 figure five years at the 0.5 percent rate to get 2008 AADT. In essence, *Traffic Forecast*'s 2004 figure represents traffic at the beginning of calendar 2004 and the 2008 figure represents traffic at the end of 2008.

AADT figures for local traffic between Haines and Skagway are estimates used in the *Marine Segments Analysis*.[15]

This report's traffic projections for 2008 and 2038 are shown in Table XI below.

[15] *Juneau Access Improvements–Marine Segments Analysis*, Coastwise Corporation.

TABLE XI

Traffic and Users
by Origin and Destination Pair

Alternative	AADT 2008	AADT 2038	Annual Average Daily Users 2008	Annual Average Daily Users 2038
Auke Bay-Haines and Auke Bay-Skagway				
1 - No Action	93	130	336	467
2 - East Lynn with Katzehin	518	938	1,191	2,157
2A - East Lynn with Berners Shuttle	389	684	895	1,573
2B - East Lynn to Katzehin	387	680	890	1,565
2C - East Lynn without Katzehin	418	735	961	1,690
3 - West Lynn Highway	315	538	725	1,238
4A - FVF Auke Bay	141	221	508	794
4B - FVF Berners Bay	166	267	598	962
4C - Dayboat Auke Bay	103	147	370	529
4D - Dayboat Berners Bay	131	198	471	714
Haines-Skagway				
1 - No Action	38	55	87	127
2 - East Lynn with Katzehin	50	78	115	180
2A - East Lynn with Berners Shuttle	50	78	115	180
2B - East Lynn to Katzehin	50	78	115	180
2C - East Lynn without Katzehin	50	78	115	180
3 - West Lynn Highway	50	78	115	180
4A - FVF Auke Bay	38	55	87	127
4B - FVF Berners Bay	38	55	87	127
4C - Dayboat Auke Bay	38	55	87	127
4D - Dayboat Berners Bay	38	55	87	127

- the "Annual Average Daily Users" column is computed by:
    - converting AADT to users, using the SDEIS *Juneau Access Traffic Forecast* assumptions for Auke Bay traffic of 3.6 users per vehicle for marine alternatives and 2.3 users per vehicle for highway alternatives. Haines-Skagway local traffic is assumed to be AMHS' 2002 average of 2.3 users per vehicle;
    - taking the average of the two alternatives' user figures.

- under "Total Annual User Benefits", each pair of columns shows:
    - the user benefits for the year in question ("Year of Travel"); and,
    - the present value as of January 1, 2004 of the benefits for the year in question;
- the three pairs of "Year of Travel" and "Present Value" columns[16] represent, from left to right, the user benefits of:
    1. the alternative under evaluation, in comparison to the next highest cost alternative;
    2. the next highest cost alternative, in comparison to the No Action alternative; and
    3. the alternative under evaluation, in comparison to the No Action alternative;
- for pair number 1, the alternative under evaluation compared to the next highest cost alternative:
    - user benefits under "Year of Travel" is computed as the "Cost Reduction" multiplied by the "Annual Average Daily Users";
    - user benefits under "Present Value 1/1/04" is computed so that the figure in that column, compounded from January 1, 2004 to the year of travel at a rate of return equal to the discount rate, produces the "Year of Travel" user benefits;
- the figures for pair number 2, the next highest cost alternative compared to the No Action alternative, are the pair number 3 figures shown in the table for evaluation of the next highest cost alternative;
- the figures for pair number 3, the alternative under evaluation compared to the No Action alternative, are the sum of the figures for pairs 1 and 2;

"Total Annual User Benefits" for 2004–2038 is simply the sum of user benefits for all the years.

[16] For the highest cost "build" alternative, Alternative 4C - Dayboat Auke Bay, there are no column pairs 2 and 3, because there are no higher cost "build" alternatives. Instead, column pair 1 suffices to compare the highest cost "build" alternative directly against the No Action alternative.

Project Costs

Project costs consist of capital and operating costs. Government revenues from operation of the project are an offset to project costs. They reduce the funds government must otherwise provide to pay for operation of the project.

Users of the transportation project pay the government revenues. They are part of the costs to users that figure in the calculation of user benefits. If revenues were not deducted from project costs, the portion of project costs charged to users would be double counted.

Capital Costs

Capital costs are made up of:

- Acquisition costs of new facilities or vessels;
- Refurbishment and replacement costs for existing facilities or vessels; and,
- Residual values at the end of the analysis period or when vessels are removed from service in Lynn Canal.

Acquisition Costs

Table XII below sets out the acquisition costs for new facilities or vessels.

TABLE XII

Acquisition Costs
($000)

Alternative	Road Construction	AMHS New Vessel Acquisition	AMHS Terminal Construction	AMHS Total	Road & AMHS
1 - No Action		0		0	0
2 - East Lynn with Katzehin	265,011	40,287	15,700	55,987	320,998
2A - East Lynn with Berners Shuttle	205,011	77,559	43,400	120,959	325,970
2B - East Lynn to Katzehin	182,000	76,067	15,700	91,767	273,767
2C - East Lynn without Katzehin	265,011	33,800	0	33,800	298,811
3 - West Lynn Highway	179,740	85,516	31,000	116,516	296,256
4A - FVF Auke Bay		111,200	13,000	124,200	124,200
4B - FVF Berners Bay	4,500	102,496	29,700	132,196	136,696
4C - Dayboat Auke Bay		89,209	13,000	102,209	102,209
4D - Dayboat Berners Bay	4,500	63,270	29,700	92,970	97,470

Road and terminal construction costs were provided by DOT&PF. New vessel acquisition costs are from the *Marine Segments Analysis*.[17] Acquisition costs are generally assumed to occur during the four-year period 2004-07. Each "build" alternative is scheduled to commence operation January 1, 2008.

Appendix Tables A-XXV through A-XXXIV break out road and terminal acquisition costs into:

- Earthwork;
- Structures;
- Other costs; and,
- Right of way.

Road right of way costs are assumed to occur during the first year—2004. All other road and terminal acquisition costs are assumed to occur in equal amounts over the four years prior to 2008.

Replacement costs for "Other" road and terminal improvements are required during the life of the project and are included in Tables A-XXV through A-XXXIV. They are not included in Table XII.

Most vessels are assumed to be constructed during the two years prior to 2008. Those vessels that will replace the *M/V Aurora*, when she is removed from Lynn Canal service, will be constructed two years prior to their initiation of service. Construction expenditures will occur in equal amounts each year of construction for all vessels.

M/V Aurora replacement vessels are included in Tables XII and A-XXVI through A-XXX under "New Vessel Acquisition". *M/V Aurora*'s replacements provide greater capacity and the *M/V Aurora* is expected to be reassigned to other AMHS service. Replacement of mainline vessels and *FVF Fairweather* are not included in Table XII under "New Vessel Acquisition". Greater capacity is not planned for the replacements for these vessels and the replaced vessels will be retired from service.

Refurbishment and Replacement Costs

Appendix Tables A-XXV through A-XXXIV also show refurbishment and replacement costs by year for each Juneau Access alternative.

We assume that refurbishment costs maintain the value of a vessel according to a straight-line depreciation schedule. We assume that refurbishment does not wholly or partially restore a vessel's value to its original acquisition cost or extend its economic life.

[17] *Juneau Access Improvements–Marine Segments Analysis*, Coastwise Corporation, preliminary working draft of March 10, 2004 and supplemental *M/V Aurora* analyses.

New Vessel Refurbishment

Refurbishment costs for new AMHS vessels are based on schedules contained in Appendix N of *Marine Segments Analysis*[18]. These schedules relate expenditures for refurbishment to a vessel's economic life and acquisition cost, as shown in Table XIII below.

TABLE XIII

Refurbishment Costs
New AMHS Vessels

	Displacement Vessel (Steel)		Fast Vessel (Aluminum)	
Year of Operation as % of Economic Life	Year of Operation	Refurbishment Cost as % of Acquisition Cost	Year of Operation	Refurbishment Cost as % of Acquisition Cost
5%	3	10%	2	10%
25%	16		8	15%
33%	21	30%	11	25%
50%	32	40%	16	30%
67%	43	40%	21	30%
75%	48		24	15%
100%	64		32	

Existing Vessel Refurbishment

During the period 2004–2010, annual refurbishment costs for existing AMHS vessels, other than the *M/V Aurora*, are based on Table 8 of "Marine Segments Analysis, Mainline Vessel and FVF costs for Alternative 1 and Alternatives 4A – 4D". This document was prepared by DOT&PF and is contained in Appendix B of this report. The amounts have been adjusted to 2004 dollars. The costs in Table 8 for the *M/V Columbia*, *M/V Kennicott*, and *M/V Matanuska* are from the *1998 Alaska Marine Highway Vessel Refurbishment and Fleet Replacement Study* prepared by Glosten and Associates, Inc. *FVF Fairweather* costs are from the *2000 FVF Design Study Report.* We assume the costs in these reports are in 1998 and 2000 dollars, respectively.

For these vessels, DOT&PF pro-rated annual average refurbishment costs, based on the percent of time vessels would operate in Lynn Canal, to produce the costs shown in Table XIV below. The actual vessels that would serve Lynn Canal may vary from the ones shown in Table XIV.

[18] *Juneau Access Improvements–Marine Segments Analysis*, Appendices, Coastwise Corporation, preliminary working draft of March 10, 2004.

TABLE XIV

2004-2010 Annual Refurbishment Costs
Existing AMHS Vessels
($000)

	Alternative 1 - No Action		Marine Alternatives 4A - 4D	
Vessel	% of Time in Lynn Canal	Refurbishment Costs	% of Time in Lynn Canal	Refurbishment Costs
Columbia	11.5%	573.0	11.5%	573.0
Kennicott	15.8%	395.4	15.8%	395.4
Matanuska	12.3%	664.1		
Fairweather	58.9%	884.9		
Total		2,517.4		968.4

During the period 2011–2038, annual refurbishment costs for existing AMHS vessels, other than the *M/V Aurora*, are based on Table 27 of "Alaska Marine Highway System Lynn Canal Corridor"[19]. This document was prepared by DOT&PF and is contained in Appendix C of this report.

The costs in Table 27 for the *M/V Columbia*, *M/V Kennicott*, and *M/V Malaspina* are from the *1998 Alaska Marine Highway System Vessel Refurbishment and Fleet Replacement Study* prepared by Glosten and Associates, Inc. *FVF Fairweather* costs are from the *2000 FVF Design Study Report*. We assume the costs in these reports are in 1998 and 2000 dollars, respectively.

Table XV shows 2011–2038 annual refurbishment costs, adjusted to 2004 dollars. We pro-rate the 2011–2038 costs in Table X using the same percentages of time shown for 2004–2010 in Table XIV above. We assume the *M/V Matanuska* takes the place of the *M/V Malaspina* and has the same refurbishment costs as shown in Table 27 for the *M/V Malaspina*.

[19] "Alaska Marine Highway System Lynn Canal Corridor Revenues and Expenditures 2001 - 2002 & Projected Capital Costs 2001 – 2038", Alaska Department of Transportation & Public Facilities, 3/3/04.

TABLE XV

2011-2038 Annual Refurbishment Costs
Existing AMHS Vessels
($000)

	Alternative 1 - No Action		Marine Alternatives 4A - 4D	
Vessel	% of Time in Lynn Canal	Refurbishment Costs	% of Time in Lynn Canal	Refurbishment Costs
Columbia	11.5%	540.2	11.5%	540.2
Kennicott	15.8%	608.4	15.8%	608.4
Matanuska	12.3%	332.3		
Fairweather	58.9%	853.3		
Total		2,334.1		1,148.5

M/V Aurora refurbishment costs are from "*M/V Aurora* Capital Improvement Projects", dated April 2004. This document was prepared by DOT&PF and is contained in Appendix D of this report.

For the *M/V Aurora*, DOT&PF estimated refurbishment costs by year, as follows.

TABLE XVI

M/V Aurora Refurbishment Costs
($000)

Year		Cost
2006	Functional Upgrades	6,000.0
2010	Mechanical Upgrades	8,425.0
2027	Hotel Upgrades	6,250.0
2027	Safety Upgrades	3,750.0
Total		24,425.0

In all alternatives, the *M/V Aurora* would operate 100 percent of the time in Lynn Canal until she is removed from Lynn Canal service. For each alternative, the refurbishment costs scheduled to occur before her removal are included as project costs.

Existing Vessel Replacement Costs

AMHS' "Fleet Addition & Retirement *DRAFT* Plan"[20] indicates the *M/V Malaspina* will be replaced in 2010 and the *M/V Columbia* in 2017. The "AMHS Lynn Canal Corridor" document states "the current AMHS estimate is 30 years" for the life of the *FVF Fairweather* (p. 15). This means the *FVF Fairweather*'s replacement would occur in 2034. Assuming a 64-year life, the *M/V Kennicott*, which began service in 1998, would not be replaced during the analysis period.

"Marine Segments Analysis, Mainline Vessel and FVF costs for Alternative 1 and Alternatives 4A – 4D" estimates replacement of the *M/V Malaspina* and *FVF Fairweather* will cost $120 million and $38 million, respectively. We estimate the replacement cost of the *M/V Columbia* to be $133.7 million. This is based on a shipyard construction cost estimate of $82.6 million in 1999 dollars from the *1998 AMHS Vessel Refurbishment and Fleet Replacement Study*, increased 20 percent for preliminary engineering, State overhead, and contingencies, and escalated to 2004 dollars by the percentage change in the U.S. Producer Price Index for ship & boat building.

We use the 2010 timing and $120 million replacement cost estimated for the *M/V Malaspina* as the timing and replacement cost for the *M/V Matanuska*. The two ships were both built in 1963. The *1998 AMHS Vessel Refurbishment and Fleet Replacement Study* estimated them to have the same replacement cost. AMHS planning also indicates some uncertainty as to which vessel would actually serve Lynn Canal in the No Action alternative.

We assume replacement costs are expended equally in the two years prior to a vessel's retirement.

We allocate Lynn Canal's pro-rata share of these replacement costs to Alternatives 1 and 4A-D. The pro-rata share is based on the percentages of time in Lynn Canal shown in Tables XIV and XV for the *M/V Columbia*, *M/V Matanuska*, and *FVF Fairweather*. The pro-rata shares of replacement costs are included in the respective years in Appendix Tables A-XXV through A-XXXIV.

Residual Values

Each capital improvement has a useful economic life. The value of a capital improvement declines over the course of its life, until there is no value remaining at the end of its useful life. At any point in time, the capital asset's remaining value is also referred to as its residual value.

In this analysis, residual values are credited against other capital project costs:

[20] "Fleet Addition & Retirement DRAFT Plan", Alaska Marine Highway System, Department of Transportation & Public Facilities, (Rev 090503).

1. when a marine vessel is removed from Lynn Canal service; and,

2. when any capital improvement still has a remaining useful life at the end of the study period.

The residual value is a negative number. It is an offset to other capital improvement costs. Appendix Table XXXV shows AMHS existing vessels' and their replacements' (except *M/V Aurora* replacements') residual values for each year in which a vessel is removed from Lynn Canal service and for 2038.

Residual values are included in the analysis to compensate for the fact that the 2004-2038 analysis period does not begin and end with the beginning and end of all capital assets' useful lives. Residual values account for the facts that:

1. In some alternatives, existing AMHS vessels leave Lynn Canal service before the end of their useful lives. In all alternatives, existing AMHS vessels enter the 2004-2038 analysis period after their construction. Thus, we do not destroy comparability among alternatives by ignoring existing vessels' construction costs. But, recognition needs to be given to the economic value made available for other uses when an alternative's other investments frees up an existing vessel. This includes the elimination of all existing vessel service in Lynn Canal, other than the *M/V Aurora*, when the road alternatives begin service in 2008. It also includes the halt to *M/V Matanuska* and *FVF Fairweather* service in Lynn Canal in 2008 in marine alternatives 4A-D.

2. Different capital assets have different useful lives. In 2038, many assets will still have remaining useful lives. It would be the rare improvement whose useful life happens to end in 2038. But, whether an asset has a remaining useful life in 2038 or not, and regardless of how long a useful life remains, the analysis has recognized the full cost of their construction[21]. Recognition needs to be given to the residual value of capital assets in 2038 to allocate capital costs between the study period and post-study period. This preserves comparability between alternatives.

Table XVII below shows construction periods and useful lives for each type of capital improvement.

[21] The only exceptions are the existing vessels *M/V Kennicott* and *M/V Aurora*, whose construction occurred before 2004 and whose useful lives end after 2038. The analysis has recognized the construction cost for replacements for the other existing vessels.

TABLE XVII

Capital Improvements
Construction Periods and Useful Lives

Capital Improvement	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals		
Earthwork	4	80
Structures	4	60
Other	4	25
Right of Way	1	100
New Vessels		
Steel displacement vessel	2	64
Aluminum fast vessel	2	32

. Of all the capital improvements, only "Other" costs for roads and ferry terminals have a useful life shorter than the 31 years of project operation from 2008-38. We assume that replacement costs for these improvements are the same as their original acquisition costs in 2004 dollars. We assume half of the replacement costs are expended in each of the two years prior to the end of the original improvements' useful lives.

We generally assume capital improvements have a residual value in 2038 equal to their acquisition or replacement cost, multiplied by the ratio of their remaining useful life to their original useful life. Salvage costs or restoration costs are ignored.

The residual value is an estimate of market value. It represents what the proceeds might be from sale of an asset if it were removed from service in the Juneau Access project. It also represents what another party, or AMHS in the case of ferry vessels, might pay to acquire the asset for use in another transportation project.

It may well be that assets used in Juneau Access would have little market value for another party, or in another project. The market for U.S.-built ferry vessels can be non-existent at times. It is not readily apparent what, if any, alternative use might be made of highway improvements. Still, the depreciated replacement cost approach used in this study to estimate residual values provides a reasonable estimate of market value to the extent:

1. marine vessels might be employed elsewhere in AMHS service; or,

2. the Juneau Access project remains in place beyond 2038.

Current AMHS planning anticipates that the *M/V Columbia* and *M/V Matanuska* will not be redeployed in AMHS service when they are removed from Lynn Canal. According, we use DOT&PF's salvage value estimates of:

1. $1 million for the *M/V Columbia* for the road alternatives; and,

2. $500,000 for the *M/V Matanuska* for the road alternatives and marine alternatives 4A-B;

as residual value, rather than depreciated replacement cost. In the No Action and marine alternatives 4A-B, in which one or both of these vessels continues in service throughout the study period, we use depreciated replacement cost for 2038 residual value.

Despite its shortcomings, depreciated replacement cost serves as an unbiased cost allocation scheme for comparability among Juneau Access alternatives. It also approximates what actual cash flows would be for each alternative, if unexpired capital assets were liquidated when removed from Lynn Canal service or when 2038 arrived. Cash flow is the basis for measuring benefits and costs in a benefit-cost analysis. It correctly accounts for the opportunity cost or time value of money.

The method used to estimate residual value is the same as the accounting procedure for straight-line depreciation. This does not mean that capital costs are the same as the cumulative depreciation for a project.

Most capital costs occur during the first four years of the project. Their present values will be close to the actual cash outlays. The credit for residual value will be very small in present value because the residual value is realized so far in the future. The net capital costs—the present value of acquisition costs minus the present value of residual value—will be much greater than the present value of the annual depreciation charges during the life of the project.

Costing capital improvements through an annual depreciation charge over the life of a project would be at odds with present value analysis. Present value analysis measures costs as of the time resources are expended—i.e., on a cash basis. This is appropriate for economic evaluation.

Terminal Values

An alternative to residual values would be to estimate the costs and benefits of the project to infinity. Pragmatically, this usually requires cutting off the detailed analysis after some finite number of years. When the residual value represents the net present value of the project from the end of the study period to infinity, it is often called the terminal value.

Given the complexity of the model used to estimate Juneau Access benefits and costs and the alternatives' varying useful lives, there are no simple algorithms to estimate net present values to infinity. The difference between a residual value of capital assets and a terminal project value methodology is minimized because both values are realized in 2038, 34 years into the future. Such distant values have very small

present values. Their effect on the rankings of alternatives is likely to be de minimus.

One might also assume that the residual value approach stumbles when the end of the analysis period occurs around the time major capital expenditures would occur for replacement of assets. For example, what if alternative Z required $50 million to replace a marine vessel in 2041. Wouldn't it rank better than it should against other alternatives that did not require such expenditure? Aren't the costs for alternative Z understated in the big picture because of the arbitrary study cut-off of 2038?

No. If one extended the analysis to 2041, it would indeed recognize the additional expenditures of $50 million during 2039 and 2040. But, it would also recognize an offsetting residual value of $50 million less one year's depreciation in 2041. The net result would be very little change in the capital costs for the alternative, especially in present value in 2004.[22]

Extending the analysis beyond 2041 to capture a more significant portion of the replacement vessel's useful life would merely perpetuate the problem. At some point along the way, another capital asset with a different useful life will expire and need replacement.

Operating Costs

Operating costs are estimated separately for roads and vessels. Ferry terminal operating costs are included in the estimates of vessel operating costs as an overhead item. Appendix Tables XXXVI through XLV show the operating costs for each alternative.

Roads

Road operating costs consist of highway maintenance costs. The costs are approximately $8,000 per lane mile—double the average cost of highway maintenance in Southeast Alaska. The higher costs reflect higher snowfall and avalanche activity expected on the Juneau Access road segments.

Highway maintenance costs are from "Juneau Access, Highway Maintenance Cost Estimates", prepared by Southeast Region Maintenance & Operations, Alaska Department of Transportation & Public Facilities, February 20, 2004. This document is included in Appendix D of the SDEIS. The costs in this document are in fiscal year 2004 dollars. This study escalates the costs to calendar year 2004 dollars, using the trend in the Anchorage CPI over the last ten years.

[22] Along these lines, we note that marine alternatives 4A and B require half of the replacement cost of their fast ferries to be expended in 2038. The fast ferries' useful lives require replacement vessels to begin service in 2040, 32 years after 2008. To take Alternative 4A as an example, construction costs of $55.6 million would occur in each of 2038 and 2039. But, at the end of 2038, there would be an offsetting residual value of $55.6 million of construction-in-progress. Because the net result is zero, no entries appear in the capital cost Appendix Tables A-XXV through A-XXXIV.

Costs include avalanche control costs. Avalanche control costs are from "Juneau Access Improvements, Snow Avalanche Technical Studies, Snow Avalanche Report".

The "Juneau Access, Highway Maintenance Cost Estimates" document states,

> "These cost estimates are intended to represent the cost of providing seven day per week highway maintenance during winter, and routine summer maintenance….Staffing levels for each alternative are estimated to provide an adequate winter level of service, but do not provide active snow plowing and patrolling 24 hours per day. During major snow storms and heavy avalanches, staffing is not adequate to ensure trafficable roads at all times, and highway closures for avalanche monitoring and clean up will be necessary."

New Vessels and M/V Aurora

Operating costs for the *M/V Aurora* and new vessels are delineated in four cost categories—crew, fuel, maintenance, and lay-up & management costs—in Appendix Tables XXXVI through XLV. These costs are from *Juneau Access Improvements – Marine Segments Analysis.*[23]

In those alternatives in which a new vessel replaces the *M/V Aurora*, the tables reflect a shift in costs in the year of replacement. Generally, this reflects the different operating characteristics of a newer or different size ship. In Alternative 2, the change in operating costs also reflects a change in the summer service schedule from 9 round trips per day with the *M/V Aurora* to 8 round trips per day with her replacement.

Except for the *M/V Aurora*'s removal from service, costs are projected to remain constant in real dollars (net of inflation). This means there is no ramping up or other change in service frequency to tailor service schedules to traffic levels over the study period. With the one exception noted for Alternative 2, service schedules are assumed to remain constant over the study period. In part, this reflects a project goal of providing more convenient, frequent service, even if there is some excess capacity in the early years. The amount and complexity of analysis needed to adapt service schedules to traffic is beyond the scope of the SDEIS.

Existing Vessels

For the Juneau Access benefit/cost analysis, only a pro-rated share of existing vessels' operating costs (except for the *M/V Aurora*) is included as project costs. The Juneau Access' share of these vessels' costs is based on the proportion of their hours of operation spent in Lynn Canal.

Operating costs for existing AMHS vessels are based on "Marine Segments Analysis, Mainline Vessel and FVF costs for Alternative 1 and Alternatives 4A - 4D". This document is included as Appendix B of this report. The costs contained in this

[23] *Juneau Access Improvements–Marine Segments Analysis*, Appendices.

document have been adjusted using the Anchorage CPI to put them in 2004 dollars. See Appendix Table A-XLVI.

The document provides estimates of operating costs for the *M/V Columbia*, *M/V Kennicott*, *M/V Matanuska*, and *FVF Fairweather*. The document states,

> "The mainline vessels that will operate in Lynn Canal have not been identified for the Juneau Access Improvements alternatives. For the purpose of this analysis, the *M/V Columbia* which operates out of Bellingham, WA and the *M/V Matanuska* and *M/V Kennicott* which operate out of Prince Rupert, B.C. were selected as representative vessels of those that would serve Lynn Canal."

The fourth vessel, the *FVF Fairweather* would also operate in Lynn Canal in the No Action alternative. In marine alternatives 4A-D, only two mainline vessels would operate in Lynn Canal. The document selects the *M/V Columbia* and *M/V Kennicott* as representative of mainline vessel costs for alternatives 4A-D. Table XVIII below shows the existing vessel operating costs for the No Action and marine alternatives. .

TABLE XVIII

Existing AMHS Vessels
Operating Costs

	% of Time in Lynn Canal		Lynn Canal Operating Costs 2004 $ (000)	
	No Action	Alt's. 4A-D	No Action	Alt's. 4A-D
Columbia	11.5%	11.5%	1,542	1,542
Kennicott	15.8%	15.8%	2,410	2,410
Matanuska	12.3%		1,526	
Fairweather	58.9%		3,308	
			8,786	3,952

Revenues

Project revenues consist of highway fuel taxes and AMHS ferry fares. Appendix Tables A-XLVII through A-LVI show the calculation of revenues for each alternative from traffic in and out of Auke Bay. Appendix Tables A-LVII through A-LXVI show the revenue calculations for Haines-Skagway local traffic.

No AMHS revenue from berths, food, or beverage sales is included. Such revenues will be minor. Most AMHS traffic will be on shorter dayboat or shuttle routes or high-speed ferries.

Highway fuel taxes are estimated using the current federal tax rate of 18.4 cents per gallon of gasoline and 8 cents per gallon for the State. We use the *Juneau Access Traffic Forecast*'s estimate that 95 percent of traffic is auto and 5 percent is truck. Fuel consumption is estimated at 0.042 gallons per mile for autos and 0.170 gallons per mile for trucks. These fuel consumption figures are for vehicles traveling 45 mph. They are from Table 5-5of AASHTO's *User Benefit Analysis for Highways*.

Fuel tax revenue is estimated for each alternative by multiplying each year's projected traffic (AADT x 365) by the:

1. average number of road miles between origin and destination;

2. weighted average fuel consumption of 0.0484 gallons per mile for autos and trucks; and,

3. the appropriate federal or State tax rate.

AMHS revenue for each year is computed as the product of the average fare between origin and destination and the number of users (AADT x 365 x 2.3 users/vehicle for road alternatives or 3.6 users/vehicle for marine alternatives, including No Action).

Appendix Tables A-LXVII through A-LXIX show the calculation of the average road miles and average fares between Auke Bay and Haines or Skagway. Appendix Table A-LXX shows the average miles and fares for Haines and Skagway origin and destination traffic.

The Juneau Access alternatives can be evaluated by a number of measures. Some are measures of economic efficiency. They consider the benefits received as well as project costs. Other measures look at project cost alone.

As explained in the introduction, net present value is the best measure of a project's economic value to society as a whole. But, if budgets constrain what can be spent, other measures such as benefit/cost ratios, life-cycle costs, or State funds may be relevant to project selection.

One can also look at the projects' impact on users, without considering costs. Of course, since users do not pay the full costs of the project, this is not a sufficient basis for making a decision.

Economic Efficiency

Project selection based on economic efficiency would be guided by net present value, or by benefit/cost (B/C) ratios if funding were constrained, but available for other projects besides Juneau Access. Tables XIX and XX below show net present value and B/C ratios for all alternatives.

The tables show user benefits and project costs to provide a more comprehensive picture of the alternatives. User benefits minus project costs equals net present value. User benefits divided by project costs equals the B/C ratio. Appendix Table A-LXXI provides a breakdown of project costs into capital costs, operating costs, and government revenues.

Table XIX shows the results when all fund sources are included in project costs. This provides the alternatives' economic efficiency with respect to the U.S. economy.

Table XX shows the results when only State funds are included in project costs. This table's net present values and B/C ratios might be of interest in more narrowly evaluating alternatives from the standpoint of the State's self-interest. But, use of federal or other fund sources is rarely without cost, either in terms of other projects foregone or drawing down the State's political capital in the competition for funds.

It would be preferable to rely upon the total fund measures of economic efficiency, even if the State faces budgetary constraints. Evaluation of projects in that case would gauge Juneau Access' budgetary demand by project costs in State dollars, but use a total fund measure of economic efficiency—NPV or B/C ratio—to guide project selection.

TABLE XIX

Economic Efficiency
Total Funds
($000)

Alternative	2004-38 Present Value as of 1/1/04 @ Private Sector Rate of Return: User Benefits	Incremental Project Costs (vs. No Action)	NPV	Benefit/Cost Ratio
1 - No Action	0	0	0	1.00
2 - East Lynn with Katzehin	287,788	172,570	115,218	1.67
2A - East Lynn with Berners Shuttle	239,540	193,485	46,055	1.24
2B - East Lynn to Katzehin	226,133	155,856	70,276	1.45
2C - East Lynn without Katzehin	271,319	156,791	114,528	1.73
3 - West Lynn Highway	205,493	173,298	32,195	1.19
4A - FVF Auke Bay	69,481	125,068	(55,587)	0.56
4B - FVF Berners Bay	106,589	129,533	(22,945)	0.82
4C - Dayboat Auke Bay	4,174	61,293	(57,120)	0.07
4D - Dayboat Berners Bay	53,349	50,494	2,855	1.06

Considering all funds, all the road alternatives have positive net present values. But, only marine alternative 4D–Dayboat Berners Bay is worth more than it costs. The two road alternatives that provide a road the whole way between Juneau and Skagway are the most worthwhile. Alternative 2, the one that provides a shuttle to Haines from Katzehin, rather than from Skagway, has a slightly higher net present value than Alternative 2C. But, the difference is not significant given the uncertainty in the analysis.

If one were using B/C ratios to evaluate Juneau Access alternatives against other projects, Alternative 2C—the through-highway to Skagway without a Katzehin shuttle—would then rank higher, as well as have a lesser cost than Alternative 2. What project, if any, to select under a budget constraint would, of course, depend as well on the amount of funds available and the B/C ratios for projects other than Juneau Access.

TABLE XX

Economic Efficiency
State Funds
($000)

Alternative	User Benefits	Incremental Project Costs (vs. No Action)	NPV	Benefit/Cost Ratio
	2004-38 Present Value as of 1/1/04 @ Private Sector Rate of Return			
1 - No Action	0	0	0	1.00
2 - East Lynn with Katzehin	287,788	11,150	276,638	25.81
2A - East Lynn with Berners Shuttle	239,540	25,751	213,790	9.30
2B - East Lynn to Katzehin	226,133	25,974	200,159	8.71
2C - East Lynn without Katzehin	271,319	11,028	260,291	24.60
3 - West Lynn Highway	205,493	24,844	180,649	8.27
4A - FVF Auke Bay	69,481	28,429	41,053	2.44
4B - FVF Berners Bay	106,589	26,524	80,065	4.02
4C - Dayboat Auke Bay	4,174	14,550	(10,376)	0.29
4D - Dayboat Berners Bay	53,349	8,762	44,587	6.09

Table XXI below provides rankings of alternatives based on NPV and B/C ratio, in terms of both total funds and State funds. Alternatives 2 and 2C rank 1 and 2 respectively in net present value based on either total or State funds.

From the standpoint of B/C ratios for total funds, road alternative 2C–East Lynn without Katzehin ranks highest. All evaluation measures rank the No Action and all marine alternatives behind all road alternatives.

If only marine alternatives were being considered, Alternative 4D–Dayboat Berners Bay rates the best. It is the only marine alternative with a positive net present value and a B/C ratio greater than 1 for total funds. In terms of State funds, Alternative 4B–FVF Berners Bay has a higher net present value, but a lower B/C ratio. Alternative 4D's small incremental cost and general superiority on economic efficiency grounds among marine alternatives could warrant its consideration if budgets were severely constrained.

TABLE XXI

Alternative Rankings
Economic Efficiency (highest = 1)

Alternative	Net Present Value (Total Funds)	Net Present Value State Funds	Benefit/Cost Ratio Total Funds	Benefit/Cost Ratio State Funds
1 - No Action	7	9	7	9
2 - East Lynn with Katzehin	1	1	2	1
2A - East Lynn with Berners Shuttle	4	3	4	3
2B - East Lynn to Katzehin	3	4	3	4
2C - East Lynn without Katzehin	2	2	1	2
3 - West Lynn Highway	5	5	5	5
4A - FVF Auke Bay	9	8	9	8
4B - FVF Berners Bay	8	6	8	7
4C - Dayboat Auke Bay	10	10	10	10
4D - Dayboat Berners Bay	6	7	6	6

Cost-Effectiveness

Project selection could be made on the basis of cost-effectiveness. An alternative is cost-effective if it has the lowest life-cycle cost among all alternatives with a given amount of benefits. Cost-effectiveness is appropriate if all alternatives have the same benefits or if it is impractical to assign dollar values to benefits.

In the case of Juneau Access, cost-effectiveness might be appropriate if one took the view that all alternatives provide the same benefit—improved transportation between Lynn Canal communities—even though user costs and traffic are different for each alternative.

But, the availability of a generally accepted methodology for valuing benefits—the AASHTO user benefit calculation used in this report—argues for project selection on an economic efficiency, rather than a cost-effectiveness, basis.

If budgetary constraints must be considered, it would be preferable to use B/C ratios, rather than LCC or State funds cost, for alternative selection. This would bring economic efficiency into the picture, but still allow budgetary limits to be placed on project selection.

The AASHTO methodology relies on user benefits. User benefits do not completely encompass the full spectrum of benefits. For this reason, cost-effectiveness is an alternative analytic approach. Too much uncertainty about benefits might also argue

for use of a cost-effectiveness standard, though there are analytical methods to address uncertainty. In this report, risk analyses and sensitivity analyses provide some estimate of the uncertainty.

Life-Cycle Costs

Tables XXII and XXIII show the life-cycle costs of each alternative. Table XXII considers all fund sources. Table XXIII counts only State funds.

TABLE XXII

Life-Cycle Project Costs
Total Funds
($000)

Alternative	Capital Costs	Operating Costs	Total Project Costs	Revenue	Net Project Costs
	2004-38 Present Value as of 1/1/04 @ State Cost of Capital & Opportunity Cost				
1 - No Action	87,407	179,272	266,680	(125,897)	140,782
2 - East Lynn with Katzehin	218,603	104,492	323,096	(58,919)	264,177
2A - East Lynn with Berners Shuttle	227,360	152,359	379,719	(88,321)	291,398
2B - East Lynn to Katzehin	193,743	158,194	351,937	(89,104)	262,833
2C - East Lynn without Katzehin	201,565	102,678	304,242	(54,789)	249,454
3 - West Lynn Highway	214,430	160,858	375,288	(95,396)	279,892
4A - FVF Auke Bay	231,535	263,328	494,863	(186,631)	308,232
4B - FVF Berners Bay	232,887	248,850	481,737	(175,695)	306,042
4C - Dayboat Auke Bay	128,804	197,647	326,451	(131,314)	195,137
4D - Dayboat Berners Bay	120,039	193,069	313,108	(134,234)	178,874

TABLE XXIII

Life-Cycle Project Costs
State Funds
($000)

Alternative	Capital Costs	Operating Costs	Total Project Costs	Revenue	Net Project Costs
	2004-38 Present Value as of 1/1/04 @ State Cost of Capital & Opportunity Cost				
1 - No Action	7,893	179,272	187,165	(125,874)	61,291
2 - East Lynn with Katzehin	19,740	104,492	124,232	(56,354)	67,879
2A - East Lynn with Berners Shuttle	20,531	152,359	172,889	(86,619)	86,271
2B - East Lynn to Katzehin	17,495	158,194	175,689	(87,443)	88,246
2C - East Lynn without Katzehin	18,201	102,678	120,879	(52,614)	68,265
3 - West Lynn Highway	19,363	160,858	180,221	(94,179)	86,042
4A - FVF Auke Bay	20,908	263,328	284,236	(186,602)	97,634
4B - FVF Berners Bay	21,030	248,850	269,880	(175,488)	94,392
4C - Dayboat Auke Bay	11,631	197,647	209,278	(131,289)	77,989
4D - Dayboat Berners Bay	10,840	193,069	203,909	(134,077)	69,831

Total Funds

Looking at total project costs from all funds in Table XXII, we see that the No Action alternative involves the smallest amount of government outlays, followed by Alternative 2C–East Lynn without Katzehin.

If we consider net project costs, the two displacement hull marine alternatives—4D and 4C—move into second and third place respectively behind the No Action alternative. Whether project revenues are considered or not, all of the road alternatives cost less than the two fast ferry alternatives—4A and 4B.

State Funds

Looking at total State-funded project costs, Table XXIII shows the least cost alternative to be Alternative 2C–East Lynn without Katzehin. All road alternatives have total project State fund costs less than the No Action or any marine alternative.

If we consider State funds net of State revenues, No Action has the lowest cost. The two through-highways to Skagway, Alternatives 2 and 2C rank second and third respectively

The difference between total funds and State funds life-cycle costs is due to the 90.97 percent Federal match for capital costs and 18.4 cents per gallon Federal highway

fuel tax assumed in this study. Operating costs are the same in terms of both total and State funds.

It may be easier to see how the alternatives stack up by looking at life-cycle costs in terms of equivalent annual costs or their rank.

Table XXIV below shows the annualized net project cost for each alternative. The annualized cost is net of project revenues. The annualized cost is the amount that, if expended each and every year of the project, would cost the same, in present value, as the project's actual expenditures, net of revenues.

TABLE XXIV

Life-Cycle Project Costs
Annualized Net Project Costs
($000)

Alternative	Total Funds	State Funds
1 - No Action	7,121	3,610
2 - East Lynn with Katzehin	12,441	3,812
2A - East Lynn with Berners Shuttle	13,955	4,922
2B - East Lynn to Katzehin	12,778	5,094
2C - East Lynn without Katzehin	11,829	3,862
3 - West Lynn Highway	13,471	4,928
4A - FVF Auke Bay	14,913	5,609
4B - FVF Berners Bay	14,756	5,409
4C - Dayboat Auke Bay	9,741	4,566
4D - Dayboat Berners Bay	8,896	4,082

It can be seen in Table XXV below that the rankings based on annualized net project cost differ slightly from those based on the aggregate amount of net project cost. The slight differences in rank arise from the use of different State opportunity costs (discount rates) for capital as opposed to operating expenditures.

Looking at all the LCC measures in Table XXV, No Action generally predominates as the lowest cost alternative. Alternative 2C–East Lynn without Katzehin generally would be the least cost alternative among the "build" candidates. Alternative 4D–Dayboat Berners Bay has the lowest cost among marine alternatives across all LCC measures.

TABLE XXV

Alternative Rankings
Life-Cycle Costs (lowest cost = 1)

Alternative	Total Funds: Total Project Cost	Total Funds: Net Project Cost	Total Funds: Annualized Net Cost	State Funds: Total Project Cost	State Funds: Net Project Cost	State Funds: Annualized Net Cost
1 - No Action	1	1	1	6	1	1
2 - East Lynn with Katzehin	4	6	5	2	2	2
2A - East Lynn with Berners Shuttle	8	8	8	3	7	6
2B - East Lynn to Katzehin	6	5	6	4	8	8
2C - East Lynn without Katzehin	2	4	4	1	3	3
3 - West Lynn Highway	7	7	7	5	6	7
4A - FVF Auke Bay	10	10	10	10	10	10
4B - FVF Berners Bay	9	9	9	9	9	9
4C - Dayboat Auke Bay	5	3	3	8	5	5
4D - Dayboat Berners Bay	3	2	2	7	4	4

User Costs and Benefits

User cost reflects the cost per trip to the individual user. User cost is a prime determinant of an alternative's frequency of use. User cost is the basis of the Auke Bay traffic projections contained in *Juneau Access Traffic Forecast* for all alternatives except Alternative 2.[24]

Haines and Skagway local traffic is not calibrated to user cost. It was estimated based on 2002 traffic and specific estimates of induced traffic for each alternative. It is not part of *Juneau Access Traffic Forecast*. It was used in the *Marine Segments Analysis* to determine Haines-Skagway shuttle ferry configurations and schedules.

User benefits are an aggregate measure of all users' savings in costs, compared to the No Action alternative. They take traffic into account. Because user cost is the basis for most of the study's traffic projections, project preference will be similar whether evaluated in terms of user cost, or in terms of user benefits.

Table XXVI below shows projected traffic, number of users, and user costs.

[24] Alternative 2 has the fewest constraints on the opportunity to travel and was expected to have the lowest user cost and highest levels of traffic. For these reasons, Alternative 2 traffic was estimated as the sum of detailed estimates of diverted and induced traffic in each of 7 specific geographic travel markets.

TABLE XXVI

Traffic, Users, and User Costs
by Origin and Destination Pair

Alternative	AADT 2008	AADT 2038	Average Annual Daily Users 2008	Average Annual Daily Users 2038	User Costs
Auke Bay-Haines and Auke Bay-Skagway					
1 - No Action	93	130	336	467	155.55
2 - East Lynn with Katzehin	518	938	1,191	2,157	46.79
2A - East Lynn with Berners Shuttle	389	684	895	1,573	58.20
2B - East Lynn to Katzehin	387	680	890	1,565	60.83
2C - East Lynn without Katzehin	418	735	961	1,690	50.10
3 - West Lynn Highway	315	538	725	1,238	67.16
4A - FVF Auke Bay	141	221	508	794	116.20
4B - FVF Berners Bay	166	267	598	962	100.38
4C - Dayboat Auke Bay	103	147	370	529	152.37
4D - Dayboat Berners Bay	131	198	471	714	124.05
Haines-Skagway					
1 - No Action	38	55	87	127	42.74
2 - East Lynn with Katzehin	50	78	115	180	30.65
2A - East Lynn with Berners Shuttle	50	78	115	180	31.28
2B - East Lynn to Katzehin	50	78	115	180	37.65
2C - East Lynn without Katzehin	50	78	115	180	34.01
3 - West Lynn Highway	50	78	115	180	34.01
4A - FVF Auke Bay	38	55	87	127	43.80
4B - FVF Berners Bay	38	55	87	127	43.80
4C - Dayboat Auke Bay	38	55	87	127	43.80
4D - Dayboat Berners Bay	38	55	87	127	43.80

User costs for all road alternatives are less than the No Action or any marine alternative. The road alternatives have lower costs mainly because of the inclusion of time as a user cost. The ferry alternatives have a higher cost for time because of the slower travel speeds, as well as the trip frequency delays and unload times.

User costs for roads also are lower than for ferries because of the absence of tolls. Ferries charge fares for both passengers and vehicles.

User benefits in the base case for the various alternatives are:

Alternative	User Benefits ($000)
1 - No Action	0
2 - East Lynn with Katzehin	287,788
2A - East Lynn with Berners Shuttle	239,540
2B - East Lynn to Katzehin	226,133
2C - East Lynn without Katzehin	271,319
3 - West Lynn Highway	205,493
4A - FVF Auke Bay	69,481
4B - FVF Berners Bay	106,589
4C - Dayboat Auke Bay	4,174
4D - Dayboat Berners Bay	53,349

The road alternatives have higher benefits than marine alternatives partly because they reduce user costs more than do marine alternatives. But, road alternatives' benefits are also higher because they induce more travel.

Because traffic is largely a function of travel cost, it is not surprising that project ranking based on user benefits mirrors the ranking based on user cost to or from Auke Bay, the largest generator of traffic. See Table XXVII below.

TABLE XXVII

Alternative Rankings
User Costs and User Benefits
Base Case

Alternative	User Cost (lowest = 1) To/from Auke Bay	User Cost (lowest = 1) Haines to/from Skagway	User Benefits (highest = 1)
1 - No Action	10	6	10
2 - East Lynn with Katzehin	1	1	1
2A - East Lynn with Berners Shuttle	3	2	3
2B - East Lynn to Katzehin	4	5	4
2C - East Lynn without Katzehin	2	3	2
3 - West Lynn Highway	5	3	5
4A - FVF Auke Bay	7	7	7
4B - FVF Berners Bay	6	7	6
4C - Dayboat Auke Bay	9	7	9
4D - Dayboat Berners Bay	8	7	8

Risk Analyses

Two measures of project risk are an alternative's breakeven point and the variation in its net present value over time.

Breakeven

Table XXVIII below shows how quickly each "build" alternative reaches the breakeven point. The breakeven year is the first year in which cumulative net present value turns positive. It is one measure of the alternatives' risks. All other things being equal, the alternative that reaches breakeven sooner would be preferred. This is because the uncertainty of the estimates increases the farther the estimate is into the future.

Table XXVIII

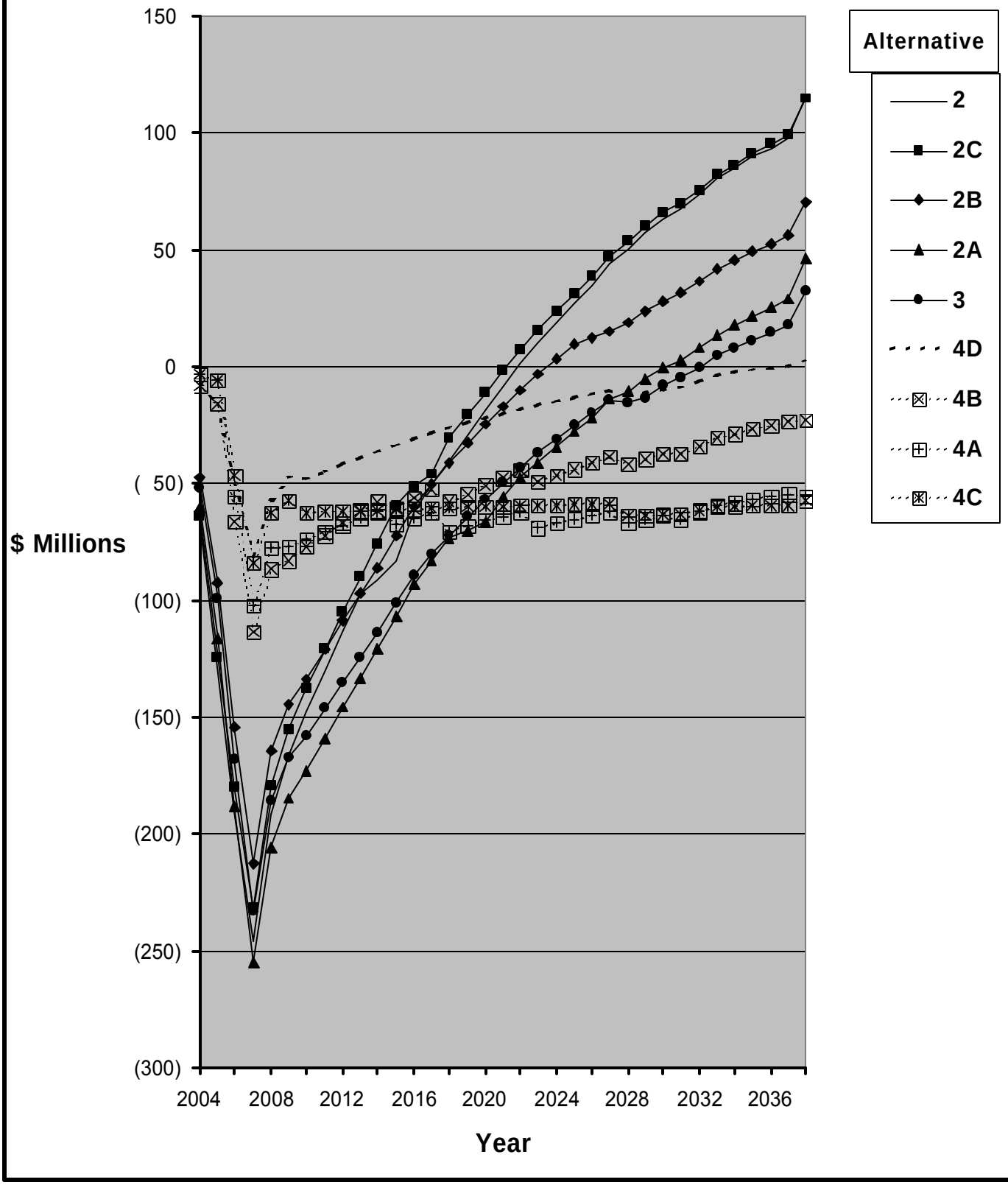
Breakeven Year

Alternative	Breakeven
1 - No Action	NA
2 - East Lynn with Katzehin	2022
2A - East Lynn with Berners Shuttle	2031
2B - East Lynn to Katzehin	2024
2C - East Lynn without Katzehin	2022
3 - West Lynn Highway	2033
4A - FVF Auke Bay	None
4B - FVF Berners Bay	None
4C - Dayboat Auke Bay	None
4D - Dayboat Berners Bay	2038

All of the road alternatives reach breakeven within the study period. The two Skagway through-highway alternatives 2 and 2C, reach breakeven the earliest, in 2022. Of the marine alternative, only Alternative 4D–Dayboat Berners Bay breaks even, in 2038.

Chart IV below shows the pattern of cumulative net present value over the period 2004–2038.

Chart IV
Cumulative Net Present Value



Variation in Net Present Value

Of course, the breakeven point does not indicate the magnitude of the risks. Risk is measured by the variation in net present value. All other things being equal, including net present value, the alternative with the least variation in net present value over time would be preferred.

Risk preferences may differentiate between downside risk and upside risk. Decision-makers are often more averse to downside risk than they are enthusiastic about upside potential.

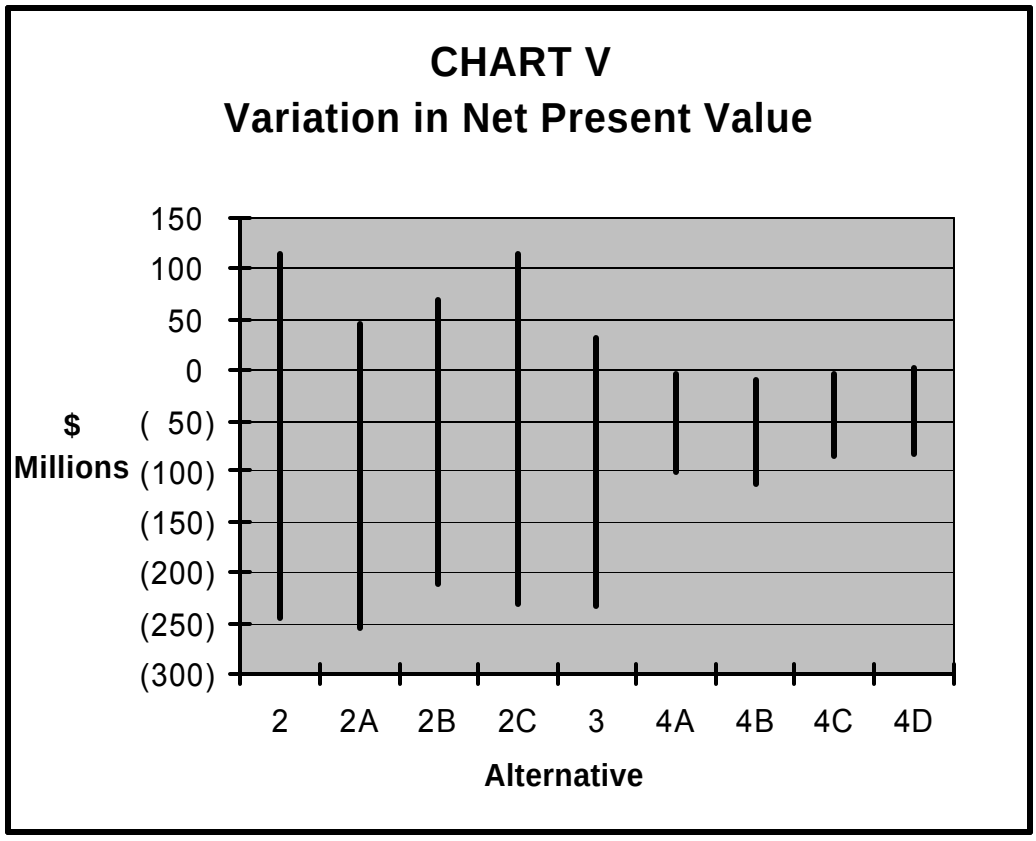
The road alternatives have the greatest downside risk due to their heavy upfront capital costs. But, they also have the strongest risk of showing positive benefits. In fact, Alternative 4D–Dayboat Berners Bay is the only marine alternative that experiences positive net present values at any point in its life. Table XXIX below shows the variation in cumulative net present value over the study period.

TABLE XXIX

Variation in Net Present Value
2004-2038

Alternative	Cumulative NPV Maximum	Minimum
1 - No Action	NA	NA
2 - East Lynn with Katzehin	115,218	(245,934)
2A - East Lynn with Berners Shuttle	46,055	(255,150)
2B - East Lynn to Katzehin	70,276	(212,418)
2C - East Lynn without Katzehin	114,528	(232,181)
3 - West Lynn Highway	32,195	(232,848)
4A - FVF Auke Bay	(3,142)	(102,211)
4B - FVF Berners Bay	(8,266)	(113,672)
4C - Dayboat Auke Bay	(3,142)	(84,250)
4D - Dayboat Berners Bay	2,855	(81,634)

The variation in cumulative net present value can be seen in Chart IV. Chart V below displays the range of this variation specifically.



Sensitivity Analyses

Sensitivity analyses were performed to see the effects of changing critical assumptions. The sensitivity analyses involved excess burden, construction cost overruns, frequency delay, and time value.

Each sensitivity analysis recalculated all user costs and project costs. Based on these revised costs, net present value and other evaluation measures were recalculated. Traffic projections were not revised for the sensitivity analyses. Following the methodology used in the SDEIS *Juneau Access Traffic Forecast*, revised user costs would have implied revisions to the traffic projections, at least for the alternatives other than Alternative 2—East Lynn Highway with Katzehin Terminal.

To better see the effects of critical assumptions, Table XXX below presents a summary of selected evaluation measures for the Base Case. The Base Case is the best estimate of Juneau Access' benefits and costs. Table XXX can be compared to the summary tables presented for each sensitivity case. One can then see what difference changing certain assumptions makes.

Excess Burden

Net project costs of each alternative were increased by 25 percent. In other words, we multiplied the sum of the present values of capital and operating costs, less the present value of project revenues by 1.25.

This places an extra charge of 25 percent on the net demands made on Alaska and U.S. taxpayers to fund Juneau Access. What project users pay is first netted out before calculating the charge. The 25 percent charge represents the loss of economic production due to the misallocation of resources caused by taxes distorting relative prices.

TABLE XXX

Evaluation Summary
Base Case

	NPV (Total Funds)			LCC (State Funds)			
				Total Project Costs		Annualized Net Costs	
Alternative	$000	Rank	Breakeven	$000	Rank	$000	Rank
1 - No Action	0	7	NA	187,165	6	3,610	1
2 - East Lynn with Katzehin	115,218	1	2022	124,232	2	3,812	2
2A - East Lynn with Berners Shuttle	46,055	4	2031	172,889	3	4,922	6
2B - East Lynn to Katzehin	70,276	3	2024	175,689	4	5,094	8
2C - East Lynn without Katzehin	114,528	2	2022	120,879	1	3,862	3
3 - West Lynn Highway	32,195	5	2033	180,221	5	4,928	7
4A - FVF Auke Bay	(55,587)	9	None	284,236	10	5,609	10
4B - FVF Berners Bay	(22,945)	8	None	269,880	9	5,409	9
4C - Dayboat Auke Bay	(57,120)	10	None	209,278	8	4,566	5
4D - Dayboat Berners Bay	2,855	6	2038	203,909	7	4,082	4

Table XXXI below summarizes selected evaluation measures, with the excess burden added to net project costs.

TABLE XXXI

Evaluation Summary
Excess Burden

Alternative	NPV (Total Funds) $000	Rank	Breakeven	LCC (State Funds) Total Project Costs $000	Rank	Annualized Net Costs $000	Rank
1 - No Action	0	4	NA	187,165	6	3,610	1
2 - East Lynn with Katzehin	72,075	2	2028	124,232	2	3,812	2
2A - East Lynn with Berners Shuttle	(2,316)	5	None	172,889	3	4,922	6
2B - East Lynn to Katzehin	31,312	3	2034	175,689	4	5,094	8
2C - East Lynn without Katzehin	75,331	1	2027	120,879	1	3,862	3
3 - West Lynn Highway	(11,129)	7	None	180,221	5	4,928	7
4A - FVF Auke Bay	(86,854)	10	None	284,236	10	5,609	10
4B - FVF Berners Bay	(55,328)	8	None	269,880	9	5,409	9
4C - Dayboat Auke Bay	(72,443)	9	None	209,278	8	4,566	5
4D - Dayboat Berners Bay	(9,768)	6	None	203,909	7	4,082	4

An excess burden reduces the net present value of all alternatives. Road alternatives 2A–East Lynn with Berners Shuttle and 3–West Lynn Highway no longer show a positive net present value. Marine alternative 4D–Dayboat Berners Bay also becomes a loss in NPV.

Project rank according to NPV is somewhat similar to the Base Case. Road alternatives generally outrank the No Action and marine alternatives, but not in all cases. With an excess burden, Alternatives 2 and 2C, ranked first and second respectively in the Base Case, trade places.

Breakeven for Alternatives 2, 2B, and 2C is pushed back five to ten years.

The excess burden charge is not added to project costs for life-cycle cost analysis. The charge is only relevant for measure economic costs and benefits. It does not affect the cost to State government of undertaking Juneau Access. Thus, there is no change from the Base Case in LCC costs or rank.

Construction Cost Overruns

There are two construction cost overrun sensitivity cases. In one, we increased all capital costs by 25 percent, in the other by 50 percent. The increases apply to acquisition costs, replacement costs, and vessel refurbishment costs. Residual values also increase 25 and 50 percent as a result.

Table XXXII below summarizes evaluation measures for the 25 percent construction cost overrun.

TABLE XXXII

Evaluation Summary
25% Construction Cost Overrun

Alternative	NPV (Total Funds) $000	Rank	Breakeven	LCC (State Funds) Total Project Costs $000	Rank	Annualized Net Costs $000	Rank
1 - No Action	0	4	NA	189,138	6	3,697	1
2 - East Lynn with Katzehin	70,346	2	2028	129,167	2	4,030	2
2A - East Lynn with Berners Shuttle	(379)	5	None	178,022	3	5,149	7
2B - East Lynn to Katzehin	34,253	3	2033	180,063	4	5,287	8
2C - East Lynn without Katzehin	74,037	1	2027	125,429	1	4,063	3
3 - West Lynn Highway	(8,843)	7	None	185,061	5	5,141	6
4A - FVF Auke Bay	(82,146)	10	None	289,463	10	5,840	10
4B - FVF Berners Bay	(51,291)	8	None	275,137	9	5,642	9
4C - Dayboat Auke Bay	(69,966)	9	None	212,186	8	4,695	5
4D - Dayboat Berners Bay	(8,641)	6	None	206,618	7	4,201	4

A 25 percent construction cost overrun reduces the net present value of all alternatives. Road alternatives 2A and 3 no longer maintain a positive net present value. Marine alternative 4D – Dayboat Berners Bay also becomes a loss in NPV.

Project rank according to NPV is somewhat similar to the Base Case. Road alternatives generally outrank the No Action and marine alternatives, but not in all cases. Alternatives 2 and 2C, ranked first and second respectively in the Base Case, trade places.

Breakeven for Alternatives 2, 2B, and 2C is pushed back five to nine years.

The life-cycle cost effect of the overrun is muted in terms of State funds, because of the 90.97 percent Federal share of construction costs. Project costs paid from State funds increase about $2.0 million to $5.3 million. Annualized State-funded costs, net of State revenues, vary even less, of course. The largest increase in annualized net costs is about $230,000.

A 50 percent construction cost overrun leaves only Alternatives 2 and 2C with a net benefit. See Table XXXIII. Alternative 2C has the higher net benefit and ranks first in NPV. Alternative 2 ranks second. The No Action alternative moves into third place.

Breakeven recedes 15 and 13 years respectively for Alternatives 2 and 2C, compared to the Base Case. Total State-funded project costs rise $3.9 million to $10.5 million. Annualized net costs increase as much as $465,000 per year.

TABLE XXXIII

Evaluation Summary
50% Construction Cost Overrun

Alternative	NPV (Total Funds) $000	Rank	Breakeven	LCC (State Funds) Total Project Costs $000	Rank	Annualized Net Costs $000	Rank
1 - No Action	0	3	NA	191,111	6	3,784	1
2 - East Lynn with Katzehin	25,473	2	2037	134,102	2	4,248	2
2A - East Lynn with Berners Shuttle	(46,814)	6	None	183,155	3	5,375	7
2B - East Lynn to Katzehin	(1,771)	4	None	184,437	4	5,480	8
2C - East Lynn without Katzehin	33,546	1	2035	129,979	1	4,264	3
3 - West Lynn Highway	(49,881)	7	None	189,902	5	5,355	6
4A - FVF Auke Bay	(108,706)	10	None	294,690	10	6,071	10
4B - FVF Berners Bay	(79,636)	8	None	280,395	9	5,874	9
4C - Dayboat Auke Bay	(82,812)	9	None	215,094	8	4,823	5
4D - Dayboat Berners Bay	(20,136)	5	None	209,328	7	4,321	4

There is no change in the alternatives' State-funded total project life-cycle cost rankings as a result of the 25 percent or 50 percent cost overruns and only a minor change in their annualized net cost rankings.

No Frequency Delay

For this sensitivity case, we eliminate frequency delay as a user cost. In its place, we substitute the average load time. This case assumes that either:

1. Users that do nothing but wait, either at the terminal or elsewhere, for the next ferry departure, have no alternative use for their time of any value; or that,

2. Users that engage in other activities during the frequency delay, rather than just waiting, derive as much value for their time as the $8.02 time value used in the Base Case and this sensitivity case.

In either event, there is no user cost to the frequency delay. A more sophisticated analysis of this sensitivity case would require that traffic be re-estimated.

Table XXXIV below summarizes evaluation measures for this sensitivity case.

TABLE XXXIV

Evaluation Summary
No Frequency Delay

Alternative	NPV (Total Funds) $000	Rank	Breakeven	LCC (State Funds) Total Project Costs $000	Rank	Annualized Net Costs $000	Rank
1 - No Action	0	1	NA	187,165	6	3,610	1
2 - East Lynn with Katzehin	(40,143)	4	None	124,232	2	3,812	2
2A - East Lynn with Berners Shuttle	(95,200)	9	None	172,889	3	4,922	6
2B - East Lynn to Katzehin	(58,975)	5	None	175,689	4	5,094	8
2C - East Lynn without Katzehin	(38,485)	3	None	120,879	1	3,862	3
3 - West Lynn Highway	(92,544)	7	None	180,221	5	4,928	7
4A - FVF Auke Bay	(115,315)	10	None	284,236	10	5,609	10
4B - FVF Berners Bay	(94,533)	8	None	269,880	9	5,409	9
4C - Dayboat Auke Bay	(69,638)	6	None	209,278	8	4,566	5
4D - Dayboat Berners Bay	(36,174)	2	None	203,909	7	4,082	4

Elimination of frequency delay as a user cost makes the net present value of all "build" alternatives negative. Marine alternative 4D–Dayboat Berners Bay shows the smallest loss in NPV and is the number 2 ranked alternative behind No Action. 4D would be the highest ranked "build" alternative. Road alternatives 2 and 2C's losses are slightly greater. They rank fourth and third in NPV, respectively, behind No Action.

There is no change in life-cycle costs compared to the Base Case. Project costs do not change.

No Time Value for Non-Work Travel

For this sensitivity case, we set the average value of time equal to zero for time spent traveling for non-work purposes. There are at least two ways one could look at this assumption:

1. Users have no alternative use of non-work time that is of any value to them; or that,

2. Half of all users derive a positive benefit from non-work travel equal to twice the $8.02 value that all users would derive from time spent in other activities. Such users, deriving a benefit of $16.04 per hour from the recreational, social, aesthetic, or other aspects of non-work travel, would have a net benefit of $8.02. This would precisely offset the $8.02 cost to the other half of all users for non-work travel.

This case tests whether project ranking is sensitive to the possibility that the limiting factor for Lynn Canal travel is ferry fares, rather than a combination of fares and travel time.

It would also be relevant to a situation where substantial portions of non-commercial travelers experience positive recreational or other benefits not accounted for by the AASHTO methodology. The AASHTO methodology accounts for only those user benefits represented by reductions in user time and costs for AMHS fares, vehicle driving, and accidents.

Again, such a drastic change is user cost would be better evaluated if traffic were re-estimated. It would probably require traveler surveys to better reveal their actual preferences for travel and travel modes versus other activities. Very likely, it would indicate some aggregate measure of time value that is different from zero.

Table XXXV below summarizes evaluation measures for this sensitivity case.

TABLE XXXV

Evaluation Summary
No Time Value for Non-Work Travel

	NPV (Total Funds)			LCC (State Funds) Total Project Costs		LCC (State Funds) Annualized Net Costs	
Alternative	$000	Rank	Breakeven	$000	Rank	$000	Rank
1 - No Action	0	1	NA	187,165	6	3,610	1
2 - East Lynn with Katzehin	(10,230)	3	None	124,232	2	3,812	2
2A - East Lynn with Berners Shuttle	(61,919)	8	None	172,889	3	4,922	6
2B - East Lynn to Katzehin	(29,233)	5	None	175,689	4	5,094	8
2C - East Lynn without Katzehin	(5,459)	2	None	120,879	1	3,862	3
3 - West Lynn Highway	(59,821)	7	None	180,221	5	4,928	7
4A - FVF Auke Bay	(101,781)	10	None	284,236	10	5,609	10
4B - FVF Berners Bay	(79,123)	9	None	269,880	9	5,409	9
4C - Dayboat Auke Bay	(57,322)	6	None	209,278	8	4,566	5
4D - Dayboat Berners Bay	(19,082)	4	None	203,909	7	4,082	4

Assuming average non-work travel time to be costless makes the net present value of all "build" alternatives negative. The No Action alternative ranks the highest in NPV. Road alternatives 2 and 2C are the highest ranking "build" alternatives, with 2C outranking 2, the reverse of the Base Case.

There is no change in life-cycle costs compared to the Base Case. Project costs do not change.

Assigning no opportunity cost to non-work travel time greatly reduces user costs and benefits in absolute dollars. But, it does not change user cost and benefit rankings for the No Action and road alternatives, compared to the Base Case. Compare Table XXXVI to Table XXVII. Zero cost for personal travel time causes only a minor change in rank among the lower-ranking marine alternatives.

TABLE XXXVI

Alternative Rankings
User Costs and User Benefits
No Non-Work Time Value

Alternative	User Cost (lowest = 1) To/from Auke Bay	Haines to/from Skagway	User Benefits (highest = 1)
1 - No Action	10	6	10
2 - East Lynn with Katzehin	1	1	1
2A - East Lynn with Berners Shuttle	3	2	3
2B - East Lynn to Katzehin	4	5	4
2C - East Lynn without Katzehin	2	3	2
3 - West Lynn Highway	5	3	5
4A - FVF Auke Bay	8	7	8
4B - FVF Sawmill Cove	6	7	6
4C - Dayboat Auke Bay	9	7	9
4D - Dayboat Sawmill Cove	7	7	7

70 Percent of Average Wages as Time Value for Non-Work Travel

For this sensitivity case, we set the value of time equal to 70 percent of average wages for time spent traveling for non-work purposes. This is the AASHTO manual's guideline[25] for personal intercity travel by auto.

In the Base Case, the value of time for non-work travel was set at 50 percent of average wages. 50 percent is used in the Base Case to provide a conservative estimate of user benefits and reflect the benefits that some travelers may derive from recreational, social, or aesthetic aspects of non-work travel.

[25] Table 5-1, *User Benefit Analysis for Highways*, AASHTO, August 2003.

Table XXXVII below summarizes evaluation measures for this sensitivity case.

TABLE XXXVII

Evaluation Summary
70% of Average Wage as Time Value for Non-Work Travel

Alternative	NPV (Total Funds) $000	Rank	Breakeven	LCC (State Funds) Total Project Costs $000	Rank	Annualized Net Costs $000	Rank
1 - No Action	0	7	NA	187,165	6	3,610	1
2 - East Lynn with Katzehin	165,397	1	2019	124,232	2	3,812	2
2A - East Lynn with Berners Shuttle	89,245	4	2025	172,889	3	4,922	6
2B - East Lynn to Katzehin	110,080	3	2021	175,689	4	5,094	8
2C - East Lynn without Katzehin	162,523	2	2019	120,879	1	3,862	3
3 - West Lynn Highway	69,002	5	2025	180,221	5	4,928	7
4A - FVF Auke Bay	(37,110)	9	None	284,236	10	5,609	10
4B - FVF Berners Bay	(474)	8	None	269,880	9	5,409	9
4C - Dayboat Auke Bay	(57,038)	10	None	209,278	8	4,566	5
4D - Dayboat Berners Bay	11,630	6	2032	203,909	7	4,082	4

Using 70 percent of average wages as the value of non-work travel time increases the net present value of all alternatives, although only marginally in the case of Alternative 4C. But, the rankings based on NPV remain unchanged from the Base Case.

There is no change in life-cycle costs or rank compared to the Base Case. Project costs do not change.

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User Benefit Analysis Appendices

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APPENDIX A

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TABLE A-I

User Cost
Auke Bay to Haines and Skagway

Alternative	Haines Unit User Cost	Skagway Unit User Cost	Haines Traffic	Skagway Traffic	Blended Unit User Cost
1 - No Action	143.40	170.39	55%	45%	155.55
2 - East Lynn with Katzehin					
2008-15	55.57	39.90	44%	56%	46.79
2016-38	56.19	39.90	44%	56%	47.07
2A - East Lynn with Berners Shuttle	67.32	51.04	44%	56%	58.20
2B - East Lynn to Katzehin	56.19	65.47	50%	50%	60.83
2C - East Lynn without Katzehin	73.91	39.90	30%	70%	50.10
3 - West Lynn Highway	56.96	90.97	70%	30%	67.16
4A - FVF Auke Bay	107.93	126.31	55%	45%	116.20
4B - FVF Berners Bay	88.99	114.29	55%	45%	100.38
4C - Dayboat Auke Bay	144.04	162.55	55%	45%	152.37
4D - Dayboat Berners Bay	117.64	131.90	55%	45%	124.05

TABLE A-II

User Cost
Auke Bay to Haines

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User
1 - No Action	AUK-HNS	FVF/Main	69.56	19.45	215	13	496	723		27.45	64.40				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**220**	**13**	**496**	**729**	**97.40**	**27.45**	**64.40**	**1.88**	**0.50**	**3.6**	**143.40**
Road Alternatives															
2 - East Lynn SGY															
2008-15	AUK-KTZ	Road	77.40	45.00	103			103				33.83	8.98		
	KTZ-HNS	SHU	6.15	13.18	28	10	61	100		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**137**	**10**	**61**	**208**	**27.86**	**3.85**	**9.69**	**35.71**	**9.48**	**2.3**	**55.57**
2016-38	AUK-KTZ	Road	77.40	45.00	103			103				33.83	8.98		
	KTZ-HNS	SHU	6.15	13.18	28	10	66	104		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**137**	**10**	**66**	**213**	**28.48**	**3.85**	**9.69**	**35.71**	**9.48**	**2.3**	**56.19**
2A - East Lynn SGY	AUK-SAW	Road	32.00	45.00	43			43				13.99	3.71		
	SAW-SLC	SHU	4.15	13.11	19	10	35	64		3.25	8.49				
	SLC-KTZ	Road	35.00	45.00	47			47				15.30	4.06		
	KTZ-HNS	SHU	6.15	13.18	28	10	66	104		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**142**	**20**	**101**	**263**	**35.18**	**7.09**	**18.18**	**31.16**	**8.27**	**2.3**	**67.32**
2B - East Lynn KTZ	AUK-KTZ	Road	77.40	45.00	103			103				33.83	8.98		
	KTZ-HNS	SHU	6.15	13.18	28	10	66	104		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**137**	**10**	**66**	**213**	**28.48**	**3.85**	**9.69**	**35.71**	**9.48**	**2.3**	**56.19**

TABLE A-II

User Cost
Auke Bay to Haines

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User

TABLE A-II

User Cost
Auke Bay to Haines

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User
2C - East Lynn SGY	AUK-SGY	Road	95.30	45.00	127			127				41.65	11.06		
	SGY-HNS	SHU	12.23	13.85	53	10	92	155		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**186**	**10**	**92**	**288**	**38.49**	**5.67**	**13.34**	**43.53**	**11.56**	**2.3**	**73.91**
3 - West Lynn	AUK-SAW	Road	32.00	45.00	43			43				13.99	3.71		
	SAW-WHB	SHU	11.29	14.11	48	10	64	122		5.39	12.77				
	WHB-HNS	Road	38.90	45.00	52			52				17.00	4.51		
Total					**143**	**10**	**64**	**217**	**28.96**	**5.39**	**12.77**	**30.99**	**8.23**	**2.3**	**56.96**
Marine Alternatives															
4A - FVF Auke Bay	AUK-HNS	FVF/Main	69.56	23.83	175	14	259	448		28.20	66.16				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**181**	**14**	**259**	**454**	**60.69**	**28.20**	**66.16**	**1.88**	**0.50**	**3.6**	**107.93**
4B - FVF Berners Bay	AUK-SAW	Road	20.91	45.00	28			28				9.14	2.43		
	SAW/AUK-HNS	FVF/Main	54.00	25.37	128	14	190	333		21.91	51.40				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**161**	**14**	**190**	**366**	**48.94**	**21.91**	**51.40**	**11.02**	**2.93**	**3.6**	**88.99**
4C - Dayboat Auke Bay	AUK-HNS	Day/Main	69.56	14.34	291	10	445	746		26.00	61.00				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**297**	**10**	**445**	**752**	**100.44**	**26.00**	**61.00**	**1.88**	**0.50**	**3.6**	**144.04**
4D - Dayboat Berners Bay	AUK-SAW	Road	19.60	45.00	26			26				8.57	2.27		
	SAW/AUK-HNS	Day/Main	54.97	14.55	227	10	330	567		20.55	48.21				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**259**	**10**	**330**	**599**	**80.03**	**20.55**	**48.21**	**10.45**	**2.77**	**3.6**	**117.64**

TABLE A-III

User Cost
Auke Bay to Skagway

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User
1 - No Action	**AUK-SGY**	**FVF/Main**	**79.29**	**18.80**	**253**	**27**	**538**	**818**	**109.32**	**36.82**	**87.32**			**3.6**	**170.39**
Road Alternatives															
2 - East Lynn SGY	**AUK-SGY**	**Road**	**95.30**	**45.00**	**127**			**127**	**16.98**			**41.65**	**11.06**	**2.3**	**39.90**
2A - East Lynn SGY	AUK-SAW	Road	32.00	45.00	43			43				13.99	3.71		
	SAW-SLC	SHU	4.15	13.11	19	10	35	64		3.25	8.49				
	SLC-SGY	Road	52.90	45.00	71			71				23.12	6.14		
Total					**132**	**10**	**35**	**177**	**23.68**	**3.25**	**8.49**	**37.11**	**9.85**	**2.3**	**51.04**
2B - East Lynn KTZ	AUK-KTZ	Road	77.40	45.00	103			103				33.83	8.98		
	KTZ-SGY	SHU	13.51	15.01	54	10	92	156		6.05	14.11				
Total					**157**	**10**	**92**	**259**	**34.67**	**6.05**	**14.11**	**33.83**	**8.98**	**2.3**	**65.47**
2C - East Lynn SGY	**AUK-SGY**	**Road**	**95.30**	**45.00**	**127**			**127**	**16.98**			**41.65**	**11.06**	**2.3**	**39.90**
3 - West Lynn	AUK-SAW	Road	32.00	45.00	43			43				13.99	3.71		
	SAW-WHB	SHU	11.29	14.11	48	10	64	122		5.39	12.77				
	WHB-HNS	Road	38.90	45.00	52			52				17.00	4.51		
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
	HNS-SGY	SHU	12.23	13.85	53	10	92	155		5.67	13.34				
Total					**201**	**20**	**156**	**378**	**50.47**	**11.06**	**26.11**	**32.87**	**8.73**	**2.3**	**90.97**

TABLE A-III

User Cost
Auke Bay to Skagway

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User
Marine Alternatives															
4A - FVF Auke Bay	**AUK-SGY**	**FVF/Main**	**77.72**	**23.79**	**196**	**19**	**259**	**474**	**63.34**	**37.96**	**90.02**			**3.6**	**126.31**
4B - FVF Berners Bay	AUK-SAW	Road	19.60	45.00	26			26				8.57	2.27		
	SAW/AUK-SGY	FVF/Main	63.13	23.70	160	19	259	438		29.71	70.45				
Total					**186**	**19**	**259**	**464**	**62.00**	**29.71**	**70.45**	**8.57**	**2.27**	**3.6**	**114.29**
4C - Dayboat Auke Bay	**AUK-SGY**	**Day/Main**	**78.25**	**14.72**	**319**	**18**	**445**	**782**	**104.49**	**35.00**	**83.00**			**3.6**	**162.55**
4D - Dayboat Berners Bay	AUK-SAW	Road	19.60	45.00	26			26				8.57	2.27		
	SAW/AUK-SGY	Day/Main	63.34	15.17	251	16	330	597		27.50	65.20				
Total					**277**	**16**	**330**	**623**	**83.28**	**27.50**	**65.20**	**8.57**	**2.27**	**3.6**	**131.90**

TABLE A-IV

User Cost
Haines to Skagway

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User
1 - No Action	SGY-HNS	SHU	12.23	13.85	53	10	157	220		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**157**	**226**	**30.23**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**42.74**
Road Alternatives															
2 - East Lynn SGY															
2008-15	SGY-KTZ	Road	17.90	45.00	24			24				7.82	2.08		
	KTZ-HNS	SHU	6.15	13.18	28	10	61	100		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**58**	**10**	**61**	**129**	**17.26**	**3.85**	**9.69**	**9.70**	**2.58**	**2.3**	**30.65**
2016-38	SGY-KTZ	Road	17.90	45.00	24			24				7.82	2.08		
	KTZ-HNS	SHU	6.15	13.18	28	10	66	104		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**58**	**10**	**66**	**134**	**17.88**	**3.85**	**9.69**	**9.70**	**2.58**	**2.3**	**31.28**
2A - East Lynn SGY	SGY-KTZ	Road	17.90	45.00	24			24				7.82	2.08		
	KTZ-HNS	SHU	6.15	13.18	28	10	66	104		3.85	9.69				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**58**	**10**	**66**	**134**	**17.88**	**3.85**	**9.69**	**9.70**	**2.58**	**2.3**	**31.28**
2B - East Lynn KTZ	SGY-HNS	SHU	14.46	14.06	62	19	92	173		6.34	14.68				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**67**	**19**	**92**	**179**	**23.90**	**6.34**	**14.68**	**1.88**	**0.50**	**2.3**	**37.65**
2C - East Lynn SGY	SGY-HNS	SHU	12.23	13.85	53	10	92	155		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**92**	**161**	**21.51**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**34.01**

TABLE A-IV

User Cost
Haines to Skagway

Alternative	Leg	Mode	Miles	Speed	Travel Time	Unload	Delay	Total Time	Time Cost/User	Individual Fare	Vehicle Fare	Vehicle Costs	Accident Cost	Users/ Vehicle	Total Cost/ User
3 - West Lynn	SGY-HNS	SHU	12.23	13.85	53	10	92	155		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**92**	**161**	**21.51**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**34.01**
Marine Alternatives															
4A - FVF Auke Bay	SGY-HNS	SHU	12.23	13.85	53	10	165	228		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**165**	**234**	**31.30**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**43.80**
4B - FVF Berners Bay	SGY-HNS	SHU	12.23	13.85	53	10	165	228		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**165**	**234**	**31.30**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**43.80**
4C - Dayboat Auke Bay	SGY-HNS	SHU	12.23	13.85	53	10	165	228		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**165**	**234**	**31.30**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**43.80**
4D - Dayboat Berners Bay	SGY-HNS	SHU	12.23	13.85	53	10	165	228		5.67	13.34				
	HNS-LTK	Road	4.30	45.00	6			6				1.88	0.50		
Total					**59**	**10**	**165**	**234**	**31.30**	**5.67**	**13.34**	**1.88**	**0.50**	**2.3**	**43.80**

TABLE A-V

User Cost
Marine Legs, Alternatives, and Modes

Marine Leg	Mode/Alternative	Nautical Miles	Knots/Hour	Transit Time	Unload Time	Round-Trips/Day		Frequency Delay			Total AMHS Fare ($)	
						Summer	Winter	Year-Round Average	Summer	Winter	Passenger	Vehicle
AUK-HNS	MAIN/1	69.56	14.34	291	10	0.4	0.4				26.00	61.00
	FVF/1	69.56	27.10	154	15	0.7	0.3				28.60	67.10
	BLEND/1	**69.56**	**19.45**	**215**	**13**	**1.1**	**0.7**	**496**	**420**	**672**	**27.45**	**64.40**
AUK-HNS	MAIN/4A	69.56	14.34	291	10	0.3	0.3				26.00	61.00
	FVF/4A	69.56	27.10	154	15	2.0	1.0				28.60	67.10
	BLEND/4A	**69.56**	**23.83**	**175**	**14**	**2.3**	**1.3**	**259**	**210**	**373**	**28.20**	**66.16**
AUK-HNS	MAIN/4B	69.56	14.34	291	10	0.3	0.3				26.00	61.00
SAW-HNS	FVF/4B	45.74	30.49	90	15	4.0					18.81	44.12
AUK-HNS	FVF/4B	69.56	27.10	154	15		1.0				28.60	67.10
SAW/AUK-HNS	**BLEND/4B**	**54.00**	**25.37**	**128**	**14**	**4.3**	**1.3**	**190**	**112**	**373**	**21.91**	**51.40**
AUK-HNS	**DAY/MAIN/4C**	**69.56**	**14.34**	**291**	**10**	**1.3**	**0.8**	**445**	**373**	**611**	**26.00**	**61.00**
AUK-HNS	DAY/MAIN/4D	69.56	14.34	291	10	0.3	0.8				26.00	61.00
SAW-HNS	DAY/4D	45.74	14.75	186	10	2.0					17.10	40.11
SAW/AUK-HNS	**BLEND/4D**	**54.97**	**14.55**	**227**	**10**	**2.3**	**0.8**	**330**	**210**	**611**	**20.55**	**48.21**
AUK-SGY	MAIN/1	81.79	14.27	344	41	0.4	0.4				35.00	83.00
	FVF/1	76.98	27.33	169	15	0.6	0.3				38.50	91.30
	BLEND/1	**79.29**	**18.80**	**253**	**27**	**1.0**	**0.7**	**538**	**480**	**672**	**36.82**	**87.32**
AUK-SGY	MAIN/4A	81.79	14.27	344	41	0.3	0.3				35.00	83.00
	FVF/4A	76.98	27.33	169	15	2.0	1.0				38.50	91.30
	BLEND/4A	**77.72**	**23.79**	**196**	**19**	**2.3**	**1.3**	**259**	**210**	**373**	**37.96**	**90.02**
AUK-SGY	MAIN/4B	81.79	14.27	344	41	0.3	0.3				35.00	83.00
SAW-SGY	FVF/4B	53.16	29.00	110	15	2.0					25.02	59.34
AUK-SGY	FVF/4B	76.98	27.33	169	15		1.0				38.50	91.30
SAW/AUK-SGY	**BLEND/4B**	**63.13**	**23.70**	**160**	**19**	**2.3**	**1.3**	**259**	**210**	**373**	**29.71**	**70.45**
AUK-SGY	MAIN/4C	81.79	14.27	344	41	0.3	0.3				35.00	83.00
	DAY/4C	76.98	14.90	310	10	1.0	0.5				35.00	83.00
	BLEND/4C	**78.25**	**14.72**	**319**	**18**	**1.3**	**0.8**	**445**	**373**	**611**	**35.00**	**83.00**

TABLE A-V

User Cost
Marine Legs, Alternatives, and Modes

Marine Leg	Mode/Alternative	Nautical Miles	Knots/Hour	Transit Time	Unload Time	Round-Trips/Day		Frequency Delay			Total AMHS Fare ($)	
						Summer	Winter	Year-Round Average	Summer	Winter	Passenger	Vehicle
AUK-SGY	MAIN/4D	81.79	14.27	344	41	0.3	0.3				35.00	83.00
SAW-SGY	DAY/4D	53.16	15.79	202	10	2.0					22.75	53.95
AUK-SGY	DAY/4D	76.98	14.90	310	10		0.5				35.00	83.00
SAW/AUK-SGY	**BLEND/4D**	**63.34**	**15.17**	**251**	**16**	**2.3**	**0.8**	**330**	**210**	**611**	**27.50**	**65.20**
SAW-WHB	**SHUTTLE/3**	**11.29**	**14.11**	**48**	**10**	**12.0**	**4.0**	**64**	**40**	**120**	**5.39**	**12.77**
SAW-SLC	**SHUTTLE/2A**	**4.15**	**13.11**	**19**	**10**	**20.0**	**8.0**	**35**	**24**	**60**	**3.25**	**8.49**
KTZ-HNS	**SHUTTLE/2 (2008-15)**	**6.15**	**13.18**	**28**	**10**	**9.0**	**6.0**	**61**	**53**	**80**	**3.85**	**9.69**
KTZ-HNS	**SHUTTLE/2 (2016-38),2A-B**	**6.15**	**13.18**	**28**	**10**	**8.0**	**6.0**	**66**	**60**	**80**	**3.85**	**9.69**
KTZ-SGY	**SHUTTLE/2B**	**13.51**	**15.01**	**54**	**10**	**6.0**	**4.0**	**92**	**80**	**120**	**6.05**	**14.11**
HNS-SGY	**SHUTTLE/2C,3**	**12.23**	**13.85**	**53**	**10**	**6.0**	**4.0**	**92**	**80**	**120**	**5.67**	**13.34**
HNS-SGY	SHUTTLE/2B	12.23	13.85	53	10	6.0					5.67	13.34
HNS-KTZ-SGY	2 SHUTTLES/2B	19.66	14.39	82	41		4.0				7.90	17.80
	BLEND/2B	**14.46**	**14.06**	**62**	**19**	**6.0**	**4.0**	**92**	**80**	**120**	**6.34**	**14.68**
HNS-SGY	SHUTTLE/1,4A-D	12.23	13.85	53	10	3.0	2.0				5.67	13.34
	MAIN/1	12.23	13.85	53	10	0.4	0.4				5.67	13.34
	BLEND/1	**12.23**	**13.85**	**53**	**10**	**3.4**	**2.4**	**157**	**140**	**198**	**5.67**	**13.34**
HNS-SGY	SHUTTLE/1,4A-D	12.23	13.85	53	10	3.0	2.0				5.67	13.34
	MAIN/4A-D	12.23	13.85	53	10	0.3	0.3				5.67	13.34
	BLEND/4A-D	**12.23**	**13.85**	**53**	**10**	**3.3**	**2.3**	**165**	**146**	**210**	**5.67**	**13.34**

TABLE A-VI

User Cost
Road Legs

Road Leg	Statute Miles	Miles/Hour	Transit Time	Vehicle Cost	Accident Cost
AUK-SAW	32.00	45	43	13.99	3.71
AUK-KTZ	77.40	45	103	33.83	8.98
AUK-SGY	95.30	45	127	41.65	11.06
SAW-KTZ	45.40	45	61	19.84	5.27
SAW-SGY	63.30	45	84	27.67	7.35
SAW-SLC	10.40	45	14	4.55	1.21
SLC-KTZ	35.00	45	47	15.30	4.06
SLC-SGY	52.90	45	71	23.12	6.14
KTZ-SGY	17.90	45	24	7.82	2.08
WHB-HNS	38.90	45	52	17.00	4.51
HNS-LTK	4.30	45	6	1.88	0.50

TABLE A-VII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4C - Dayboat Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 1 - No Action	3.6	1.1%	91	93	130
Alternative 4C - Dayboat Auke Bay	3.6	1.2%	100	103	147

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)	
Year	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Cost Reduction	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0
2005	156	156	0	91	91	329	0	0
2006	156	156	0	92	92	331	0	0
2007	156	156	0	92	92	333	0	0
2008	156	152	3	93	103	353	409	302
2009	156	152	3	94	104	357	414	285
2010	156	152	3	95	105	361	419	270
2011	156	152	3	97	106	365	424	255
2012	156	152	3	98	108	370	428	241
2013	156	152	3	99	109	374	433	228
2014	156	152	3	100	110	378	438	215
2015	156	152	3	101	112	382	443	204
2016	156	152	3	102	113	387	449	193
2017	156	152	3	103	114	391	454	182
2018	156	152	3	104	116	396	459	172
2019	156	152	3	105	117	400	464	163
2020	156	152	3	106	119	405	470	154
2021	156	152	3	108	120	410	475	145
2022	156	152	3	109	121	414	480	137
2023	156	152	3	110	123	419	486	130

TABLE A-VII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4C - Dayboat Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 1 - No Action	3.6	1.1%	91	93	130
Alternative 4C - Dayboat Auke Bay	3.6	1.2%	100	103	147

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)	
Year	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Cost Reduction	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04
2024	156	152	3	111	124	424	492	123
2025	156	152	3	112	126	429	497	116
2026	156	152	3	114	127	434	503	110
2027	156	152	3	115	129	439	509	104
2028	156	152	3	116	130	444	515	98
2029	156	152	3	118	132	449	521	93
2030	156	152	3	119	134	454	527	88
2031	156	152	3	120	135	459	533	83
2032	156	152	3	121	137	465	539	78
2033	156	152	3	123	138	470	545	74
2034	156	152	3	124	140	476	551	70
2035	156	152	3	125	142	481	558	66
2036	156	152	3	127	143	487	564	63
2037	156	152	3	128	145	492	571	59
2038	156	152	3	130	147	498	577	56
Total							15,145	4,556

TABLE A-VIII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4D - Dayboat Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4C - Dayboat Auke Bay	3.6	1.2%	100	103	147
Alternative 4D - Dayboat Berners Bay	3.6	1.4%	127	131	198

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4D vs. 4C		Alternative 4C vs. No Action		Alternative 4D vs. No Action	
Year	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Cost Reduction	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	152	124	28	103	131	420	4,343	3,203	409	302	4,752	3,505
2009	152	124	28	104	133	426	4,400	3,033	414	285	4,814	3,318
2010	152	124	28	105	134	431	4,458	2,871	419	270	4,876	3,141
2011	152	124	28	106	136	437	4,516	2,719	424	255	4,940	2,974
2012	152	124	28	108	138	443	4,575	2,574	428	241	5,004	2,815
2013	152	124	28	109	140	449	4,635	2,437	433	228	5,069	2,665
2014	152	124	28	110	142	454	4,696	2,308	438	215	5,134	2,523
2015	152	124	28	112	144	460	4,758	2,185	443	204	5,201	2,389
2016	152	124	28	113	146	466	4,820	2,069	449	193	5,269	2,262
2017	152	124	28	114	148	473	4,884	1,959	454	182	5,337	2,141
2018	152	124	28	116	150	479	4,948	1,855	459	172	5,407	2,027
2019	152	124	28	117	152	485	5,013	1,756	464	163	5,477	1,919
2020	152	124	28	119	154	491	5,078	1,663	470	154	5,548	1,817
2021	152	124	28	120	157	498	5,145	1,575	475	145	5,620	1,720
2022	152	124	28	121	159	504	5,213	1,491	480	137	5,693	1,628
2023	152	124	28	123	161	511	5,281	1,412	486	130	5,767	1,542
2024	152	124	28	124	163	518	5,350	1,337	492	123	5,842	1,459
2025	152	124	28	126	166	525	5,421	1,266	497	116	5,918	1,382
2026	152	124	28	127	168	531	5,492	1,198	503	110	5,995	1,308
2027	152	124	28	129	170	538	5,564	1,135	509	104	6,073	1,238
2028	152	124	28	130	173	545	5,637	1,074	515	98	6,152	1,172
2029	152	124	28	132	175	553	5,711	1,017	521	93	6,232	1,110

TABLE A-VIII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4D - Dayboat Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4C - Dayboat Auke Bay	3.6	1.2%	100	103	147
Alternative 4D - Dayboat Berners Bay	3.6	1.4%	127	131	198

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4D vs. 4C		Alternative 4C vs. No Action		Alternative 4D vs. No Action	
Year	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Cost Reduction	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	152	124	28	134	177	560	5,786	963	527	88	6,313	1,051
2031	152	124	28	135	180	567	5,862	912	533	83	6,395	995
2032	152	124	28	137	182	575	5,939	864	539	78	6,478	942
2033	152	124	28	138	185	582	6,017	818	545	74	6,563	892
2034	152	124	28	140	188	590	6,097	774	551	70	6,648	844
2035	152	124	28	142	190	598	6,177	733	558	66	6,734	799
2036	152	124	28	143	193	606	6,258	694	564	63	6,822	757
2037	152	124	28	145	196	613	6,340	657	571	59	6,911	716
2038	152	124	28	147	198	622	6,424	622	577	56	7,001	678
Total							164,838	49,175	15,145	4,556	179,983	53,731

TABLE A-IX

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4A - FVF Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4D - Dayboat Berners Bay	3.6	1.4%	127	131	198
Alternative 4A - FVF Auke Bay	3.6	1.5%	137	141	221

Year	Blended Unit User Costs: Alternative 4D Dayboat Berners Bay	Blended Unit User Costs: Alternative 4A FVF Auke Bay	Cost Reduction	AADT: Alternative 4D Dayboat Berners Bay	AADT: Alternative 4A FVF Auke Bay	Annual Average Daily Users	Total Annual User Benefits ($000): Alternative 4A vs. 4D: Year of Travel	Alternative 4A vs. 4D: Present Value 1/1/04	Alternative 4D vs. No Action: Year of Travel	Alternative 4D vs. No Action: Present Value 1/1/04	Alternative 4A vs. No Action: Year of Travel	Alternative 4A vs. No Action: Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	124	116	8	131	141	489	1,404	1,035	4,752	3,505	6,156	4,540
2009	124	116	8	133	143	496	1,424	982	4,814	3,318	6,238	4,299
2010	124	116	8	134	145	504	1,445	931	4,876	3,141	6,321	4,072
2011	124	116	8	136	148	511	1,466	882	4,940	2,974	6,405	3,856
2012	124	116	8	138	150	518	1,487	837	5,004	2,815	6,491	3,652
2013	124	116	8	140	152	526	1,508	793	5,069	2,665	6,577	3,459
2014	124	116	8	142	154	534	1,530	752	5,134	2,523	6,665	3,275
2015	124	116	8	144	157	541	1,553	713	5,201	2,389	6,754	3,102
2016	124	116	8	146	159	549	1,575	676	5,269	2,262	6,844	2,938
2017	124	116	8	148	161	557	1,598	641	5,337	2,141	6,935	2,782
2018	124	116	8	150	164	565	1,621	608	5,407	2,027	7,028	2,635
2019	124	116	8	152	166	573	1,645	576	5,477	1,919	7,122	2,495
2020	124	116	8	154	169	582	1,669	546	5,548	1,817	7,217	2,363
2021	124	116	8	157	171	590	1,693	518	5,620	1,720	7,313	2,238
2022	124	116	8	159	174	599	1,717	491	5,693	1,628	7,411	2,120
2023	124	116	8	161	176	608	1,742	466	5,767	1,542	7,510	2,007
2024	124	116	8	163	179	616	1,768	442	5,842	1,459	7,610	1,901
2025	124	116	8	166	182	625	1,793	419	5,918	1,382	7,711	1,800
2026	124	116	8	168	185	634	1,819	397	5,995	1,308	7,814	1,705
2027	124	116	8	170	187	644	1,846	376	6,073	1,238	7,919	1,615
2028	124	116	8	173	190	653	1,873	357	6,152	1,172	8,025	1,529
2029	124	116	8	175	193	662	1,900	338	6,232	1,110	8,132	1,448
2030	124	116	8	177	196	672	1,927	321	6,313	1,051	8,240	1,372

TABLE A-IX

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4A - FVF Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4D - Dayboat Berners Bay	3.6	1.4%	127	131	198
Alternative 4A - FVF Auke Bay	3.6	1.5%	137	141	221

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4A vs. 4D		Alternative 4D vs. No Action		Alternative 4A vs. No Action	
Year	Alternative 4D Dayboat Berners Bay	Alternative 4A FVF Auke Bay	Cost Reduction	Alternative 4D Dayboat Berners Bay	Alternative 4A FVF Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	124	116	8	180	199	682	1,955	304	6,395	995	8,351	1,299
2032	124	116	8	182	202	692	1,984	288	6,478	942	8,462	1,230
2033	124	116	8	185	205	702	2,013	274	6,563	892	8,575	1,165
2034	124	116	8	188	208	712	2,042	259	6,648	844	8,690	1,104
2035	124	116	8	190	211	722	2,072	246	6,734	799	8,806	1,045
2036	124	116	8	193	214	733	2,102	233	6,822	757	8,924	990
2037	124	116	8	196	217	743	2,132	221	6,911	716	9,043	937
2038	124	116	8	198	221	754	2,163	210	7,001	678	9,164	888
Total							54,466	16,133	179,983	53,731	234,450	69,863

TABLE A-X

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4B - FVF Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4A - FVF Auke Bay	3.6	1.5%	137	141	221
Alternative 4B - FVF Berners Bay	3.6	1.6%	161	166	267

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4B vs. 4A		Alternative 4A vs. No Action		Alternative 4B vs. No Action	
Year	Alternative 4A FVF Auke Bay	Alternative 4B FVF Berners Bay	Cost Reduction	Alternative 4A FVF Auke Bay	Alternative 4B FVF Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	116	100	16	141	166	553	3,193	2,355	6,156	4,540	9,349	6,895
2009	116	100	16	143	169	562	3,243	2,235	6,238	4,299	9,480	6,535
2010	116	100	16	145	171	570	3,293	2,121	6,321	4,072	9,614	6,193
2011	116	100	16	148	174	579	3,344	2,013	6,405	3,856	9,749	5,869
2012	116	100	16	150	177	588	3,396	1,911	6,491	3,652	9,887	5,563
2013	116	100	16	152	180	597	3,449	1,814	6,577	3,459	10,026	5,272
2014	116	100	16	154	183	607	3,503	1,721	6,665	3,275	10,168	4,997
2015	116	100	16	157	186	616	3,557	1,634	6,754	3,102	10,311	4,736
2016	116	100	16	159	189	626	3,612	1,551	6,844	2,938	10,456	4,488
2017	116	100	16	161	192	635	3,668	1,472	6,935	2,782	10,604	4,254
2018	116	100	16	164	195	645	3,725	1,397	7,028	2,635	10,753	4,032
2019	116	100	16	166	198	655	3,783	1,326	7,122	2,495	10,905	3,821
2020	116	100	16	169	201	665	3,842	1,258	7,217	2,363	11,059	3,621
2021	116	100	16	171	204	676	3,902	1,194	7,313	2,238	11,215	3,432
2022	116	100	16	174	207	686	3,963	1,133	7,411	2,120	11,373	3,253
2023	116	100	16	176	211	697	4,024	1,076	7,510	2,007	11,534	3,083
2024	116	100	16	179	214	708	4,087	1,021	7,610	1,901	11,697	2,922
2025	116	100	16	182	217	719	4,150	969	7,711	1,800	11,862	2,769
2026	116	100	16	185	221	730	4,215	920	7,814	1,705	12,029	2,625
2027	116	100	16	187	224	741	4,280	873	7,919	1,615	12,199	2,488
2028	116	100	16	190	228	753	4,347	828	8,025	1,529	12,371	2,358
2029	116	100	16	193	232	764	4,414	786	8,132	1,448	12,546	2,235

TABLE A-X

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4B - FVF Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4A - FVF Auke Bay	3.6	1.5%	137	141	221
Alternative 4B - FVF Berners Bay	3.6	1.6%	161	166	267

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4B vs. 4A		Alternative 4A vs. No Action		Alternative 4B vs. No Action	
Year	Alternative 4A FVF Auke Bay	Alternative 4B FVF Berners Bay	Cost Reduction	Alternative 4A FVF Auke Bay	Alternative 4B FVF Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	116	100	16	196	235	776	4,483	746	8,240	1,372	12,723	2,118
2031	116	100	16	199	239	788	4,553	708	8,351	1,299	12,903	2,007
2032	116	100	16	202	243	801	4,623	672	8,462	1,230	13,086	1,903
2033	116	100	16	205	247	813	4,695	638	8,575	1,165	13,271	1,803
2034	116	100	16	208	251	826	4,768	606	8,690	1,104	13,458	1,709
2035	116	100	16	211	255	839	4,842	575	8,806	1,045	13,648	1,620
2036	116	100	16	214	259	852	4,918	546	8,924	990	13,841	1,535
2037	116	100	16	217	263	865	4,994	518	9,043	937	14,037	1,455
2038	116	100	16	221	267	878	5,072	491	9,164	888	14,236	1,379
Total							125,941	37,107	234,450	69,863	360,391	106,971

TABLE A-XI

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 3 - West Lynn Highway

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4B - FVF Berners Bay	3.6	1.6%	161	166	267
Alternative 3 - West Lynn Highway	2.3	1.8%	305	315	538

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 3 vs. 4B		Alternative 4B vs. No Action		Alternative 3 vs. No Action	
Year	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Cost Reduction	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	100	67	33	166	315	661	8,018	5,913	9,349	6,895	17,367	12,808
2009	100	67	33	169	321	673	8,155	5,621	9,480	6,535	17,635	12,156
2010	100	67	33	171	327	684	8,294	5,343	9,614	6,193	17,908	11,536
2011	100	67	33	174	332	696	8,436	5,079	9,749	5,869	18,186	10,948
2012	100	67	33	177	338	708	8,581	4,828	9,887	5,563	18,467	10,391
2013	100	67	33	180	345	720	8,727	4,589	10,026	5,272	18,753	9,861
2014	100	67	33	183	351	732	8,876	4,362	10,168	4,997	19,044	9,359
2015	100	67	33	186	357	745	9,028	4,147	10,311	4,736	19,339	8,882
2016	100	67	33	189	364	757	9,183	3,942	10,456	4,488	19,639	8,430
2017	100	67	33	192	370	770	9,340	3,747	10,604	4,254	19,943	8,001
2018	100	67	33	195	377	784	9,500	3,562	10,753	4,032	20,253	7,593
2019	100	67	33	198	384	797	9,662	3,385	10,905	3,821	20,567	7,206
2020	100	67	33	201	390	811	9,827	3,218	11,059	3,621	20,886	6,840
2021	100	67	33	204	397	824	9,995	3,059	11,215	3,432	21,210	6,491
2022	100	67	33	207	405	839	10,166	2,908	11,373	3,253	21,540	6,161
2023	100	67	33	211	412	853	10,340	2,764	11,534	3,083	21,874	5,847
2024	100	67	33	214	419	867	10,517	2,627	11,697	2,922	22,214	5,550
2025	100	67	33	217	427	882	10,697	2,498	11,862	2,769	22,559	5,267
2026	100	67	33	221	435	897	10,880	2,374	12,029	2,625	22,910	4,999
2027	100	67	33	224	442	913	11,067	2,257	12,199	2,488	23,266	4,745
2028	100	67	33	228	450	928	11,256	2,145	12,371	2,358	23,627	4,503
2029	100	67	33	232	458	944	11,449	2,039	12,546	2,235	23,995	4,274

TABLE A-XI

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 3 - West Lynn Highway

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 4B - FVF Berners Bay	3.6	1.6%	161	166	267
Alternative 3 - West Lynn Highway	2.3	1.8%	305	315	538

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 3 vs. 4B		Alternative 4B vs. No Action		Alternative 3 vs. No Action	
Year	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Cost Reduction	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	100	67	33	235	467	960	11,645	1,938	12,723	2,118	24,368	4,056
2031	100	67	33	239	475	977	11,844	1,843	12,903	2,007	24,747	3,850
2032	100	67	33	243	484	994	12,047	1,752	13,086	1,903	25,132	3,654
2033	100	67	33	247	492	1,011	12,253	1,665	13,271	1,803	25,523	3,468
2034	100	67	33	251	501	1,028	12,463	1,583	13,458	1,709	25,921	3,292
2035	100	67	33	255	510	1,046	12,676	1,505	13,648	1,620	26,324	3,124
2036	100	67	33	259	519	1,063	12,893	1,430	13,841	1,535	26,735	2,966
2037	100	67	33	263	529	1,082	13,114	1,359	14,037	1,455	27,151	2,815
2038	100	67	33	267	538	1,100	13,338	1,292	14,236	1,379	27,574	2,672
Total							324,268	94,774	360,391	106,971	684,658	201,745

TABLE A-XII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2B - East Lynn Highway to Katzehin

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 3 - West Lynn Highway	2.3	1.8%	305	315	538
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.9%	374	387	680

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2B vs. 3		Alternative 3 vs. No Action		Alternative 2B vs. No Action	
Year	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Cost Reduction	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	67	61	6	315	387	807	1,866	1,376	17,367	12,808	19,232	14,184
2009	67	61	6	321	394	822	1,900	1,310	17,635	12,156	19,536	13,465
2010	67	61	6	327	402	838	1,935	1,247	17,908	11,536	19,844	12,783
2011	67	61	6	332	409	853	1,971	1,187	18,186	10,948	20,157	12,135
2012	67	61	6	338	417	869	2,008	1,130	18,467	10,391	20,475	11,520
2013	67	61	6	345	425	885	2,045	1,075	18,753	9,861	20,799	10,937
2014	67	61	6	351	433	901	2,083	1,024	19,044	9,359	21,127	10,383
2015	67	61	6	357	441	918	2,122	974	19,339	8,882	21,461	9,857
2016	67	61	6	364	450	935	2,161	928	19,639	8,430	21,800	9,358
2017	67	61	6	370	458	953	2,201	883	19,943	8,001	22,145	8,884
2018	67	61	6	377	467	970	2,242	841	20,253	7,593	22,495	8,434
2019	67	61	6	384	476	988	2,284	800	20,567	7,206	22,851	8,007
2020	67	61	6	390	485	1,007	2,326	762	20,886	6,840	23,212	7,601
2021	67	61	6	397	494	1,025	2,369	725	21,210	6,491	23,580	7,216
2022	67	61	6	405	503	1,044	2,413	690	21,540	6,161	23,953	6,851
2023	67	61	6	412	513	1,064	2,458	657	21,874	5,847	24,332	6,504
2024	67	61	6	419	523	1,083	2,504	625	22,214	5,550	24,717	6,175
2025	67	61	6	427	533	1,103	2,550	595	22,559	5,267	25,109	5,862
2026	67	61	6	435	543	1,124	2,597	567	22,910	4,999	25,507	5,566
2027	67	61	6	442	553	1,145	2,645	539	23,266	4,745	25,911	5,284
2028	67	61	6	450	564	1,166	2,695	514	23,627	4,503	26,322	5,017
2029	67	61	6	458	574	1,188	2,745	489	23,995	4,274	26,739	4,763

TABLE A-XII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2B - East Lynn Highway to Katzehin

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 3 - West Lynn Highway	2.3	1.8%	305	315	538
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.9%	374	387	680

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2B vs. 3		Alternative 3 vs. No Action		Alternative 2B vs. No Action	
Year	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Cost Reduction	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	67	61	6	467	585	1,210	2,795	465	24,368	4,056	27,163	4,522
2031	67	61	6	475	596	1,232	2,847	443	24,747	3,850	27,594	4,293
2032	67	61	6	484	608	1,255	2,900	422	25,132	3,654	28,032	4,076
2033	67	61	6	492	619	1,278	2,954	401	25,523	3,468	28,477	3,870
2034	67	61	6	501	631	1,302	3,009	382	25,921	3,292	28,930	3,674
2035	67	61	6	510	643	1,326	3,065	364	26,324	3,124	29,389	3,488
2036	67	61	6	519	655	1,351	3,122	346	26,735	2,966	29,856	3,312
2037	67	61	6	529	668	1,376	3,179	330	27,151	2,815	30,331	3,144
2038	67	61	6	538	680	1,401	3,238	314	27,574	2,672	30,813	2,985
Total							77,230	22,404	684,658	201,745	761,889	224,149

TABLE A-XIII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2A - East Lynn Highway with Berners Shuttle

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.9%	374	387	680
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.9%	376	389	684

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2A vs. 2B		Alternative 2B vs. No Action		Alternative 2A vs. No Action	
Year	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Cost Reduction	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	61	58	3	387	389	892	855	631	19,232	14,184	20,087	14,815
2009	61	58	3	394	396	909	871	600	19,536	13,465	20,407	14,066
2010	61	58	3	402	404	926	888	572	19,844	12,783	20,732	13,355
2011	61	58	3	409	412	944	905	545	20,157	12,135	21,062	12,680
2012	61	58	3	417	419	962	922	519	20,475	11,520	21,397	12,039
2013	61	58	3	425	427	980	939	494	20,799	10,937	21,738	11,431
2014	61	58	3	433	435	999	957	470	21,127	10,383	22,084	10,853
2015	61	58	3	441	444	1,018	975	448	21,461	9,857	22,436	10,305
2016	61	58	3	450	452	1,037	994	427	21,800	9,358	22,794	9,784
2017	61	58	3	458	461	1,057	1,013	406	22,145	8,884	23,157	9,290
2018	61	58	3	467	469	1,077	1,032	387	22,495	8,434	23,527	8,821
2019	61	58	3	476	478	1,097	1,052	368	22,851	8,007	23,902	8,375
2020	61	58	3	485	487	1,118	1,072	351	23,212	7,601	24,284	7,952
2021	61	58	3	494	497	1,139	1,092	334	23,580	7,216	24,671	7,551
2022	61	58	3	503	506	1,161	1,113	318	23,953	6,851	25,065	7,169
2023	61	58	3	513	516	1,183	1,134	303	24,332	6,504	25,466	6,807
2024	61	58	3	523	526	1,206	1,155	289	24,717	6,175	25,873	6,464
2025	61	58	3	533	536	1,229	1,177	275	25,109	5,862	26,286	6,137
2026	61	58	3	543	546	1,252	1,200	262	25,507	5,566	26,707	5,827
2027	61	58	3	553	556	1,276	1,222	249	25,911	5,284	27,134	5,533
2028	61	58	3	564	567	1,300	1,246	237	26,322	5,017	27,568	5,254
2029	61	58	3	574	577	1,325	1,269	226	26,739	4,763	28,009	4,989
2030	61	58	3	585	588	1,350	1,294	215	27,163	4,522	28,457	4,737

TABLE A-XIII

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2A - East Lynn Highway with Berners Shuttle

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.9%	374	387	680
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.9%	376	389	684

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2A vs. 2B		Alternative 2B vs. No Action		Alternative 2A vs. No Action	
Year	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Cost Reduction	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	61	58	3	596	600	1,375	1,318	205	27,594	4,293	28,913	4,498
2032	61	58	3	608	611	1,402	1,343	195	28,032	4,076	29,376	4,271
2033	61	58	3	619	623	1,428	1,369	186	28,477	3,870	29,846	4,056
2034	61	58	3	631	634	1,455	1,395	177	28,930	3,674	30,324	3,851
2035	61	58	3	643	646	1,483	1,421	169	29,389	3,488	30,810	3,657
2036	61	58	3	655	659	1,511	1,448	161	29,856	3,312	31,304	3,472
2037	61	58	3	668	671	1,540	1,476	153	30,331	3,144	31,806	3,297
2038	61	58	3	680	684	1,569	1,504	146	30,813	2,985	32,316	3,131
Total							35,649	10,318	761,889	224,149	797,538	234,467

TABLE A-XIV

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2C - East Lynn Highway without Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.9%	376	389	684
Alternative 2C - East Lynn without Katzehin	2.3	1.9%	404	418	735

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2C vs. 2A		Alternative 2A vs. No Action		Alternative 2C vs. No Action	
Year	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Cost Reduction	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	58	50	8	389	418	928	2,743	2,023	20,087	14,815	22,830	16,838
2009	58	50	8	396	426	945	2,795	1,927	20,407	14,066	23,202	15,992
2010	58	50	8	404	434	963	2,848	1,835	20,732	13,355	23,580	15,190
2011	58	50	8	412	442	982	2,902	1,747	21,062	12,680	23,964	14,427
2012	58	50	8	419	451	1,000	2,957	1,664	21,397	12,039	24,354	13,703
2013	58	50	8	427	459	1,019	3,014	1,585	21,738	11,431	24,751	13,015
2014	58	50	8	435	468	1,039	3,071	1,509	22,084	10,853	25,155	12,362
2015	58	50	8	444	477	1,058	3,129	1,437	22,436	10,305	25,565	11,742
2016	58	50	8	452	486	1,079	3,189	1,369	22,794	9,784	25,983	11,153
2017	58	50	8	461	495	1,099	3,249	1,303	23,157	9,290	26,407	10,593
2018	58	50	8	469	504	1,120	3,311	1,241	23,527	8,821	26,838	10,062
2019	58	50	8	478	514	1,141	3,374	1,182	23,902	8,375	27,276	9,557
2020	58	50	8	487	524	1,163	3,438	1,126	24,284	7,952	27,722	9,078
2021	58	50	8	497	534	1,185	3,503	1,072	24,671	7,551	28,175	8,623
2022	58	50	8	506	544	1,208	3,570	1,021	25,065	7,169	28,635	8,190
2023	58	50	8	516	554	1,230	3,638	972	25,466	6,807	29,104	7,780
2024	58	50	8	526	565	1,254	3,707	926	25,873	6,464	29,580	7,390
2025	58	50	8	536	575	1,278	3,777	882	26,286	6,137	30,064	7,019
2026	58	50	8	546	586	1,302	3,849	840	26,707	5,827	30,556	6,667
2027	58	50	8	556	598	1,327	3,922	800	27,134	5,533	31,056	6,333
2028	58	50	8	567	609	1,352	3,997	762	27,568	5,254	31,564	6,016
2029	58	50	8	577	620	1,378	4,073	725	28,009	4,989	32,081	5,714

TABLE A-XIV

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2C - East Lynn Highway without Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.9%	376	389	684
Alternative 2C - East Lynn without Katzehin	2.3	1.9%	404	418	735

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2C vs. 2A		Alternative 2A vs. No Action		Alternative 2C vs. No Action	
Year	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Cost Reduction	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	58	50	8	588	632	1,404	4,150	691	28,457	4,737	32,607	5,428
2031	58	50	8	600	644	1,430	4,229	658	28,913	4,498	33,141	5,156
2032	58	50	8	611	656	1,458	4,309	627	29,376	4,271	33,685	4,898
2033	58	50	8	623	669	1,485	4,391	597	29,846	4,056	34,237	4,652
2034	58	50	8	634	682	1,514	4,474	568	30,324	3,851	34,799	4,419
2035	58	50	8	646	695	1,542	4,559	541	30,810	3,657	35,370	4,198
2036	58	50	8	659	708	1,572	4,646	515	31,304	3,472	35,950	3,988
2037	58	50	8	671	721	1,601	4,734	491	31,806	3,297	36,541	3,788
2038	58	50	8	684	735	1,632	4,824	467	32,316	3,131	37,141	3,598
Total							114,373	33,103	797,538	234,467	911,911	267,571

TABLE A-XV

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2 - East Lynn Highway with Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 2C - East Lynn without Katzehin	2.3	1.9%	404	418	735
Alternative 2 - East Lynn with Katzehin Terminal	2.3	2.0%	500	518	938

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2 vs. 2C		Alternative 2C vs. No Action		Alternative 2 vs. No Action	
Year	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Cost Reduction	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	156	156	0	91	91	328	0	0	0	0	0	0
2005	156	156	0	91	91	329	0	0	0	0	0	0
2006	156	156	0	92	92	331	0	0	0	0	0	0
2007	156	156	0	92	92	333	0	0	0	0	0	0
2008	50	47	3	418	518	1,076	1,300	959	22,830	16,838	24,130	17,796
2009	50	47	3	426	528	1,097	1,325	913	23,202	15,992	24,527	16,906
2010	50	47	3	434	539	1,118	1,351	870	23,580	15,190	24,931	16,060
2011	50	47	3	442	549	1,140	1,378	829	23,964	14,427	25,341	15,256
2012	50	47	3	451	560	1,163	1,405	790	24,354	13,703	25,759	14,493
2013	50	47	3	459	572	1,185	1,432	753	24,751	13,015	26,183	13,768
2014	50	47	3	468	583	1,208	1,460	717	25,155	12,362	26,615	13,080
2015	50	47	3	477	595	1,232	1,489	684	25,565	11,742	27,054	12,426
2016	50	47	3	486	607	1,256	1,392	597	25,983	11,153	27,374	11,750
2017	50	47	3	495	619	1,281	1,419	569	26,407	10,593	27,826	11,163
2018	50	47	3	504	631	1,306	1,447	542	26,838	10,062	28,285	10,604
2019	50	47	3	514	644	1,331	1,475	517	27,276	9,557	28,751	10,074
2020	50	47	3	524	657	1,357	1,504	492	27,722	9,078	29,226	9,570
2021	50	47	3	534	670	1,384	1,533	469	28,175	8,623	29,708	9,092
2022	50	47	3	544	683	1,411	1,563	447	28,635	8,190	30,199	8,637
2023	50	47	3	554	697	1,439	1,594	426	29,104	7,780	30,697	8,206
2024	50	47	3	565	711	1,467	1,625	406	29,580	7,390	31,205	7,796
2025	50	47	3	575	725	1,495	1,657	387	30,064	7,019	31,720	7,406
2026	50	47	3	586	739	1,525	1,689	369	30,556	6,667	32,245	7,036
2027	50	47	3	598	754	1,554	1,722	351	31,056	6,333	32,778	6,684
2028	50	47	3	609	769	1,585	1,756	335	31,564	6,016	33,320	6,350
2029	50	47	3	620	785	1,616	1,790	319	32,081	5,714	33,872	6,033

TABLE A-XV

User Benefits
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2 - East Lynn Highway with Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	3.6	0.5%			
2008-38					
Alternative 2C - East Lynn without Katzehin	2.3	1.9%	404	418	735
Alternative 2 - East Lynn with Katzehin Terminal	2.3	2.0%	500	518	938

	Blended Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2 vs. 2C		Alternative 2C vs. No Action		Alternative 2 vs. No Action	
Year	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Cost Reduction	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	50	47	3	632	800	1,647	1,825	304	32,607	5,428	34,432	5,732
2031	50	47	3	644	816	1,680	1,861	290	33,141	5,156	35,002	5,446
2032	50	47	3	656	833	1,713	1,897	276	33,685	4,898	35,582	5,174
2033	50	47	3	669	849	1,746	1,935	263	34,237	4,652	36,172	4,915
2034	50	47	3	682	866	1,780	1,972	250	34,799	4,419	36,771	4,670
2035	50	47	3	695	884	1,815	2,011	239	35,370	4,198	37,381	4,437
2036	50	47	3	708	901	1,851	2,050	227	35,950	3,988	38,001	4,215
2037	50	47	3	721	919	1,887	2,090	217	36,541	3,788	38,631	4,005
2038	50	47	3	735	938	1,924	2,131	206	37,141	3,598	39,272	3,805
Total							51,080	15,015	911,911	267,571	962,991	282,586

TABLE A-XVI

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4C - Dayboat Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 1 - No Action	2.3	1.25%	38	38	55
Alternative 4C - Dayboat Auke Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)	
Year	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Cost Reduction	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0
2005	43	43	0	38	38	87	0	0
2006	43	43	0	38	38	87	0	0
2007	43	43	0	38	38	87	0	0
2008	43	44	(1)	38	38	87	(34)	(25)
2009	43	44	(1)	38	38	88	(34)	(24)
2010	43	44	(1)	39	39	90	(35)	(22)
2011	43	44	(1)	39	39	91	(35)	(21)
2012	43	44	(1)	40	40	92	(36)	(20)
2013	43	44	(1)	40	40	93	(36)	(19)
2014	43	44	(1)	41	41	94	(37)	(18)
2015	43	44	(1)	41	41	95	(37)	(17)
2016	43	44	(1)	42	42	97	(38)	(16)
2017	43	44	(1)	42	42	98	(38)	(15)
2018	43	44	(1)	43	43	99	(38)	(14)
2019	43	44	(1)	44	44	100	(39)	(14)
2020	43	44	(1)	44	44	101	(39)	(13)
2021	43	44	(1)	45	45	103	(40)	(12)
2022	43	44	(1)	45	45	104	(40)	(12)
2023	43	44	(1)	46	46	105	(41)	(11)
2024	43	44	(1)	46	46	107	(41)	(10)
2025	43	44	(1)	47	47	108	(42)	(10)

TABLE A-XVI

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4C - Dayboat Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 1 - No Action	2.3	1.25%	38	38	55
Alternative 4C - Dayboat Auke Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)	
Year	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Cost Reduction	Alternative 1 No Action	Alternative 4C Dayboat Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04
2026	43	44	(1)	48	48	109	(42)	(9)
2027	43	44	(1)	48	48	111	(43)	(9)
2028	43	44	(1)	49	49	112	(44)	(8)
2029	43	44	(1)	49	49	113	(44)	(8)
2030	43	44	(1)	50	50	115	(45)	(7)
2031	43	44	(1)	51	51	116	(45)	(7)
2032	43	44	(1)	51	51	118	(46)	(7)
2033	43	44	(1)	52	52	119	(46)	(6)
2034	43	44	(1)	52	52	121	(47)	(6)
2035	43	44	(1)	53	53	122	(47)	(6)
2036	43	44	(1)	54	54	124	(48)	(5)
2037	43	44	(1)	54	54	125	(49)	(5)
2038	43	44	(1)	55	55	127	(49)	(5)
Total							(1,276)	(382)

TABLE A-XVII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4D - Dayboat Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4C - Dayboat Auke Bay	2.3	1.25%	38	38	55
Alternative 4D - Dayboat Berners Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4D vs. 4C		Alternative 4C vs. No Action		Alternative 4D vs. No Action	
Year	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Cost Reduction	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	44	44	0	38	38	87	0	0	(34)	(25)	(34)	(25)
2009	44	44	0	38	38	88	0	0	(34)	(24)	(34)	(24)
2010	44	44	0	39	39	90	0	0	(35)	(22)	(35)	(22)
2011	44	44	0	39	39	91	0	0	(35)	(21)	(35)	(21)
2012	44	44	0	40	40	92	0	0	(36)	(20)	(36)	(20)
2013	44	44	0	40	40	93	0	0	(36)	(19)	(36)	(19)
2014	44	44	0	41	41	94	0	0	(37)	(18)	(37)	(18)
2015	44	44	0	41	41	95	0	0	(37)	(17)	(37)	(17)
2016	44	44	0	42	42	97	0	0	(38)	(16)	(38)	(16)
2017	44	44	0	42	42	98	0	0	(38)	(15)	(38)	(15)
2018	44	44	0	43	43	99	0	0	(38)	(14)	(38)	(14)
2019	44	44	0	44	44	100	0	0	(39)	(14)	(39)	(14)
2020	44	44	0	44	44	101	0	0	(39)	(13)	(39)	(13)
2021	44	44	0	45	45	103	0	0	(40)	(12)	(40)	(12)
2022	44	44	0	45	45	104	0	0	(40)	(12)	(40)	(12)
2023	44	44	0	46	46	105	0	0	(41)	(11)	(41)	(11)
2024	44	44	0	46	46	107	0	0	(41)	(10)	(41)	(10)
2025	44	44	0	47	47	108	0	0	(42)	(10)	(42)	(10)
2026	44	44	0	48	48	109	0	0	(42)	(9)	(42)	(9)
2027	44	44	0	48	48	111	0	0	(43)	(9)	(43)	(9)
2028	44	44	0	49	49	112	0	0	(44)	(8)	(44)	(8)
2029	44	44	0	49	49	113	0	0	(44)	(8)	(44)	(8)
2030	44	44	0	50	50	115	0	0	(45)	(7)	(45)	(7)

TABLE A-XVII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4D - Dayboat Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4C - Dayboat Auke Bay	2.3	1.25%	38	38	55
Alternative 4D - Dayboat Berners Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4D vs. 4C		Alternative 4C vs. No Action		Alternative 4D vs. No Action	
Year	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Cost Reduction	Alternative 4C Dayboat Auke Bay	Alternative 4D Dayboat Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	44	44	0	51	51	116	0	0	(45)	(7)	(45)	(7)
2032	44	44	0	51	51	118	0	0	(46)	(7)	(46)	(7)
2033	44	44	0	52	52	119	0	0	(46)	(6)	(46)	(6)
2034	44	44	0	52	52	121	0	0	(47)	(6)	(47)	(6)
2035	44	44	0	53	53	122	0	0	(47)	(6)	(47)	(6)
2036	44	44	0	54	54	124	0	0	(48)	(5)	(48)	(5)
2037	44	44	0	54	54	125	0	0	(49)	(5)	(49)	(5)
2038	44	44	0	55	55	127	0	0	(49)	(5)	(49)	(5)
Total							0	0	(1,276)	(382)	(1,276)	(382)

TABLE A-XVIII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4A - FVF Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4D - Dayboat Berners Bay	2.3	1.25%	38	38	55
Alternative 4A - FVF Auke Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4A vs. 4D		Alternative 4D vs. No Action		Alternative 4A vs. No Action	
Year	Alternative 4D Dayboat Berners Bay	Alternative 4A FVF Auke Bay	Cost Reduction	Alternative 4D Dayboat Berners Bay	Alternative 4A FVF Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	44	44	0	38	38	87	0	0	(34)	(25)	(34)	(25)
2009	44	44	0	38	38	88	0	0	(34)	(24)	(34)	(24)
2010	44	44	0	39	39	90	0	0	(35)	(22)	(35)	(22)
2011	44	44	0	39	39	91	0	0	(35)	(21)	(35)	(21)
2012	44	44	0	40	40	92	0	0	(36)	(20)	(36)	(20)
2013	44	44	0	40	40	93	0	0	(36)	(19)	(36)	(19)
2014	44	44	0	41	41	94	0	0	(37)	(18)	(37)	(18)
2015	44	44	0	41	41	95	0	0	(37)	(17)	(37)	(17)
2016	44	44	0	42	42	97	0	0	(38)	(16)	(38)	(16)
2017	44	44	0	42	42	98	0	0	(38)	(15)	(38)	(15)
2018	44	44	0	43	43	99	0	0	(38)	(14)	(38)	(14)
2019	44	44	0	44	44	100	0	0	(39)	(14)	(39)	(14)
2020	44	44	0	44	44	101	0	0	(39)	(13)	(39)	(13)
2021	44	44	0	45	45	103	0	0	(40)	(12)	(40)	(12)
2022	44	44	0	45	45	104	0	0	(40)	(12)	(40)	(12)
2023	44	44	0	46	46	105	0	0	(41)	(11)	(41)	(11)
2024	44	44	0	46	46	107	0	0	(41)	(10)	(41)	(10)
2025	44	44	0	47	47	108	0	0	(42)	(10)	(42)	(10)
2026	44	44	0	48	48	109	0	0	(42)	(9)	(42)	(9)
2027	44	44	0	48	48	111	0	0	(43)	(9)	(43)	(9)
2028	44	44	0	49	49	112	0	0	(44)	(8)	(44)	(8)
2029	44	44	0	49	49	113	0	0	(44)	(8)	(44)	(8)

TABLE A-XVIII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4A - FVF Auke Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4D - Dayboat Berners Bay	2.3	1.25%	38	38	55
Alternative 4A - FVF Auke Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4A vs. 4D		Alternative 4D vs. No Action		Alternative 4A vs. No Action	
Year	Alternative 4D Dayboat Berners Bay	Alternative 4A FVF Auke Bay	Cost Reduction	Alternative 4D Dayboat Berners Bay	Alternative 4A FVF Auke Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	44	44	0	50	50	115	0	0	(45)	(7)	(45)	(7)
2031	44	44	0	51	51	116	0	0	(45)	(7)	(45)	(7)
2032	44	44	0	51	51	118	0	0	(46)	(7)	(46)	(7)
2033	44	44	0	52	52	119	0	0	(46)	(6)	(46)	(6)
2034	44	44	0	52	52	121	0	0	(47)	(6)	(47)	(6)
2035	44	44	0	53	53	122	0	0	(47)	(6)	(47)	(6)
2036	44	44	0	54	54	124	0	0	(48)	(5)	(48)	(5)
2037	44	44	0	54	54	125	0	0	(49)	(5)	(49)	(5)
2038	44	44	0	55	55	127	0	0	(49)	(5)	(49)	(5)
Total							0	0	(1,276)	(382)	(1,276)	(382)

TABLE A-XIX

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4B - FVF Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4A - FVF Auke Bay	2.3	1.25%	38	38	55
Alternative 4B - FVF Berners Bay	2.3	1.25%	38	38	55

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 4B vs. 4A		Alternative 4A vs. No Action		Alternative 4B vs. No Action	
Year	Alternative 4A FVF Auke Bay	Alternative 4B FVF Berners Bay	Cost Reduction	Alternative 4A FVF Auke Bay	Alternative 4B FVF Berners Bay	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	44	44	0	38	38	87	0	0	(34)	(25)	(34)	(25)
2009	44	44	0	38	38	88	0	0	(34)	(24)	(34)	(24)
2010	44	44	0	39	39	90	0	0	(35)	(22)	(35)	(22)
2011	44	44	0	39	39	91	0	0	(35)	(21)	(35)	(21)
2012	44	44	0	40	40	92	0	0	(36)	(20)	(36)	(20)
2013	44	44	0	40	40	93	0	0	(36)	(19)	(36)	(19)
2014	44	44	0	41	41	94	0	0	(37)	(18)	(37)	(18)
2015	44	44	0	41	41	95	0	0	(37)	(17)	(37)	(17)
2016	44	44	0	42	42	97	0	0	(38)	(16)	(38)	(16)
2017	44	44	0	42	42	98	0	0	(38)	(15)	(38)	(15)
2018	44	44	0	43	43	99	0	0	(38)	(14)	(38)	(14)
2019	44	44	0	44	44	100	0	0	(39)	(14)	(39)	(14)
2020	44	44	0	44	44	101	0	0	(39)	(13)	(39)	(13)
2021	44	44	0	45	45	103	0	0	(40)	(12)	(40)	(12)
2022	44	44	0	45	45	104	0	0	(40)	(12)	(40)	(12)
2023	44	44	0	46	46	105	0	0	(41)	(11)	(41)	(11)
2024	44	44	0	46	46	107	0	0	(41)	(10)	(41)	(10)
2025	44	44	0	47	47	108	0	0	(42)	(10)	(42)	(10)
2026	44	44	0	48	48	109	0	0	(42)	(9)	(42)	(9)
2027	44	44	0	48	48	111	0	0	(43)	(9)	(43)	(9)
2028	44	44	0	49	49	112	0	0	(44)	(8)	(44)	(8)
2029	44	44	0	49	49	113	0	0	(44)	(8)	(44)	(8)
2030	44	44	0	50	50	115	0	0	(45)	(7)	(45)	(7)

TABLE A-XIX

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 4B - FVF Berners Bay

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4A - FVF Auke Bay	2.3	1.25%	38	38	55
Alternative 4B - FVF Berners Bay	2.3	1.25%	38	38	55

Year	Unit User Costs: Alternative 4A FVF Auke Bay	Unit User Costs: Alternative 4B FVF Berners Bay	Cost Reduction	AADT: Alternative 4A FVF Auke Bay	AADT: Alternative 4B FVF Berners Bay	Annual Average Daily Users	Total Annual User Benefits ($000): Alternative 4B vs. 4A: Year of Travel	Alternative 4B vs. 4A: Present Value 1/1/04	Alternative 4A vs. No Action: Year of Travel	Alternative 4A vs. No Action: Present Value 1/1/04	Alternative 4B vs. No Action: Year of Travel	Alternative 4B vs. No Action: Present Value 1/1/04
2031	44	44	0	51	51	116	0	0	(45)	(7)	(45)	(7)
2032	44	44	0	51	51	118	0	0	(46)	(7)	(46)	(7)
2033	44	44	0	52	52	119	0	0	(46)	(6)	(46)	(6)
2034	44	44	0	52	52	121	0	0	(47)	(6)	(47)	(6)
2035	44	44	0	53	53	122	0	0	(47)	(6)	(47)	(6)
2036	44	44	0	54	54	124	0	0	(48)	(5)	(48)	(5)
2037	44	44	0	54	54	125	0	0	(49)	(5)	(49)	(5)
2038	44	44	0	55	55	127	0	0	(49)	(5)	(49)	(5)
Total							0	0	(1,276)	(382)	(1,276)	(382)

TABLE A-XX

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 3 - West Lynn Highway

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4B - FVF Berners Bay	2.3	1.25%	38	38	55
Alternative 3 - West Lynn Highway	2.3	1.50%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 3 vs. 4B		Alternative 4B vs. No Action		Alternative 3 vs. No Action	
Year	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Cost Reduction	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	44	34	10	38	50	101	362	267	(34)	(25)	328	242
2009	44	34	10	38	51	103	367	253	(34)	(24)	332	229
2010	44	34	10	39	52	104	372	239	(35)	(22)	337	217
2011	44	34	10	39	52	105	377	227	(35)	(21)	342	206
2012	44	34	10	40	53	107	382	215	(36)	(20)	347	195
2013	44	34	10	40	54	108	388	204	(36)	(19)	351	185
2014	44	34	10	41	55	110	393	193	(37)	(18)	356	175
2015	44	34	10	41	55	111	398	183	(37)	(17)	361	166
2016	44	34	10	42	56	113	404	173	(38)	(16)	366	157
2017	44	34	10	42	57	115	410	164	(38)	(15)	372	149
2018	44	34	10	43	58	116	415	156	(38)	(14)	377	141
2019	44	34	10	44	59	118	421	148	(39)	(14)	382	134
2020	44	34	10	44	60	119	427	140	(39)	(13)	388	127
2021	44	34	10	45	61	121	433	132	(40)	(12)	393	120
2022	44	34	10	45	62	123	439	126	(40)	(12)	399	114
2023	44	34	10	46	63	125	445	119	(41)	(11)	404	108
2024	44	34	10	46	63	126	451	113	(41)	(10)	410	102
2025	44	34	10	47	64	128	458	107	(42)	(10)	416	97
2026	44	34	10	48	65	130	464	101	(42)	(9)	421	92
2027	44	34	10	48	66	132	470	96	(43)	(9)	427	87
2028	44	34	10	49	67	133	477	91	(44)	(8)	433	83
2029	44	34	10	49	68	135	484	86	(44)	(8)	440	78

TABLE A-XX

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 3 - West Lynn Highway

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.00%			
2008-38					
Alternative 4B - FVF Berners Bay	2.3	1.25%	38	38	55
Alternative 3 - West Lynn Highway	2.3	1.50%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 3 vs. 4B		Alternative 4B vs. No Action		Alternative 3 vs. No Action	
Year	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Cost Reduction	Alternative 4B FVF Berners Bay	Alternative 3 West Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2030	44	34	10	50	69	137	490	82	(45)	(7)	446	74
2031	44	34	10	51	70	139	497	77	(45)	(7)	452	70
2032	44	34	10	51	71	141	504	73	(46)	(7)	458	67
2033	44	34	10	52	73	143	511	69	(46)	(6)	465	63
2034	44	34	10	52	74	145	518	66	(47)	(6)	471	60
2035	44	34	10	53	75	147	526	62	(47)	(6)	478	57
2036	44	34	10	54	76	149	533	59	(48)	(5)	485	54
2037	44	34	10	54	77	151	540	56	(49)	(5)	492	51
2038	44	34	10	55	78	153	548	53	(49)	(5)	499	48
Total							13,903	4,131	(1,276)	(382)	12,627	3,748

TABLE A-XXI

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2B - East Lynn Highway to Katzehin

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 3 - West Lynn Highway	2.3	1.5%	50	50	78
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2B vs. 3		Alternative 3 vs. No Action		Alternative 2B vs. No Action	
Year	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Cost Reduction	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	34	38	(4)	50	50	115	(153)	(113)	328	242	175	129
2009	34	38	(4)	51	51	117	(155)	(107)	332	229	177	122
2010	34	38	(4)	52	52	118	(157)	(101)	337	217	180	116
2011	34	38	(4)	52	52	120	(160)	(96)	342	206	182	110
2012	34	38	(4)	53	53	122	(162)	(91)	347	195	184	104
2013	34	38	(4)	54	54	124	(165)	(87)	351	185	187	98
2014	34	38	(4)	55	55	126	(167)	(82)	356	175	189	93
2015	34	38	(4)	55	55	128	(170)	(78)	361	166	192	88
2016	34	38	(4)	56	56	130	(172)	(74)	366	157	194	83
2017	34	38	(4)	57	57	131	(175)	(70)	372	149	197	79
2018	34	38	(4)	58	58	133	(177)	(66)	377	141	200	75
2019	34	38	(4)	59	59	135	(180)	(63)	382	134	202	71
2020	34	38	(4)	60	60	137	(183)	(60)	388	127	205	67
2021	34	38	(4)	61	61	140	(185)	(57)	393	120	208	64
2022	34	38	(4)	62	62	142	(188)	(54)	399	114	210	60
2023	34	38	(4)	63	63	144	(191)	(51)	404	108	213	57
2024	34	38	(4)	63	63	146	(194)	(48)	410	102	216	54
2025	34	38	(4)	64	64	148	(197)	(46)	416	97	219	51
2026	34	38	(4)	65	65	150	(200)	(44)	421	92	222	48
2027	34	38	(4)	66	66	153	(203)	(41)	427	87	225	46
2028	34	38	(4)	67	67	155	(206)	(39)	433	83	228	43
2029	34	38	(4)	68	68	157	(209)	(37)	440	78	231	41
2030	34	38	(4)	69	69	160	(212)	(35)	446	74	234	39

TABLE A-XXI

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2B - East Lynn Highway to Katzehin

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 3 - West Lynn Highway	2.3	1.5%	50	50	78
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2B vs. 3		Alternative 3 vs. No Action		Alternative 2B vs. No Action	
Year	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Cost Reduction	Alternative 3 West Lynn Highway	Alternative 2B East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	34	38	(4)	70	70	162	(215)	(33)	452	70	237	37
2032	34	38	(4)	71	71	164	(218)	(32)	458	67	240	35
2033	34	38	(4)	73	73	167	(222)	(30)	465	63	243	33
2034	34	38	(4)	74	74	169	(225)	(29)	471	60	246	31
2035	34	38	(4)	75	75	172	(228)	(27)	478	57	250	30
2036	34	38	(4)	76	76	174	(232)	(26)	485	54	253	28
2037	34	38	(4)	77	77	177	(235)	(24)	492	51	256	27
2038	34	38	(4)	78	78	180	(239)	(23)	499	48	260	25
Total							(5,974)	(1,765)	12,627	3,748	6,653	1,983

TABLE A-XXII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2A - East Lynn Highway with Berners Shuttle

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.5%	50	50	78
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2A vs. 2B		Alternative 2B vs. No Action		Alternative 2A vs. No Action	
Year	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Cost Reduction	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	38	31	6	50	50	115	267	197	175	129	442	326
2009	38	31	6	51	51	117	271	187	177	122	449	309
2010	38	31	6	52	52	118	276	177	180	116	455	293
2011	38	31	6	52	52	120	280	168	182	110	462	278
2012	38	31	6	53	53	122	284	160	184	104	468	263
2013	38	31	6	54	54	124	288	151	187	98	475	250
2014	38	31	6	55	55	126	292	144	189	93	482	237
2015	38	31	6	55	55	128	297	136	192	88	489	224
2016	38	31	6	56	56	130	301	129	194	83	496	213
2017	38	31	6	57	57	131	306	123	197	79	503	202
2018	38	31	6	58	58	133	310	116	200	75	510	191
2019	38	31	6	59	59	135	315	110	202	71	517	181
2020	38	31	6	60	60	137	320	105	205	67	525	172
2021	38	31	6	61	61	140	325	99	208	64	532	163
2022	38	31	6	62	62	142	329	94	210	60	540	154
2023	38	31	6	63	63	144	334	89	213	57	547	146
2024	38	31	6	63	63	146	339	85	216	54	555	139
2025	38	31	6	64	64	148	344	80	219	51	563	132
2026	38	31	6	65	65	150	350	76	222	48	571	125
2027	38	31	6	66	66	153	355	72	225	46	580	118
2028	38	31	6	67	67	155	360	69	228	43	588	112
2029	38	31	6	68	68	157	366	65	231	41	596	106
2030	38	31	6	69	69	160	371	62	234	39	605	101

TABLE A-XXII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2A - East Lynn Highway with Berners Shuttle

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 2B - East Lynn Highway to Katzehin	2.3	1.5%	50	50	78
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2A vs. 2B		Alternative 2B vs. No Action		Alternative 2A vs. No Action	
Year	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Cost Reduction	Alternative 2B East Lynn Highway	Alternative 2A East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	38	31	6	70	70	162	377	59	237	37	613	95
2032	38	31	6	71	71	164	382	56	240	35	622	90
2033	38	31	6	73	73	167	388	53	243	33	631	86
2034	38	31	6	74	74	169	394	50	246	31	640	81
2035	38	31	6	75	75	172	400	47	250	30	649	77
2036	38	31	6	76	76	174	406	45	253	28	659	73
2037	38	31	6	77	77	177	412	43	256	27	668	69
2038	38	31	6	78	78	180	418	40	260	25	678	66
Total							10,457	3,090	6,653	1,983	17,110	5,073

TABLE A-XXIII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2C - East Lynn Highway without Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.5%	50	50	78
Alternative 2C - East Lynn without Katzehin	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2C vs. 2A		Alternative 2A vs. No Action		Alternative 2C vs. No Action	
Year	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Cost Reduction	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	31	34	(3)	50	50	115	(115)	(85)	442	326	328	242
2009	31	34	(3)	51	51	117	(116)	(80)	449	309	332	229
2010	31	34	(3)	52	52	118	(118)	(76)	455	293	337	217
2011	31	34	(3)	52	52	120	(120)	(72)	462	278	342	206
2012	31	34	(3)	53	53	122	(122)	(68)	468	263	347	195
2013	31	34	(3)	54	54	124	(124)	(65)	475	250	351	185
2014	31	34	(3)	55	55	126	(125)	(62)	482	237	356	175
2015	31	34	(3)	55	55	128	(127)	(58)	489	224	361	166
2016	31	34	(3)	56	56	130	(129)	(55)	496	213	366	157
2017	31	34	(3)	57	57	131	(131)	(53)	503	202	372	149
2018	31	34	(3)	58	58	133	(133)	(50)	510	191	377	141
2019	31	34	(3)	59	59	135	(135)	(47)	517	181	382	134
2020	31	34	(3)	60	60	137	(137)	(45)	525	172	388	127
2021	31	34	(3)	61	61	140	(139)	(43)	532	163	393	120
2022	31	34	(3)	62	62	142	(141)	(40)	540	154	399	114
2023	31	34	(3)	63	63	144	(143)	(38)	547	146	404	108
2024	31	34	(3)	63	63	146	(145)	(36)	555	139	410	102
2025	31	34	(3)	64	64	148	(148)	(34)	563	132	416	97
2026	31	34	(3)	65	65	150	(150)	(33)	571	125	421	92
2027	31	34	(3)	66	66	153	(152)	(31)	580	118	427	87
2028	31	34	(3)	67	67	155	(154)	(29)	588	112	433	83
2029	31	34	(3)	68	68	157	(157)	(28)	596	106	440	78
2030	31	34	(3)	69	69	160	(159)	(26)	605	101	446	74

TABLE A-XXIII

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2C - East Lynn Highway without Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 2A - East Lynn with Berners Shuttle	2.3	1.5%	50	50	78
Alternative 2C - East Lynn without Katzehin	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2C vs. 2A		Alternative 2A vs. No Action		Alternative 2C vs. No Action	
Year	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Cost Reduction	Alternative 2A East Lynn Highway	Alternative 2C East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	31	34	(3)	70	70	162	(161)	(25)	613	95	452	70
2032	31	34	(3)	71	71	164	(164)	(24)	622	90	458	67
2033	31	34	(3)	73	73	167	(166)	(23)	631	86	465	63
2034	31	34	(3)	74	74	169	(169)	(21)	640	81	471	60
2035	31	34	(3)	75	75	172	(171)	(20)	649	77	478	57
2036	31	34	(3)	76	76	174	(174)	(19)	659	73	485	54
2037	31	34	(3)	77	77	177	(177)	(18)	668	69	492	51
2038	31	34	(3)	78	78	180	(179)	(17)	678	66	499	48
Total							(4,483)	(1,325)	17,110	5,073	12,627	3,748

TABLE A-XXIV

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2 - East Lynn Highway with Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 2C - East Lynn without Katzehin	2.3	1.5%	50	50	78
Alternative 2 - East Lynn with Katzehin Terminal	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2 vs. 2C		Alternative 2C vs. No Action		Alternative 2 vs. No Action	
Year	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Cost Reduction	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2004	43	43	0	38	38	87	0	0	0	0	0	0
2005	43	43	0	38	38	87	0	0	0	0	0	0
2006	43	43	0	38	38	87	0	0	0	0	0	0
2007	43	43	0	38	38	87	0	0	0	0	0	0
2008	34	31	3	50	50	115	141	104	328	242	469	346
2009	34	31	3	51	51	117	143	99	332	229	475	328
2010	34	31	3	52	52	118	145	93	337	217	482	311
2011	34	31	3	52	52	120	147	89	342	206	489	294
2012	34	31	3	53	53	122	149	84	347	195	496	279
2013	34	31	3	54	54	124	152	80	351	185	503	265
2014	34	31	3	55	55	126	154	76	356	175	510	251
2015	34	31	3	55	55	128	156	72	361	166	518	238
2016	34	31	3	56	56	130	129	55	366	157	496	213
2017	34	31	3	57	57	131	131	53	372	149	503	202
2018	34	31	3	58	58	133	133	50	377	141	510	191
2019	34	31	3	59	59	135	135	47	382	134	517	181
2020	34	31	3	60	60	137	137	45	388	127	525	172
2021	34	31	3	61	61	140	139	43	393	120	532	163
2022	34	31	3	62	62	142	141	40	399	114	540	154
2023	34	31	3	63	63	144	143	38	404	108	547	146
2024	34	31	3	63	63	146	145	36	410	102	555	139
2025	34	31	3	64	64	148	148	34	416	97	563	132
2026	34	31	3	65	65	150	150	33	421	92	571	125
2027	34	31	3	66	66	153	152	31	427	87	580	118
2028	34	31	3	67	67	155	154	29	433	83	588	112
2029	34	31	3	68	68	157	157	28	440	78	596	106
2030	34	31	3	69	69	160	159	26	446	74	605	101

TABLE A-XXIV

User Benefits
Haines to Skagway Origin-Destination Traffic
Alternative 2 - East Lynn Highway with Katzehin Terminal

	Users per Vehicle	Annual Growth in AADT	AADT 2004	AADT 2008	AADT 2038
2004-07	2.3	0.0%			
2008-38					
Alternative 2C - East Lynn without Katzehin	2.3	1.5%	50	50	78
Alternative 2 - East Lynn with Katzehin Terminal	2.3	1.5%	50	50	78

	Unit User Costs			AADT			Total Annual User Benefits ($000)					
							Alternative 2 vs. 2C		Alternative 2C vs. No Action		Alternative 2 vs. No Action	
Year	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Cost Reduction	Alternative 2C East Lynn Highway	Alternative 2 East Lynn Highway	Annual Average Daily Users	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04	Year of Travel	Present Value 1/1/04
2031	34	31	3	70	70	162	161	25	452	70	613	95
2032	34	31	3	71	71	164	164	24	458	67	622	90
2033	34	31	3	73	73	167	166	23	465	63	631	86
2034	34	31	3	74	74	169	169	21	471	60	640	81
2035	34	31	3	75	75	172	171	20	478	57	649	77
2036	34	31	3	76	76	174	174	19	485	54	659	73
2037	34	31	3	77	77	177	177	18	492	51	668	69
2038	34	31	3	78	78	180	179	17	499	48	678	66
Total							4,704	1,454	12,627	3,748	17,331	5,202

TABLE A-XXV

Construction Costs (Residual Values)
Alternative 1 - No Action
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork		4	80
Structures		4	60
Other		4	25
Right of Way		1	100
New Vessel			
Steel displacement vessel		2	64
Aluminum fast vessel		2	32
Total	0		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	0	0	0	0	0			2,517	2,517	2,517	2,485	2,434
2005	0	0	0		0			2,517	2,517	2,517	2,421	2,274
2006	0	0	0		0	0		8,517	8,517	8,517	7,979	7,192
2007	0	0	0		0	0		2,517	2,517	2,517	2,297	1,987
2008					0			9,897	9,897	9,897	8,799	7,300
2009					0		0	9,897	9,897	9,897	8,572	6,822
2010					0		0	10,942	10,942	10,942	9,233	7,049
2011					0			2,334	2,334	2,334	1,919	1,405
2012					0			2,334	2,334	2,334	1,869	1,313
2013					0			2,334	2,334	2,334	1,821	1,227
2014					0			2,334	2,334	2,334	1,774	1,147
2015					0		0	8,870	8,870	8,870	6,567	4,074
2016					0			8,870	8,870	8,870	6,398	3,807
2017					0			2,334	2,334	2,334	1,640	936
2018					0		0	2,334	2,334	2,334	1,598	875
2019					0			2,334	2,334	2,334	1,557	818
2020					0			2,334	2,334	2,334	1,517	764
2021					0			2,334	2,334	2,334	1,477	714
2022					0			2,334	2,334	2,334	1,439	668
2023					0		0	2,334	2,334	2,334	1,402	624
2024					0			2,334	2,334	2,334	1,366	583
2025					0			2,334	2,334	2,334	1,331	545
2026					0			2,334	2,334	2,334	1,296	509
2027					0			12,334	12,334	12,334	6,674	2,515
2028					0		0	2,334	2,334	2,334	1,230	445

TABLE A-XXV

Construction Costs (Residual Values)
Alternative 1 - No Action
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork		4	80
Structures		4	60
Other		4	25
Right of Way		1	100
New Vessel			
Steel displacement vessel		2	64
Aluminum fast vessel		2	32
Total	0		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0			2,334	2,334	2,334	1,199	416
2030					0			2,334	2,334	2,334	1,168	389
2031			0		0		0	2,334	2,334	2,334	1,138	363
2032			0		0			13,531	13,531	13,531	6,425	1,967
2033					0			13,531	13,531	13,531	6,259	1,839
2034					0			2,334	2,334	2,334	1,052	296
2035					0			2,334	2,334	2,334	1,025	277
2036					0			2,334	2,334	2,334	998	259
2037					0			2,334	2,334	2,334	973	242
2038	0	0	0	0	0	0		(43,089)	(43,089)	(43,089)	(17,491)	(4,175)
Total	0	0	0	0	0	0	0	112,204	112,204	112,204	87,407	59,901

TABLE A-XXVI

Construction Costs (Residual Values)
Alternative 2 - East Lynn Highway with Katzehin Terminal
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	152,907	4	80
Structures	108,121	4	60
Other	19,157	4	25
Right of Way	526	1	100
New Vessel			
Steel displacement vessel	40,287	2	64
Aluminum fast vessel		2	32
Total	320,998		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38,227	27,030	4,789	526	70,572			2,517	2,517	73,090	72,141	70,658
2005	38,227	27,030	4,789		70,046			2,517	2,517	72,564	69,774	65,561
2006	38,227	27,030	4,789		70,046			8,517	8,517	78,564	73,595	66,338
2007	38,227	27,030	4,789		70,046			2,517	2,517	72,564	66,221	57,263
2008					0			(37,223)	(37,223)	(37,223)	(33,094)	(27,453)
2009					0				0	0	0	0
2010					0			8,425	8,425	8,425	7,109	5,427
2011					0				0	0	0	0
2012					0				0	0	0	0
2013					0				0	0	0	0
2014					0	20,143			20,143	20,143	15,310	9,899
2015					0	20,143			20,143	20,143	14,915	9,252
2016					0			(12,127)	(12,127)	(12,127)	(8,747)	(5,205)
2017					0				0	0	0	0
2018					0		4,029		4,029	4,029	2,758	1,510
2019					0				0	0	0	0
2020					0				0	0	0	0
2021					0				0	0	0	0
2022					0				0	0	0	0
2023					0				0	0	0	0
2024					0				0	0	0	0
2025					0				0	0	0	0
2026					0				0	0	0	0
2027					0				0	0	0	0
2028					0				0	0	0	0

TABLE A-XXVI

Construction Costs (Residual Values)
Alternative 2 - East Lynn Highway with Katzehin Terminal
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	152,907	4	80
Structures	108,121	4	60
Other	19,157	4	25
Right of Way	526	1	100
New Vessel			
Steel displacement vessel	40,287	2	64
Aluminum fast vessel		2	32
Total	320,998		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0				0	0	0	0
2030					0				0	0	0	0
2031			9,578		9,578				0	9,578	4,669	1,490
2032			9,578		9,578				0	9,578	4,548	1,393
2033					0				0	0	0	0
2034					0				0	0	0	0
2035					0				0	0	0	0
2036					0		12,086		12,086	12,086	5,169	1,341
2037					0				0	0	0	0
2038	(93,656)	(52,258)	(14,559)	(363)	(160,836)	(25,809)			(25,809)	(186,645)	(75,764)	(18,083)
Total	59,252	55,862	23,754	163	139,032	14,478	16,115	(24,856)	5,737	144,769	218,603	239,391

TABLE A-XXVII

Construction Costs (Residual Values)
Alternative 2A - East Lynn Highway with Berners Shuttle
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	132,516	4	80
Structures	97,471	4	60
Other	17,898	4	25
Right of Way	526	1	100
New Vessel			
Steel displacement vessel	77,559	2	64
Aluminum fast vessel		2	32
Total	325,970		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	33,129	24,368	4,474	526	62,497			2,517	2,517	65,015	64,171	62,852
2005	33,129	24,368	4,474		61,971			2,517	2,517	64,489	62,010	58,265
2006	33,129	24,368	4,474		61,971	22,962		8,517	31,479	93,451	87,540	78,908
2007	33,129	24,368	4,474		61,971	22,962		2,517	25,479	87,451	79,807	69,011
2008					0			(37,223)	(37,223)	(37,223)	(33,094)	(27,453)
2009					0				0	0	0	0
2010					0		4,592	8,425	13,017	13,017	10,984	8,386
2011					0				0	0	0	0
2012					0				0	0	0	0
2013					0				0	0	0	0
2014					0				0	0	0	0
2015					0				0	0	0	0
2016					0				0	0	0	0
2017					0				0	0	0	0
2018					0				0	0	0	0
2019					0	15,818			15,818	15,818	10,549	5,542
2020					0	15,818			15,818	15,818	10,277	5,180
2021					0			(9,600)	(9,600)	(9,600)	(6,077)	(2,938)
2022					0				0	0	0	0
2023					0		3,164		3,164	3,164	1,900	846
2024					0				0	0	0	0
2025					0				0	0	0	0
2026					0				0	0	0	0
2027					0				0	0	0	0
2028					0		13,777		13,777	13,777	7,263	2,626

TABLE A-XXVII

Construction Costs (Residual Values)
Alternative 2A - East Lynn Highway with Berners Shuttle
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	132,516	4	80
Structures	97,471	4	60
Other	17,898	4	25
Right of Way	526	1	100
New Vessel			
Steel displacement vessel	77,559	2	64
Aluminum fast vessel		2	32
Total	325,970		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0				0	0	0	0
2030					0				0	0	0	0
2031			8,949		8,949				0	8,949	4,362	1,392
2032			8,949		8,949				0	8,949	4,249	1,301
2033					0				0	0	0	0
2034					0				0	0	0	0
2035					0				0	0	0	0
2036					0				0	0	0	0
2037					0				0	0	0	0
2038	(81,166)	(47,111)	(13,602)	(363)	(142,242)	(46,417)			(46,417)	(188,660)	(76,582)	(18,278)
Total	51,350	50,360	22,193	163	124,066	31,142	21,533	(22,329)	30,346	154,412	227,360	245,639

TABLE A-XXVIII

Construction Costs (Residual Values)
Alternative 2B - East Lynn Highway to Katzehin
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	99,504	4	80
Structures	83,891	4	60
Other	14,260	4	25
Right of Way	45	1	100
New Vessel			
Steel displacement vessel	76,067	2	64
Aluminum fast vessel		2	32
Total	273,767		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	24,876	20,973	3,565	45	49,459			2,517	2,517	51,976	51,301	50,247
2005	24,876	20,973	3,565		49,414			2,517	2,517	51,931	49,935	46,919
2006	24,876	20,973	3,565		49,414	24,022		8,517	32,539	81,953	76,770	69,200
2007	24,876	20,973	3,565		49,414	24,022		2,517	26,539	75,953	69,314	59,938
2008					0			(37,223)	(37,223)	(37,223)	(33,094)	(27,453)
2009					0				0	0	0	0
2010					0		4,804	8,425	13,229	13,229	11,163	8,522
2011					0				0	0	0	0
2012					0				0	0	0	0
2013					0				0	0	0	0
2014					0				0	0	0	0
2015					0				0	0	0	0
2016					0				0	0	0	0
2017					0				0	0	0	0
2018					0				0	0	0	0
2019					0				0	0	0	0
2020					0				0	0	0	0
2021					0				0	0	0	0
2022					0				0	0	0	0
2023					0				0	0	0	0
2024					0				0	0	0	0
2025					0				0	0	0	0
2026					0	14,012			14,012	14,012	7,783	3,057
2027					0	14,012		10,000	24,012	24,012	12,993	4,897
2028					0		14,413	(6,063)	8,350	8,350	4,402	1,591

TABLE A-XXVIII

Construction Costs (Residual Values)
Alternative 2B - East Lynn Highway to Katzehin
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	99,504	4	80
Structures	83,891	4	60
Other	14,260	4	25
Right of Way	45	1	100
New Vessel			
Steel displacement vessel	76,067	2	64
Aluminum fast vessel		2	32
Total	273,767		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0				0	0	0	0
2030					0		2,802		2,802	2,802	1,402	467
2031			7,130		7,130				0	7,130	3,475	1,109
2032			7,130		7,130				0	7,130	3,386	1,037
2033					0				0	0	0	0
2034					0				0	0	0	0
2035					0				0	0	0	0
2036					0				0	0	0	0
2037					0				0	0	0	0
2038	(60,946)	(40,547)	(10,838)	(31)	(112,362)	(47,980)			(47,980)	(160,342)	(65,087)	(15,535)
Total	38,558	43,344	17,683	14	99,598	28,088	22,020	(8,792)	41,315	140,913	193,743	203,997

TABLE A-XXIX

Construction Costs (Residual Values)
Alternative 2C - East Lynn Highway without Katzehin Terminal
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	148,607	4	80
Structures	96,884	4	60
Other	18,994	4	25
Right of Way	526	1	100
New Vessel			
Steel displacement vessel	33,800	2	64
Aluminum fast vessel		2	32
Total	298,811		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	37,152	24,221	4,748	526	66,647			2,517	2,517	69,165	68,267	66,864
2005	37,152	24,221	4,748		66,121			2,517	2,517	68,639	66,000	62,014
2006	37,152	24,221	4,748		66,121			8,517	8,517	74,639	69,918	63,024
2007	37,152	24,221	4,748		66,121			2,517	2,517	68,639	62,639	54,166
2008					0			(37,223)	(37,223)	(37,223)	(33,094)	(27,453)
2009					0				0	0	0	0
2010					0			8,425	8,425	8,425	7,109	5,427
2011					0				0	0	0	0
2012					0				0	0	0	0
2013					0				0	0	0	0
2014					0				0	0	0	0
2015					0				0	0	0	0
2016					0	16,900			16,900	16,900	12,190	7,254
2017					0	16,900			16,900	16,900	11,876	6,780
2018					0			(11,116)	(11,116)	(11,116)	(7,610)	(4,168)
2019					0				0	0	0	0
2020					0		3,380		3,380	3,380	2,196	1,107
2021					0				0	0	0	0
2022					0				0	0	0	0
2023					0				0	0	0	0
2024					0				0	0	0	0
2025					0				0	0	0	0
2026					0				0	0	0	0
2027					0				0	0	0	0
2028					0				0	0	0	0

TABLE A-XXIX

Construction Costs (Residual Values)
Alternative 2C - East Lynn Highway without Katzehin Terminal
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	148,607	4	80
Structures	96,884	4	60
Other	18,994	4	25
Right of Way	526	1	100
New Vessel			
Steel displacement vessel	33,800	2	64
Aluminum fast vessel		2	32
Total	298,811		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0				0	0	0	0
2030					0				0	0	0	0
2031			9,497		9,497				0	9,497	4,629	1,478
2032			9,497		9,497				0	9,497	4,509	1,381
2033					0				0	0	0	0
2034					0				0	0	0	0
2035					0				0	0	0	0
2036					0				0	0	0	0
2037					0				0	0	0	0
2038	(91,022)	(46,827)	(14,435)	(363)	(152,647)	(22,709)	10,140		(12,569)	(165,217)	(67,066)	(16,007)
Total	57,585	50,057	23,552	163	131,357	11,091	13,520	(23,845)	766	132,123	201,565	221,867

TABLE A-XXX

Construction Costs (Residual Values)
Alternative 3 - West Lynn Highway
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	55,578	4	80
Structures	142,252	4	60
Other	11,655	4	25
Right of Way	1,255	1	100
New Vessel			
Steel displacement vessel	85,516	2	64
Aluminum fast vessel		2	32
Total	296,256		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	13,894	35,563	2,914	1,255	53,626			2,517	2,517	56,144	55,415	54,276
2005	13,894	35,563	2,914		52,371			2,517	2,517	54,889	52,779	49,591
2006	13,894	35,563	2,914		52,371	29,469		8,517	37,986	90,357	84,643	76,297
2007	13,894	35,563	2,914		52,371	29,469		2,517	31,986	84,357	76,984	66,570
2008					0			(37,223)	(37,223)	(37,223)	(33,094)	(27,453)
2009					0				0	0	0	0
2010					0		5,894	8,425	14,319	14,319	12,082	9,224
2011					0				0	0	0	0
2012					0				0	0	0	0
2013					0				0	0	0	0
2014					0				0	0	0	0
2015					0				0	0	0	0
2016					0				0	0	0	0
2017					0				0	0	0	0
2018					0				0	0	0	0
2019					0				0	0	0	0
2020					0				0	0	0	0
2021					0				0	0	0	0
2022					0				0	0	0	0
2023					0				0	0	0	0
2024					0				0	0	0	0
2025					0				0	0	0	0
2026					0				0	0	0	0
2027					0			10,000	10,000	10,000	5,411	2,039
2028					0	13,289	17,681		30,970	30,970	16,326	5,903

TABLE A-XXX

Construction Costs (Residual Values)
Alternative 3 - West Lynn Highway
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	55,578	4	80
Structures	142,252	4	60
Other	11,655	4	25
Right of Way	1,255	1	100
New Vessel			
Steel displacement vessel	85,516	2	64
Aluminum fast vessel		2	32
Total	296,256		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0	13,289			13,289	13,289	6,825	2,367
2030					0			(5,053)	(5,053)	(5,053)	(2,528)	(841)
2031			5,828		5,828				0	5,828	2,840	907
2032			5,828		5,828		2,658		2,658	8,486	4,029	1,234
2033					0				0	0	0	0
2034					0				0	0	0	0
2035					0				0	0	0	0
2036					0				0	0	0	0
2037					0				0	0	0	0
2038	(34,041)	(68,755)	(8,858)	(866)	(112,521)	(53,230)			(53,230)	(165,751)	(67,283)	(16,059)
Total	21,536	73,497	14,453	389	109,875	32,285	26,233	(7,782)	50,737	160,612	214,430	224,055

TABLE A-XXXI

Construction Costs (Residual Values)
Alternative 4A - FVF Auke Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	553	4	80
Structures	12,412	4	60
Other	34	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel		2	64
Aluminum fast vessel	111,200	2	32
Total	124,200		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	138	3,103	9	0	3,250			2,517	2,517	5,767	5,693	5,576
2005	138	3,103	9		3,250			2,517	2,517	5,767	5,546	5,211
2006	138	3,103	9		3,250	55,600		8,517	64,117	67,367	63,107	56,884
2007	138	3,103	9		3,250	55,600		2,517	58,117	61,367	56,003	48,428
2008					0			(19,737)	(19,737)	(19,737)	(17,547)	(14,556)
2009					0		11,120	968	12,088	12,088	10,470	8,332
2010					0		0	9,393	9,393	9,393	7,926	6,051
2011					0			1,149	1,149	1,149	944	691
2012					0			1,149	1,149	1,149	920	646
2013					0			1,149	1,149	1,149	896	604
2014					0			1,149	1,149	1,149	873	564
2015					0		16,680	7,684	24,364	24,364	18,040	11,190
2016					0			7,684	7,684	7,684	5,543	3,298
2017					0			1,149	1,149	1,149	807	461
2018					0		27,800	1,149	28,949	28,949	19,818	10,853
2019					0			1,149	1,149	1,149	766	402
2020					0			1,149	1,149	1,149	746	376
2021					0			1,149	1,149	1,149	727	352
2022					0			1,149	1,149	1,149	708	329
2023					0		33,360	1,149	34,509	34,509	20,731	9,225
2024					0			1,149	1,149	1,149	672	287
2025					0			1,149	1,149	1,149	655	268
2026					0			1,149	1,149	1,149	638	251
2027					0			11,149	11,149	11,149	6,033	2,274
2028					0		33,360	1,149	34,509	34,509	18,191	6,577

TABLE A-XXXI

Construction Costs (Residual Values)
Alternative 4A - FVF Auke Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	553	4	80
Structures	12,412	4	60
Other	34	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel		2	64
Aluminum fast vessel	111,200	2	32
Total	124,200		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0			1,149	1,149	1,149	590	205
2030					0			1,149	1,149	1,149	575	191
2031			17		17		16,680	1,149	17,829	17,846	8,698	2,776
2032			17		17			1,149	1,149	1,166	553	169
2033					0			1,149	1,149	1,149	531	156
2034					0			1,149	1,149	1,149	518	146
2035					0			1,149	1,149	1,149	504	136
2036					0			1,149	1,149	1,149	491	127
2037					0			1,149	1,149	1,149	479	119
2038	(339)	(5,999)	(26)	0	(6,364)	(3,475)		(15,558)	(19,033)	(25,398)	(10,310)	(2,461)
Total	214	6,413	42	0	6,670	107,725	139,000	45,218	291,943	298,613	231,535	166,139

TABLE A-XXXII

Construction Costs (Residual Values)
Alternative 4B - FVF Berners Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	6,026	4	80
Structures	27,058	4	60
Other	1,115	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel		2	64
Aluminum fast vessel	102,496	2	32
Total	136,696		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	1,507	6,765	279	0	8,550			2,517	2,517	11,067	10,924	10,699
2005	1,507	6,765	279		8,550			2,517	2,517	11,067	10,642	9,999
2006	1,507	6,765	279		8,550	51,248		8,517	59,765	68,315	63,995	57,685
2007	1,507	6,765	279		8,550	51,248		2,517	53,765	62,315	56,869	49,176
2008					0			(19,737)	(19,737)	(19,737)	(17,547)	(14,556)
2009					0		10,250	968	11,218	11,218	9,716	7,732
2010					0		0	9,393	9,393	9,393	7,926	6,051
2011					0			1,149	1,149	1,149	944	691
2012					0			1,149	1,149	1,149	920	646
2013					0			1,149	1,149	1,149	896	604
2014					0			1,149	1,149	1,149	873	564
2015					0		15,374	7,684	23,059	23,059	17,073	10,591
2016					0			7,684	7,684	7,684	5,543	3,298
2017					0			1,149	1,149	1,149	807	461
2018					0		25,624	1,149	26,773	26,773	18,328	10,037
2019					0			1,149	1,149	1,149	766	402
2020					0			1,149	1,149	1,149	746	376
2021					0			1,149	1,149	1,149	727	352
2022					0			1,149	1,149	1,149	708	329
2023					0		30,749	1,149	31,897	31,897	19,162	8,526
2024					0			1,149	1,149	1,149	672	287
2025					0			1,149	1,149	1,149	655	268
2026					0			1,149	1,149	1,149	638	251
2027					0			11,149	11,149	11,149	6,033	2,274
2028					0		30,749	1,149	31,897	31,897	16,815	6,079

TABLE A-XXXII

Construction Costs (Residual Values)
Alternative 4B - FVF Berners Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	6,026	4	80
Structures	27,058	4	60
Other	1,115	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel		2	64
Aluminum fast vessel	102,496	2	32
Total	136,696		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0			1,149	1,149	1,149	590	205
2030					0			1,149	1,149	1,149	575	191
2031			558		558		15,374	1,149	16,523	17,081	8,325	2,657
2032			558		558			1,149	1,149	1,706	810	248
2033					0			1,149	1,149	1,149	531	156
2034					0			1,149	1,149	1,149	518	146
2035					0			1,149	1,149	1,149	504	136
2036					0			1,149	1,149	1,149	491	127
2037					0			1,149	1,149	1,149	479	119
2038	(3,691)	(13,078)	(848)	0	(17,617)	(3,203)		(15,558)	(18,761)	(36,378)	(14,767)	(3,525)
Total	2,335	13,980	1,383	0	17,698	99,293	128,120	45,218	272,631	290,330	232,887	173,284

TABLE A-XXXIII

Construction Costs (Residual Values)
Alternative 4C - Dayboat Auke Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	553	4	80
Structures	12,412	4	60
Other	34	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel	89,209	2	64
Aluminum fast vessel		2	32
Total	102,209		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	138	3,103	9	0	3,250			2,517	2,517	5,767	5,693	5,576
2005	138	3,103	9		3,250			2,517	2,517	5,767	5,546	5,211
2006	138	3,103	9		3,250	44,604		8,517	53,122	56,372	52,807	47,600
2007	138	3,103	9		3,250	44,604		2,517	47,122	50,372	45,969	39,751
2008					0			(19,737)	(19,737)	(19,737)	(17,547)	(14,556)
2009					0		0	968	968	968	839	667
2010					0		8,921	9,393	18,314	18,314	15,453	11,798
2011					0			1,149	1,149	1,149	944	691
2012					0			1,149	1,149	1,149	920	646
2013					0			1,149	1,149	1,149	896	604
2014					0			1,149	1,149	1,149	873	564
2015					0		0	7,684	7,684	7,684	5,690	3,529
2016					0			7,684	7,684	7,684	5,543	3,298
2017					0			1,149	1,149	1,149	807	461
2018					0		0	1,149	1,149	1,149	786	431
2019					0			1,149	1,149	1,149	766	402
2020					0			1,149	1,149	1,149	746	376
2021					0			1,149	1,149	1,149	727	352
2022					0			1,149	1,149	1,149	708	329
2023					0		0	1,149	1,149	1,149	690	307
2024					0			1,149	1,149	1,149	672	287
2025					0			1,149	1,149	1,149	655	268
2026					0			1,149	1,149	1,149	638	251
2027					0			11,149	11,149	11,149	6,033	2,274
2028					0		26,763	1,149	27,911	27,911	14,714	5,320

TABLE A-XXXIII

Construction Costs (Residual Values)
Alternative 4C - Dayboat Auke Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	553	4	80
Structures	12,412	4	60
Other	34	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel	89,209	2	64
Aluminum fast vessel		2	32
Total	102,209		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0			1,149	1,149	1,149	590	205
2030					0			1,149	1,149	1,149	575	191
2031			17		17		0	1,149	1,149	1,166	568	181
2032			17		17			1,149	1,149	1,166	553	169
2033					0			1,149	1,149	1,149	531	156
2034					0			1,149	1,149	1,149	518	146
2035					0			1,149	1,149	1,149	504	136
2036					0			1,149	1,149	1,149	491	127
2037					0			1,149	1,149	1,149	479	119
2038	(339)	(5,999)	(26)	0	(6,364)	(45,998)		(15,558)	(61,557)	(67,921)	(27,571)	(6,581)
Total	214	6,413	42	0	6,670	43,211	35,684	45,218	124,112	130,782	128,804	111,286

TABLE A-XXXIV

Construction Costs (Residual Values)
Alternative 4D - Dayboat Berners Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	6,026	4	80
Structures	27,058	4	60
Other	1,115	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel	63,270	2	64
Aluminum fast vessel		2	32
Total	97,470		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	1,507	6,765	279	0	8,550			2,517	2,517	11,067	10,924	10,699
2005	1,507	6,765	279		8,550			2,517	2,517	11,067	10,642	9,999
2006	1,507	6,765	279		8,550	31,635		8,517	40,152	48,702	45,622	41,124
2007	1,507	6,765	279		8,550	31,635		2,517	34,152	42,702	38,970	33,698
2008					0			(19,737)	(19,737)	(19,737)	(17,547)	(14,556)
2009					0		0	968	968	968	839	667
2010					0		6,327	9,393	15,720	15,720	13,265	10,127
2011					0			1,149	1,149	1,149	944	691
2012					0			1,149	1,149	1,149	920	646
2013					0			1,149	1,149	1,149	896	604
2014					0			1,149	1,149	1,149	873	564
2015					0		0	7,684	7,684	7,684	5,690	3,529
2016					0			7,684	7,684	7,684	5,543	3,298
2017					0			1,149	1,149	1,149	807	461
2018					0		0	1,149	1,149	1,149	786	431
2019					0			1,149	1,149	1,149	766	402
2020					0			1,149	1,149	1,149	746	376
2021					0			1,149	1,149	1,149	727	352
2022					0			1,149	1,149	1,149	708	329
2023					0		0	1,149	1,149	1,149	690	307
2024					0			1,149	1,149	1,149	672	287
2025					0			1,149	1,149	1,149	655	268
2026					0			1,149	1,149	1,149	638	251
2027					0			11,149	11,149	11,149	6,033	2,274
2028					0		18,981	1,149	20,130	20,130	10,611	3,836

TABLE A-XXXIV

Construction Costs (Residual Values)
Alternative 4D - Dayboat Berners Bay
($000)

	Acquisition Cost	Construction Period (Years)	Useful Life (Years)
Road & Ferry Terminals			
Earthwork	6,026	4	80
Structures	27,058	4	60
Other	1,115	4	25
Right of Way	0	1	100
New Vessel			
Steel displacement vessel	63,270	2	64
Aluminum fast vessel		2	32
Total	97,470		

	Road & Ferry Terminals					AMHS				Road & AMHS		
Year	Earthwork	Structures	Other	Right of Way	Total	New Vessel Acquisition	New Vessel Refurbishment	Existing Vessel Refurbishment & Replacement	Total	Total	@ State Government Cost of Capital 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2029					0			1,149	1,149	1,149	590	205
2030					0			1,149	1,149	1,149	575	191
2031			558		558		0	1,149	1,149	1,706	832	265
2032			558		558			1,149	1,149	1,706	810	248
2033					0			1,149	1,149	1,149	531	156
2034					0			1,149	1,149	1,149	518	146
2035					0			1,149	1,149	1,149	504	136
2036					0			1,149	1,149	1,149	491	127
2037					0			1,149	1,149	1,149	479	119
2038	(3,691)	(13,078)	(848)	0	(17,617)	(32,624)		(15,558)	(48,182)	(65,799)	(26,710)	(6,375)
Total	2,335	13,980	1,383	0	17,698	30,646	25,308	45,218	101,173	118,871	120,039	105,884

TABLE A-XXXV

Residual Values
Existing Vessels & Their Replacements
(excluding Aurora replacements)
($000)

Vessel	Event	Year	Cost ($ 2004)	Remaining Life	Residual Value	% of Time in Lynn Canal	Lynn Canal Residual Value					
							Alt 1	Alt 2	Alt 2A	Alt 2B	Alt 2C	Alt 3	Alt's 4A-4D
Columbia	Built	1974	113,666										
	Removed from Lynn Canal	2008		45.3%	1,000	11.5%		(115)	(115)	(115)	(115)	(115)	
Replacement	Built	2017	**113,666**										
	End of Study	2038		65.6%	74,593	11.5%	(8,578)						(8,578)
Kennicott	Built	1998	125,363										
	Removed from Lynn Canal	2008		82.8%	103,816	15.8%		(16,403)	(16,403)	(16,403)	(16,403)	(16,403)	
	End of Study	2038		35.9%	45,052	15.8%	(7,118)						(7,118)
Matanuska	Built	1963	120,000										
	Removed from Lynn Canal	2008		28.1%	500	12.3%		(62)	(62)	(62)	(62)	(62)	(62)
Replacement	Built	2010	**120,000**										
	End of Study	2038		54.7%	65,625	12.3%	(8,072)						
Fairweather	Built	2004	38,000										
	Removed from Lynn Canal	2008		92.2%	35,031	58.9%		(20,644)	(20,644)	(20,644)	(20,644)	(20,644)	(20,644)
Replacement	Built	2034	**38,000**										
	End of Study	2038		92.2%	35,031	58.9%	(20,644)						

TABLE A-XXXV

Residual Values
Existing Vessels & Their Replacements
(excluding Aurora replacements)
($000)

Vessel	Event	Year	Cost ($ 2004)	Remaining Life	Residual Value	% of Time in Lynn Canal	Lynn Canal Residual Value: Alt 1	Alt 2	Alt 2A	Alt 2B	Alt 2C	Alt 3	Alt's 4A-4D
Aurora	Built	1977	32,338										
	Removed from Lynn Canal	2016		37.5%	12,127	100.0%		(12,127)					
		2018		34.4%	11,116	100.0%					(11,116)		
		2021		29.7%	9,600	100.0%			(9,600)				
		2028		18.8%	6,063	100.0%				(6,063)			
		2030		15.6%	5,053	100.0%						(5,053)	
	End of Study	2038		3.1%	1,011	100.0%	(1,011)						(1,011)

Total	Lynn Canal Replacement and (Residual) Value: Alt 1	Alt 2	Alt 2A	Alt 2B	Alt 2C	Alt 3	Alt's 4A-4D
2008	**7,380**	**(37,223)**	**(37,223)**	**(37,223)**	**(37,223)**	**(37,223)**	**(20,705)**
2009	**7,380**						
2015	**6,536**						**6,536**
2016	**6,536**	**(12,127)**					**6,536**
2018					**(11,116)**		
2021			**(9,600)**				
2028				**(6,063)**			
2030						**(5,053)**	
2032	**11,197**						
2033	**11,197**						
2038	**(45,423)**						**(16,707)**

TABLE A-XXXVI

Operations & Maintenance
Alternative 1 - No Action
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008			0	1,050	302	290	257	1,899	8,786	10,685	10,685	8,578	7,880
2009			0	1,050	302	290	257	1,899	8,786	10,685	10,685	8,170	7,365
2010			0	1,050	302	290	257	1,899	8,786	10,685	10,685	7,781	6,883
2011			0	1,050	302	290	257	1,899	8,786	10,685	10,685	7,410	6,433
2012			0	1,050	302	290	257	1,899	8,786	10,685	10,685	7,057	6,012
2013			0	1,050	302	290	257	1,899	8,786	10,685	10,685	6,721	5,618
2014			0	1,050	302	290	257	1,899	8,786	10,685	10,685	6,401	5,251
2015			0	1,050	302	290	257	1,899	8,786	10,685	10,685	6,097	4,907
2016			0	1,050	302	290	257	1,899	8,786	10,685	10,685	5,806	4,586
2017			0	1,050	302	290	257	1,899	8,786	10,685	10,685	5,530	4,286
2018			0	1,050	302	290	257	1,899	8,786	10,685	10,685	5,266	4,006
2019			0	1,050	302	290	257	1,899	8,786	10,685	10,685	5,016	3,744
2020			0	1,050	302	290	257	1,899	8,786	10,685	10,685	4,777	3,499
2021			0	1,050	302	290	257	1,899	8,786	10,685	10,685	4,549	3,270
2022			0	1,050	302	290	257	1,899	8,786	10,685	10,685	4,333	3,056
2023			0	1,050	302	290	257	1,899	8,786	10,685	10,685	4,126	2,856
2024			0	1,050	302	290	257	1,899	8,786	10,685	10,685	3,930	2,669
2025			0	1,050	302	290	257	1,899	8,786	10,685	10,685	3,743	2,495
2026			0	1,050	302	290	257	1,899	8,786	10,685	10,685	3,565	2,331
2027			0	1,050	302	290	257	1,899	8,786	10,685	10,685	3,395	2,179
2028			0	1,050	302	290	257	1,899	8,786	10,685	10,685	3,233	2,036
2029			0	1,050	302	290	257	1,899	8,786	10,685	10,685	3,079	1,903
2030			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,933	1,779
2031			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,793	1,662
2032			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,660	1,554
2033			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,533	1,452
2034			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,413	1,357
2035			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,298	1,268
2036			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,188	1,185
2037			0	1,050	302	290	257	1,899	8,786	10,685	10,685	2,084	1,108
2038			0	1,050	302	290	257	1,899	8,786	10,685	10,685	1,985	1,035
Total	0	0	0	36,753	10,564	10,161	8,981	66,458	307,503	373,961	373,961	179,272	143,101

TABLE A-XXXVII

Operations & Maintenance
Alternative 2 - East Lynn Highway with Katzehin Terminal
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	3,549	3,260
2009	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	3,380	3,047
2010	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	3,219	2,848
2011	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	3,066	2,661
2012	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	2,920	2,487
2013	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	2,781	2,325
2014	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	2,648	2,172
2015	784	757	1,541	1,798	478	347	257	2,880	0	2,880	4,421	2,522	2,030
2016	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,936	2,319
2017	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,796	2,167
2018	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,663	2,026
2019	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,536	1,893
2020	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,416	1,769
2021	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,300	1,654
2022	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,191	1,545
2023	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	2,087	1,444
2024	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,987	1,350
2025	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,893	1,261
2026	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,802	1,179
2027	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,717	1,102
2028	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,635	1,030
2029	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,557	962
2030	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,483	899
2031	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,412	841
2032	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,345	786
2033	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,281	734
2034	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,220	686
2035	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,162	641
2036	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,107	599
2037	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,054	560
2038	784	757	1,541	2,400	733	473	257	3,862	0	3,862	5,403	1,004	523
Total	24,311	23,463	47,774	73,774	21,896	14,804	8,981	119,454	35,143	154,598	202,372	104,492	86,239

TABLE A-XXXVIII

Operations & Maintenance
Alternative 2A - East Lynn Highway with Berners Shuttle
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	6,758	6,208
2009	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	6,436	5,802
2010	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	6,130	5,422
2011	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	5,838	5,068
2012	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	5,560	4,736
2013	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	5,295	4,426
2014	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	5,043	4,137
2015	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	4,803	3,866
2016	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	4,574	3,613
2017	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	4,356	3,377
2018	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	4,149	3,156
2019	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	3,951	2,949
2020	775	757	1,532	4,261	1,016	966	643	6,886	0	6,886	8,418	3,763	2,756
2021	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	3,819	2,745
2022	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	3,637	2,566
2023	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	3,464	2,398
2024	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	3,299	2,241
2025	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	3,142	2,094
2026	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,992	1,957
2027	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,850	1,829
2028	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,714	1,710
2029	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,585	1,598
2030	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,462	1,493
2031	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,345	1,396
2032	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,233	1,304
2033	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,127	1,219
2034	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	2,025	1,139
2035	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	1,929	1,065
2036	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	1,837	995
2037	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	1,750	930
2038	775	757	1,532	4,612	1,157	1,025	643	7,438	0	7,438	8,970	1,666	869
Total	24,022	23,463	47,485	142,603	35,251	32,170	20,974	230,999	35,143	266,142	313,626	152,359	122,501

TABLE A-XXXIX

Operations & Maintenance
Alternative 2B - East Lynn Highway to Katzehin
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	7,241	6,652
2009	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	6,896	6,216
2010	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	6,568	5,810
2011	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	6,255	5,430
2012	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	5,957	5,074
2013	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	5,673	4,742
2014	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	5,403	4,432
2015	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	5,146	4,142
2016	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	4,901	3,871
2017	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	4,668	3,618
2018	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	4,445	3,381
2019	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	4,234	3,160
2020	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	4,032	2,953
2021	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	3,840	2,760
2022	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	3,657	2,580
2023	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	3,483	2,411
2024	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	3,317	2,253
2025	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	3,159	2,106
2026	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	3,009	1,968
2027	582	726	1,309	4,539	1,525	1,010	637	7,710	0	7,710	9,019	2,865	1,839
2028	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,823	1,778
2029	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,689	1,662
2030	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,560	1,553
2031	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,439	1,451
2032	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,322	1,356
2033	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,212	1,268
2034	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,107	1,185
2035	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	2,006	1,107
2036	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	1,911	1,035
2037	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	1,820	967
2038	582	726	1,309	4,738	1,603	1,043	637	8,021	0	8,021	9,329	1,733	904
Total	18,044	22,520	40,564	147,093	49,342	32,826	20,767	250,027	35,143	285,170	325,735	158,194	127,101

TABLE A-XL

Operations & Maintenance
Alternative 2C - East Lynn Highway without Katzehin Terminal
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	3,597	3,304
2009	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	3,425	3,088
2010	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	3,262	2,886
2011	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	3,107	2,697
2012	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	2,959	2,520
2013	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	2,818	2,356
2014	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	2,684	2,201
2015	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	2,556	2,057
2016	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	2,434	1,923
2017	784	757	1,541	1,732	604	347	257	2,938		2,938	4,480	2,318	1,797
2018	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	2,577	1,960
2019	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	2,454	1,832
2020	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	2,338	1,712
2021	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	2,226	1,600
2022	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	2,120	1,496
2023	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	2,019	1,398
2024	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,923	1,306
2025	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,832	1,221
2026	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,744	1,141
2027	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,661	1,066
2028	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,582	997
2029	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,507	931
2030	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,435	870
2031	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,367	813
2032	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,302	760
2033	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,240	711
2034	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,181	664
2035	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,124	621
2036	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,071	580
2037	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	1,020	542
2038	784	757	1,541	2,169	842	421	257	3,688		3,688	5,229	971	507
Total	24,311	23,463	47,774	67,059	24,919	13,461	8,981	114,420	35,143	149,563	197,337	102,678	84,993

TABLE A-XLI

Operations & Maintenance
Alternative 3 - West Lynn Highway
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	7,425	6,821
2009	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	7,072	6,375
2010	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	6,735	5,958
2011	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	6,414	5,568
2012	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	6,109	5,204
2013	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	5,818	4,863
2014	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	5,541	4,545
2015	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	5,277	4,248
2016	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	5,026	3,970
2017	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	4,786	3,710
2018	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	4,559	3,467
2019	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	4,341	3,241
2020	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	4,135	3,029
2021	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	3,938	2,830
2022	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	3,750	2,645
2023	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	3,572	2,472
2024	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	3,402	2,310
2025	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	3,240	2,159
2026	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	3,085	2,018
2027	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	2,938	1,886
2028	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	2,799	1,763
2029	515	741	1,256	4,702	1,626	1,018	647	7,992	0	7,992	9,248	2,665	1,647
2030	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	2,601	1,577
2031	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	2,477	1,474
2032	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	2,359	1,378
2033	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	2,246	1,288
2034	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	2,139	1,203
2035	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	2,038	1,125
2036	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	1,941	1,051
2037	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	1,848	982
2038	515	741	1,256	4,836	1,696	1,040	647	8,219	0	8,219	9,475	1,760	918
Total	15,964	22,975	38,939	151,172	52,244	32,911	21,070	257,397	35,143	292,540	331,479	160,858	129,161

TABLE A-XLII

Operations & Maintenance
Alternative 4A - FVF Auke Bay
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	13,712	12,596
2009	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	13,059	11,772
2010	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	12,438	11,002
2011	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	11,845	10,282
2012	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	11,281	9,610
2013	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	10,744	8,981
2014	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	10,232	8,393
2015	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	9,745	7,844
2016	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	9,281	7,331
2017	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	8,839	6,851
2018	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	8,418	6,403
2019	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	8,017	5,984
2020	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	7,636	5,593
2021	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	7,272	5,227
2022	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	6,926	4,885
2023	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	6,596	4,565
2024	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	6,282	4,267
2025	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	5,983	3,988
2026	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	5,698	3,727
2027	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	5,426	3,483
2028	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	5,168	3,255
2029	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	4,922	3,042
2030	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	4,688	2,843
2031	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	4,464	2,657
2032	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	4,252	2,483
2033	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	4,049	2,321
2034	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	3,856	2,169
2035	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	3,673	2,027
2036	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	3,498	1,894
2037	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	3,331	1,771
2038	0	0	0	5,233	4,806	2,284	805	13,128	3,952	17,079	17,079	3,173	1,655
Total	0	0	0	166,436	150,193	71,953	25,968	414,550	157,641	572,191	572,191	263,328	206,339

TABLE A-XLIII

Operations & Maintenance
Alternative 4B - FVF Berners Bay
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	12,828	11,784
2009	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	12,217	11,013
2010	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	11,635	10,292
2011	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	11,081	9,619
2012	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	10,554	8,990
2013	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	10,051	8,402
2014	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	9,573	7,852
2015	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	9,117	7,338
2016	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	8,683	6,858
2017	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	8,269	6,410
2018	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	7,875	5,990
2019	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	7,500	5,598
2020	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	7,143	5,232
2021	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	6,803	4,890
2022	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	6,479	4,570
2023	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	6,171	4,271
2024	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	5,877	3,992
2025	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	5,597	3,730
2026	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	5,330	3,486
2027	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	5,077	3,258
2028	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	4,835	3,045
2029	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	4,605	2,846
2030	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	4,385	2,660
2031	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	4,176	2,486
2032	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	3,978	2,323
2033	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	3,788	2,171
2034	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	3,608	2,029
2035	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	3,436	1,896
2036	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	3,272	1,772
2037	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	3,117	1,656
2038	19	0	19	4,803	4,259	2,141	805	12,007	3,952	15,959	15,978	2,968	1,548
Total	581	0	581	153,098	133,233	67,518	25,977	379,826	157,641	537,466	538,047	248,850	195,446

TABLE A-XLIV

Operations & Maintenance
Alternative 4C - Dayboat Auke Bay
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	9,701	8,911
2009			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	9,239	8,328
2010			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	8,799	7,783
2011			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	8,380	7,274
2012			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	7,981	6,798
2013			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	7,601	6,353
2014			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	7,239	5,938
2015			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	6,894	5,549
2016			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	6,566	5,186
2017			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	6,253	4,847
2018			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	5,955	4,530
2019			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	5,672	4,234
2020			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	5,402	3,957
2021			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	5,144	3,698
2022			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	4,900	3,456
2023			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	4,666	3,230
2024			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	4,444	3,018
2025			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	4,232	2,821
2026			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	4,031	2,636
2027			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	3,839	2,464
2028			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	3,656	2,303
2029			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	3,482	2,152
2030			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	3,316	2,011
2031			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	3,158	1,880
2032			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	3,008	1,757
2033			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	2,865	1,642
2034			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	2,728	1,534
2035			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	2,598	1,434
2036			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	2,475	1,340
2037			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	2,357	1,253
2038			0	4,203	2,081	1,079	769	8,131	3,952	12,082	12,082	2,245	1,171
Total	0	0	0	134,479	65,709	34,613	24,854	259,654	157,641	417,294	417,294	197,647	156,925

TABLE A-XLV

Operations & Maintenance
Alternative 4D - Dayboat Berners Bay
($000)

	Road			Aurora & New Vessels							Road & AMHS		
Year	Highway Maintenance	Avalanche Control	Total	Crew	Fuel	Maintenance	Layup & Management	Total	Existing Vessel	AMHS Total	Total	Present Value @ State Government Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004			0	1,050	302	290	257	1,899	8,786	10,685	10,685	10,427	10,329
2005			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,931	9,653
2006			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,458	9,022
2007			0	1,050	302	290	257	1,899	8,786	10,685	10,685	9,007	8,432
2008	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	9,421	8,654
2009	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	8,972	8,088
2010	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	8,545	7,559
2011	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	8,138	7,064
2012	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	7,751	6,602
2013	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	7,382	6,170
2014	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	7,030	5,767
2015	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	6,695	5,389
2016	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	6,377	5,037
2017	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	6,073	4,707
2018	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	5,784	4,399
2019	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	5,508	4,112
2020	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	5,246	3,843
2021	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	4,996	3,591
2022	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	4,758	3,356
2023	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	4,532	3,137
2024	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	4,316	2,931
2025	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	4,110	2,740
2026	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	3,915	2,560
2027	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	3,728	2,393
2028	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	3,551	2,236
2029	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	3,382	2,090
2030	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	3,221	1,953
2031	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	3,067	1,826
2032	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,921	1,706
2033	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,782	1,595
2034	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,650	1,490
2035	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,523	1,393
2036	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,403	1,302
2037	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,289	1,216
2038	19	0	19	4,155	1,847	999	764	7,764	3,952	11,715	11,734	2,180	1,137
Total	581	0	581	132,990	58,464	32,126	24,697	248,277	157,641	405,917	406,498	193,069	153,480

TABLE A-XLVI

Operating Costs
Existing AMHS Vessels

	Nominal Dollars (000)										2004 $ (000)			
	Expenditures			All Vessels SE Expenditures			O&M Costs			Total System Management	O&M Costs			Total System Management
Fiscal Year	Columbia	Matanuska	Kennicott	Columbia	Matanuska	Kennicott	Columbia	Matanuska	Kennicott	Costs	Columbia	Matanuska	Kennicott	Costs
1995	9,081			951			10,032				12,178			
1996	11,731			1,362			13,093				15,481			
1997	9,607			1,177			10,784				12,463			
1998	8,470	9,298		1,096	1,203		9,566	10,501		9,143	10,893	11,957		10,411
1999	8,047	6,606	10,365	1,051	863	1,354	9,098	7,469	11,719	10,055	10,237	8,404	13,186	11,314
2000		10,392	11,130		1,308	1,401		11,700	12,531	9,747		13,046	13,972	10,868
2001		7,926	12,974		1,180	2,008		9,106	14,982	12,419		9,888	16,269	13,486
2002		10,780	10,780		1,433	1,433		12,213	12,213	11,043		12,957	12,957	11,716
Average	9,387	9,000	11,312	1,127	1,197	1,549	10,515	10,198	12,861	10,481	12,250	11,250	14,096	11,559

	2004 $ (000)			% of Time in Lynn Canal		Lynn Canal Operating Costs	
	Average O&M Costs	Average Mgmt Costs/Vessel	Total Operating Costs	No Action	Alt's. 4A-D	No Action	Alt's. 4A-D
Columbia	12,250	1,156	13,406	11.5%	11.5%	1,542	1,542
Kennicott	14,096	1,156	15,252	15.8%	15.8%	2,410	2,410
Matanuska	11,250	1,156	12,406	12.3%		1,526	
Fairweather	2,627	1,156	NA	58.9%		3,308	
						8,786	3,952

TABLE A-XLVII

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 1 - No Action
($000)

			Highway Fuel Taxes					AMHS Fares	Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	93	2	1	0	1	336	52	6,433	6,434	5,165	4,745	6,433	5,165	4,744
2009	94	2	1	0	1	340	52	6,503	6,504	4,973	4,483	6,504	4,973	4,483
2010	95	2	1	0	1	344	52	6,575	6,576	4,789	4,236	6,575	4,788	4,236
2011	97	2	1	0	1	347	52	6,647	6,648	4,611	4,002	6,647	4,610	4,002
2012	98	2	1	0	1	351	52	6,720	6,721	4,440	3,782	6,721	4,439	3,781
2013	99	2	1	0	1	355	52	6,794	6,795	4,275	3,573	6,795	4,274	3,573
2014	100	2	1	0	1	359	52	6,869	6,870	4,116	3,376	6,869	4,115	3,376
2015	101	2	1	0	1	363	52	6,944	6,946	3,963	3,190	6,945	3,963	3,190
2016	102	2	1	0	1	367	52	7,021	7,022	3,816	3,014	7,021	3,815	3,014
2017	103	2	1	0	1	371	52	7,098	7,099	3,674	2,848	7,098	3,674	2,848
2018	104	2	1	0	1	375	52	7,176	7,177	3,538	2,691	7,177	3,537	2,691
2019	105	2	1	0	1	379	52	7,255	7,256	3,406	2,543	7,255	3,406	2,542
2020	106	2	1	0	1	383	52	7,335	7,336	3,280	2,402	7,335	3,279	2,402
2021	108	2	1	0	1	388	52	7,416	7,417	3,158	2,270	7,416	3,158	2,270
2022	109	2	1	0	1	392	52	7,497	7,498	3,041	2,145	7,498	3,040	2,144
2023	110	2	1	0	1	396	52	7,580	7,581	2,928	2,026	7,580	2,927	2,026
2024	111	2	1	0	1	401	52	7,663	7,664	2,819	1,915	7,663	2,819	1,914
2025	112	2	1	0	1	405	52	7,747	7,749	2,714	1,809	7,748	2,714	1,809
2026	114	2	1	0	1	409	52	7,833	7,834	2,613	1,709	7,833	2,613	1,709
2027	115	2	1	0	1	414	52	7,919	7,920	2,516	1,615	7,919	2,516	1,615
2028	116	2	1	0	1	418	52	8,006	8,007	2,423	1,526	8,006	2,423	1,526
2029	118	2	1	0	1	423	52	8,094	8,095	2,333	1,442	8,094	2,333	1,442
2030	119	2	1	0	1	428	52	8,183	8,184	2,246	1,362	8,183	2,246	1,362
2031	120	2	1	0	1	432	52	8,273	8,274	2,163	1,287	8,273	2,163	1,287
2032	121	2	1	0	1	437	52	8,364	8,365	2,082	1,216	8,364	2,082	1,216
2033	123	2	1	0	1	442	52	8,456	8,457	2,005	1,149	8,456	2,005	1,149
2034	124	2	1	0	1	447	52	8,549	8,550	1,931	1,086	8,549	1,930	1,086
2035	125	2	1	0	1	452	52	8,643	8,644	1,859	1,026	8,643	1,859	1,026
2036	127	2	1	0	1	457	52	8,738	8,739	1,790	969	8,738	1,790	969
2037	128	2	1	0	1	462	52	8,834	8,836	1,723	916	8,835	1,723	916
2038	130	2	1	0	1	467	52	8,931	8,933	1,659	865	8,932	1,659	865
Total			29	13	42			261,356	261,398	118,993	93,342	261,369	118,979	93,332

TABLE A-XLVIII

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2 - East Lynn Highway with Katzehin Terminal
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	518	89	150	65	216	1,191	4	1,541	1,757	1,410	1,295	1,606	1,290	1,185
2009	528	89	153	67	220	1,214	4	1,572	1,792	1,370	1,235	1,638	1,253	1,129
2010	539	89	156	68	224	1,239	4	1,603	1,827	1,331	1,177	1,671	1,217	1,077
2011	549	89	159	69	229	1,264	4	1,635	1,864	1,293	1,122	1,705	1,182	1,026
2012	560	89	163	71	233	1,289	4	1,668	1,901	1,256	1,070	1,739	1,148	978
2013	572	89	166	72	238	1,315	4	1,701	1,939	1,220	1,020	1,773	1,116	933
2014	583	89	169	74	243	1,341	4	1,735	1,978	1,185	972	1,809	1,084	889
2015	595	89	173	75	248	1,368	4	1,770	2,018	1,151	927	1,845	1,053	847
2016	607	89	176	77	253	1,395	4	1,805	2,058	1,118	883	1,882	1,023	808
2017	619	89	180	78	258	1,423	4	1,842	2,099	1,086	842	1,920	993	770
2018	631	89	183	80	263	1,451	4	1,878	2,141	1,055	803	1,958	965	734
2019	644	89	187	81	268	1,480	4	1,916	2,184	1,025	765	1,997	938	700
2020	657	89	191	83	273	1,510	4	1,954	2,228	996	730	2,037	911	667
2021	670	89	194	85	279	1,540	4	1,993	2,272	967	695	2,078	885	636
2022	683	89	198	86	285	1,571	4	2,033	2,318	940	663	2,119	859	606
2023	697	89	202	88	290	1,603	4	2,074	2,364	913	632	2,162	835	578
2024	711	89	206	90	296	1,635	4	2,115	2,411	887	602	2,205	811	551
2025	725	89	210	92	302	1,667	4	2,158	2,460	862	574	2,249	788	525
2026	739	89	215	93	308	1,701	4	2,201	2,509	837	547	2,294	765	501
2027	754	89	219	95	314	1,735	4	2,245	2,559	813	522	2,340	743	477
2028	769	89	223	97	320	1,769	4	2,290	2,610	790	497	2,387	722	455
2029	785	89	228	99	327	1,805	4	2,335	2,662	767	474	2,435	702	434
2030	800	89	232	101	333	1,841	4	2,382	2,716	745	452	2,483	682	413
2031	816	89	237	103	340	1,878	4	2,430	2,770	724	431	2,533	662	394
2032	833	89	242	105	347	1,915	4	2,478	2,825	703	411	2,584	643	376
2033	849	89	247	107	354	1,953	4	2,528	2,882	683	392	2,635	625	358
2034	866	89	252	109	361	1,993	4	2,579	2,939	664	373	2,688	607	341
2035	884	89	257	112	368	2,032	4	2,630	2,998	645	356	2,742	590	325
2036	901	89	262	114	375	2,073	4	2,683	3,058	626	339	2,796	573	310
2037	919	89	267	116	383	2,114	4	2,736	3,119	608	323	2,852	556	296
2038	938	89	272	118	391	2,157	4	2,791	3,182	591	308	2,909	540	282
Total			6,372	2,771	9,143			90,563	99,706	52,207	43,556	93,333	49,700	41,719

TABLE A-XLIX

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2A - East Lynn Highway with Berners Shuttle
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	389	79	100	43	143	895	10	3,422	3,565	2,863	2,630	3,466	2,783	2,556
2009	396	79	102	44	146	912	10	3,487	3,633	2,778	2,504	3,532	2,700	2,434
2010	404	79	104	45	149	929	10	3,554	3,702	2,696	2,385	3,599	2,621	2,318
2011	412	79	106	46	151	946	10	3,621	3,773	2,616	2,271	3,667	2,543	2,208
2012	419	79	108	47	154	964	10	3,690	3,844	2,539	2,163	3,737	2,468	2,102
2013	427	79	110	48	157	983	10	3,760	3,917	2,464	2,060	3,808	2,395	2,002
2014	435	79	112	49	160	1,001	10	3,831	3,992	2,392	1,962	3,880	2,325	1,907
2015	444	79	114	49	163	1,020	10	3,904	4,068	2,321	1,868	3,954	2,256	1,816
2016	452	79	116	50	166	1,040	10	3,978	4,145	2,252	1,779	4,029	2,189	1,729
2017	461	79	118	51	170	1,060	10	4,054	4,224	2,186	1,694	4,105	2,125	1,647
2018	469	79	120	52	173	1,080	10	4,131	4,304	2,121	1,614	4,183	2,062	1,568
2019	478	79	123	53	176	1,100	10	4,210	4,386	2,059	1,537	4,263	2,001	1,494
2020	487	79	125	54	179	1,121	10	4,290	4,469	1,998	1,463	4,344	1,942	1,422
2021	497	79	127	55	183	1,142	10	4,371	4,554	1,939	1,394	4,426	1,885	1,355
2022	506	79	130	56	186	1,164	10	4,454	4,640	1,882	1,327	4,511	1,829	1,290
2023	516	79	132	58	190	1,186	10	4,539	4,729	1,826	1,264	4,596	1,775	1,229
2024	526	79	135	59	193	1,209	10	4,625	4,818	1,772	1,204	4,684	1,723	1,170
2025	536	79	137	60	197	1,232	10	4,713	4,910	1,720	1,146	4,773	1,672	1,114
2026	546	79	140	61	201	1,255	10	4,802	5,003	1,669	1,092	4,863	1,622	1,061
2027	556	79	143	62	205	1,279	10	4,894	5,098	1,620	1,040	4,956	1,575	1,011
2028	567	79	145	63	209	1,303	10	4,987	5,195	1,572	990	5,050	1,528	962
2029	577	79	148	64	213	1,328	10	5,081	5,294	1,526	943	5,146	1,483	917
2030	588	79	151	66	217	1,353	10	5,178	5,394	1,481	898	5,243	1,439	873
2031	600	79	154	67	221	1,379	10	5,276	5,497	1,437	855	5,343	1,397	831
2032	611	79	157	68	225	1,405	10	5,376	5,601	1,394	814	5,445	1,355	792
2033	623	79	160	69	229	1,432	10	5,479	5,708	1,353	776	5,548	1,315	754
2034	634	79	163	71	234	1,459	10	5,583	5,816	1,313	739	5,653	1,277	718
2035	646	79	166	72	238	1,487	10	5,689	5,927	1,275	703	5,761	1,239	684
2036	659	79	169	73	242	1,515	10	5,797	6,039	1,237	670	5,870	1,202	651
2037	671	79	172	75	247	1,544	10	5,907	6,154	1,200	638	5,982	1,167	620
2038	684	79	175	76	252	1,573	10	6,019	6,271	1,165	608	6,096	1,132	591
Total			4,163	1,810	5,973			167,963	173,935	81,609	65,151	169,773	79,965	63,945

TABLE A-L

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2B - East Lynn Highway to Katzehin
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	387	80	100	43	144	890	10	3,287	3,431	2,754	2,530	3,331	2,674	2,456
2009	394	80	102	44	146	907	10	3,350	3,496	2,673	2,410	3,394	2,595	2,339
2010	402	80	104	45	149	924	10	3,413	3,562	2,594	2,295	3,459	2,519	2,228
2011	409	80	106	46	152	941	10	3,478	3,630	2,518	2,185	3,524	2,444	2,122
2012	417	80	108	47	155	959	10	3,544	3,699	2,443	2,081	3,591	2,372	2,021
2013	425	80	110	48	158	978	10	3,612	3,769	2,371	1,982	3,659	2,302	1,924
2014	433	80	112	49	161	996	10	3,680	3,841	2,301	1,888	3,729	2,234	1,833
2015	441	80	114	50	164	1,015	10	3,750	3,914	2,233	1,798	3,800	2,168	1,745
2016	450	80	116	51	167	1,034	10	3,821	3,988	2,167	1,712	3,872	2,104	1,662
2017	458	80	118	52	170	1,054	10	3,894	4,064	2,103	1,630	3,946	2,042	1,583
2018	467	80	121	52	173	1,074	10	3,968	4,141	2,041	1,553	4,021	1,982	1,507
2019	476	80	123	53	177	1,094	10	4,043	4,220	1,981	1,479	4,097	1,923	1,436
2020	485	80	125	55	180	1,115	10	4,120	4,300	1,922	1,408	4,175	1,866	1,367
2021	494	80	128	56	183	1,136	10	4,199	4,382	1,866	1,341	4,254	1,811	1,302
2022	503	80	130	57	187	1,158	10	4,278	4,465	1,811	1,277	4,335	1,758	1,240
2023	513	80	133	58	190	1,180	10	4,360	4,550	1,757	1,216	4,417	1,706	1,181
2024	523	80	135	59	194	1,202	10	4,442	4,636	1,705	1,158	4,501	1,656	1,125
2025	533	80	138	60	198	1,225	10	4,527	4,724	1,655	1,103	4,587	1,607	1,071
2026	543	80	140	61	201	1,249	10	4,613	4,814	1,606	1,050	4,674	1,559	1,020
2027	553	80	143	62	205	1,272	10	4,700	4,906	1,559	1,000	4,763	1,513	971
2028	564	80	146	63	209	1,296	10	4,790	4,999	1,513	953	4,853	1,469	925
2029	574	80	149	65	213	1,321	10	4,881	5,094	1,468	907	4,945	1,425	881
2030	585	80	151	66	217	1,346	10	4,974	5,191	1,425	864	5,039	1,383	839
2031	596	80	154	67	221	1,372	10	5,068	5,289	1,383	823	5,135	1,342	799
2032	608	80	157	68	225	1,398	10	5,164	5,390	1,342	784	5,233	1,303	761
2033	619	80	160	70	230	1,424	10	5,262	5,492	1,302	746	5,332	1,264	725
2034	631	80	163	71	234	1,451	10	5,362	5,597	1,264	711	5,433	1,227	690
2035	643	80	166	72	239	1,479	10	5,464	5,703	1,226	677	5,537	1,191	657
2036	655	80	169	74	243	1,507	10	5,568	5,811	1,190	645	5,642	1,155	626
2037	668	80	173	75	248	1,536	10	5,674	5,922	1,155	614	5,749	1,121	596
2038	680	80	176	76	252	1,565	10	5,782	6,034	1,121	585	5,858	1,088	568
Total			4,174	1,815	5,989			162,331	168,320	79,393	63,526	164,146	77,745	62,316

TABLE A-LI

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 2C - East Lynn Highway without Katzehin Terminal
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	418	97	131	57	188	961	3	1,207	1,395	1,120	1,029	1,264	1,015	932
2009	426	97	134	58	192	979	3	1,230	1,422	1,087	980	1,288	985	888
2010	434	97	136	59	195	998	3	1,253	1,449	1,055	933	1,312	956	845
2011	442	97	139	60	199	1,017	3	1,277	1,476	1,024	889	1,337	928	805
2012	451	97	141	62	203	1,036	3	1,301	1,504	994	846	1,363	900	767
2013	459	97	144	63	207	1,056	3	1,326	1,533	964	806	1,389	874	730
2014	468	97	147	64	211	1,076	3	1,351	1,562	936	768	1,415	848	695
2015	477	97	150	65	215	1,096	3	1,377	1,592	908	731	1,442	823	662
2016	486	97	153	66	219	1,117	3	1,403	1,622	881	696	1,469	798	631
2017	495	97	155	68	223	1,139	3	1,430	1,653	855	663	1,497	775	601
2018	504	97	158	69	227	1,160	3	1,457	1,684	830	631	1,526	752	572
2019	514	97	161	70	232	1,182	3	1,485	1,716	806	601	1,555	730	545
2020	524	97	164	71	236	1,205	3	1,513	1,749	782	573	1,584	708	519
2021	534	97	168	73	240	1,228	3	1,542	1,782	759	545	1,614	687	494
2022	544	97	171	74	245	1,251	3	1,571	1,816	736	519	1,645	667	471
2023	554	97	174	76	250	1,275	3	1,601	1,850	715	495	1,676	647	448
2024	565	97	177	77	254	1,299	3	1,631	1,885	693	471	1,708	628	427
2025	575	97	181	79	259	1,324	3	1,662	1,921	673	449	1,741	610	406
2026	586	97	184	80	264	1,349	3	1,694	1,958	653	427	1,774	592	387
2027	598	97	188	82	269	1,374	3	1,726	1,995	634	407	1,807	574	369
2028	609	97	191	83	274	1,400	3	1,759	2,033	615	387	1,842	557	351
2029	620	97	195	85	280	1,427	3	1,792	2,072	597	369	1,877	541	334
2030	632	97	199	86	285	1,454	3	1,826	2,111	579	351	1,912	525	318
2031	644	97	202	88	290	1,482	3	1,861	2,151	562	335	1,949	509	303
2032	656	97	206	90	296	1,510	3	1,896	2,192	546	319	1,986	494	289
2033	669	97	210	91	301	1,539	3	1,932	2,234	530	304	2,023	480	275
2034	682	97	214	93	307	1,568	3	1,969	2,276	514	289	2,062	466	262
2035	695	97	218	95	313	1,598	3	2,006	2,319	499	275	2,101	452	249
2036	708	97	222	97	319	1,628	3	2,044	2,363	484	262	2,141	438	237
2037	721	97	226	98	325	1,659	3	2,083	2,408	470	250	2,182	426	226
2038	735	97	231	100	331	1,690	3	2,123	2,454	456	238	2,223	413	215
Total			5,474	2,380	7,853			75,588	83,441	45,900	38,959	77,967	43,738	37,373

TABLE A-LII

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 3 - West Lynn Highway
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	315	72	74	32	106	725	14	3,805	3,911	3,140	2,885	3,837	3,081	2,830
2009	321	72	75	33	108	738	14	3,874	3,982	3,045	2,744	3,906	2,987	2,693
2010	327	72	77	33	110	751	14	3,943	4,053	2,952	2,611	3,977	2,896	2,562
2011	332	72	78	34	112	765	14	4,014	4,126	2,862	2,484	4,048	2,808	2,437
2012	338	72	79	35	114	779	14	4,087	4,201	2,775	2,363	4,121	2,722	2,319
2013	345	72	81	35	116	793	14	4,160	4,276	2,690	2,249	4,195	2,639	2,206
2014	351	72	82	36	118	807	14	4,235	4,353	2,608	2,139	4,271	2,559	2,099
2015	357	72	84	36	120	821	14	4,311	4,431	2,529	2,035	4,348	2,481	1,997
2016	364	72	85	37	122	836	14	4,389	4,511	2,451	1,936	4,426	2,405	1,900
2017	370	72	87	38	125	851	14	4,468	4,592	2,377	1,842	4,506	2,332	1,807
2018	377	72	88	38	127	866	14	4,548	4,675	2,304	1,753	4,587	2,261	1,720
2019	384	72	90	39	129	882	14	4,630	4,759	2,234	1,668	4,669	2,192	1,636
2020	390	72	92	40	131	898	14	4,713	4,845	2,166	1,587	4,753	2,125	1,557
2021	397	72	93	41	134	914	14	4,798	4,932	2,100	1,509	4,839	2,060	1,481
2022	405	72	95	41	136	931	14	4,885	5,021	2,036	1,436	4,926	1,998	1,409
2023	412	72	97	42	139	947	14	4,973	5,111	1,974	1,366	5,015	1,937	1,340
2024	419	72	98	43	141	964	14	5,062	5,203	1,914	1,300	5,105	1,878	1,275
2025	427	72	100	44	144	982	14	5,153	5,297	1,855	1,237	5,197	1,820	1,213
2026	435	72	102	44	146	999	14	5,246	5,392	1,799	1,177	5,290	1,765	1,154
2027	442	72	104	45	149	1,017	14	5,340	5,489	1,744	1,119	5,386	1,711	1,098
2028	450	72	106	46	152	1,036	14	5,437	5,588	1,691	1,065	5,482	1,659	1,045
2029	458	72	108	47	154	1,054	14	5,534	5,689	1,639	1,013	5,581	1,608	994
2030	467	72	110	48	157	1,073	14	5,634	5,791	1,589	964	5,682	1,559	946
2031	475	72	111	48	160	1,093	14	5,735	5,895	1,541	917	5,784	1,512	900
2032	484	72	113	49	163	1,112	14	5,839	6,001	1,494	873	5,888	1,466	856
2033	492	72	116	50	166	1,132	14	5,944	6,110	1,449	830	5,994	1,421	815
2034	501	72	118	51	169	1,153	14	6,051	6,219	1,404	790	6,102	1,378	775
2035	510	72	120	52	172	1,173	14	6,160	6,331	1,362	751	6,212	1,336	737
2036	519	72	122	53	175	1,195	14	6,271	6,445	1,320	715	6,324	1,295	701
2037	529	72	124	54	178	1,216	14	6,383	6,561	1,280	680	6,437	1,256	667
2038	538	72	126	55	181	1,238	14	6,498	6,680	1,241	647	6,553	1,217	635
Total			3,037	1,321	4,358			181,381	185,739	86,507	68,808	182,702	85,303	67,923

TABLE A-LIII

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4A - FVF Auke Bay
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	141	2	1	0	2	508	54	10,007	10,008	8,035	7,381	10,007	8,034	7,380
2009	143	2	1	0	2	516	54	10,157	10,158	7,767	7,002	10,157	7,767	7,001
2010	145	2	1	0	2	524	54	10,309	10,311	7,509	6,642	10,310	7,508	6,641
2011	148	2	1	0	2	531	54	10,464	10,465	7,258	6,301	10,464	7,257	6,300
2012	150	2	1	1	2	539	54	10,621	10,622	7,016	5,977	10,621	7,016	5,976
2013	152	2	1	1	2	547	54	10,780	10,782	6,782	5,669	10,780	6,782	5,669
2014	154	2	1	1	2	556	54	10,942	10,943	6,556	5,378	10,942	6,556	5,377
2015	157	2	1	1	2	564	54	11,106	11,108	6,338	5,102	11,106	6,337	5,101
2016	159	2	1	1	2	572	54	11,272	11,274	6,127	4,839	11,273	6,126	4,839
2017	161	2	1	1	2	581	54	11,441	11,443	5,922	4,591	11,442	5,922	4,590
2018	164	2	1	1	2	590	54	11,613	11,615	5,725	4,355	11,614	5,724	4,354
2019	166	2	1	1	2	599	54	11,787	11,789	5,534	4,131	11,788	5,534	4,130
2020	169	2	1	1	2	608	54	11,964	11,966	5,350	3,918	11,965	5,349	3,918
2021	171	2	1	1	2	617	54	12,144	12,145	5,171	3,717	12,144	5,171	3,717
2022	174	2	1	1	2	626	54	12,326	12,328	4,999	3,526	12,326	4,998	3,526
2023	176	2	1	1	2	635	54	12,511	12,513	4,832	3,345	12,511	4,832	3,344
2024	179	2	1	1	2	645	54	12,698	12,700	4,671	3,173	12,699	4,671	3,172
2025	182	2	1	1	2	655	54	12,889	12,891	4,516	3,010	12,889	4,515	3,009
2026	185	2	1	1	2	664	54	13,082	13,084	4,365	2,855	13,083	4,365	2,855
2027	187	2	1	1	2	674	54	13,278	13,280	4,220	2,708	13,279	4,219	2,708
2028	190	2	1	1	2	684	54	13,477	13,480	4,079	2,569	13,478	4,078	2,569
2029	193	2	1	1	2	695	54	13,680	13,682	3,943	2,437	13,680	3,942	2,437
2030	196	2	2	1	2	705	54	13,885	13,887	3,811	2,312	13,885	3,811	2,311
2031	199	2	2	1	2	716	54	14,093	14,095	3,684	2,193	14,094	3,684	2,193
2032	202	2	2	1	2	726	54	14,305	14,307	3,562	2,080	14,305	3,561	2,080
2033	205	2	2	1	2	737	54	14,519	14,521	3,443	1,973	14,520	3,443	1,973
2034	208	2	2	1	2	748	54	14,737	14,739	3,328	1,872	14,738	3,328	1,872
2035	211	2	2	1	2	760	54	14,958	14,960	3,217	1,776	14,959	3,217	1,775
2036	214	2	2	1	2	771	54	15,182	15,185	3,110	1,684	15,183	3,110	1,684
2037	217	2	2	1	2	783	54	15,410	15,412	3,006	1,598	15,411	3,006	1,598
2038	221	2	2	1	2	794	54	15,641	15,644	2,906	1,516	15,642	2,906	1,515
Total			45	20	65			416,538	416,602	179,727	137,749	416,557	179,707	137,734

TABLE A-LIV

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4B - FVF Berners Bay
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	166	23	12	5	18	598	42	9,180	9,197	7,384	6,783	9,185	7,374	6,774
2009	169	23	12	5	18	607	42	9,327	9,344	7,145	6,441	9,332	7,136	6,432
2010	171	23	13	5	18	617	42	9,476	9,494	6,914	6,116	9,481	6,905	6,108
2011	174	23	13	6	18	627	42	9,627	9,646	6,690	5,807	9,633	6,681	5,799
2012	177	23	13	6	19	637	42	9,782	9,800	6,473	5,514	9,787	6,465	5,507
2013	180	23	13	6	19	647	42	9,938	9,957	6,264	5,236	9,944	6,255	5,229
2014	183	23	13	6	19	657	42	10,097	10,116	6,061	4,972	10,103	6,053	4,965
2015	186	23	14	6	20	668	42	10,259	10,278	5,865	4,721	10,265	5,857	4,714
2016	189	23	14	6	20	679	42	10,423	10,443	5,675	4,482	10,429	5,667	4,476
2017	192	23	14	6	20	690	42	10,589	10,610	5,491	4,256	10,596	5,484	4,251
2018	195	23	14	6	21	701	42	10,759	10,779	5,313	4,041	10,765	5,306	4,036
2019	198	23	15	6	21	712	42	10,931	10,952	5,141	3,837	10,937	5,134	3,832
2020	201	23	15	6	21	723	42	11,106	11,127	4,975	3,644	11,112	4,968	3,639
2021	204	23	15	7	22	735	42	11,284	11,305	4,814	3,460	11,290	4,807	3,455
2022	207	23	15	7	22	747	42	11,464	11,486	4,658	3,285	11,471	4,651	3,281
2023	211	23	16	7	22	758	42	11,648	11,670	4,507	3,119	11,654	4,501	3,115
2024	214	23	16	7	23	771	42	11,834	11,857	4,361	2,962	11,841	4,355	2,958
2025	217	23	16	7	23	783	42	12,023	12,046	4,220	2,813	12,030	4,214	2,809
2026	221	23	16	7	23	795	42	12,216	12,239	4,083	2,671	12,223	4,078	2,667
2027	224	23	17	7	24	808	42	12,411	12,435	3,951	2,536	12,418	3,946	2,532
2028	228	23	17	7	24	821	42	12,610	12,634	3,823	2,408	12,617	3,818	2,405
2029	232	23	17	7	25	834	42	12,811	12,836	3,699	2,286	12,819	3,694	2,283
2030	235	23	17	8	25	848	42	13,016	13,041	3,579	2,171	13,024	3,575	2,168
2031	239	23	18	8	25	861	42	13,225	13,250	3,463	2,061	13,232	3,459	2,059
2032	243	23	18	8	26	875	42	13,436	13,462	3,351	1,957	13,444	3,347	1,955
2033	247	23	18	8	26	889	42	13,651	13,677	3,243	1,859	13,659	3,238	1,856
2034	251	23	18	8	27	903	42	13,870	13,896	3,138	1,765	13,878	3,134	1,762
2035	255	23	19	8	27	918	42	14,092	14,119	3,036	1,676	14,100	3,032	1,673
2036	259	23	19	8	27	932	42	14,317	14,344	2,938	1,591	14,325	2,934	1,589
2037	263	23	19	8	28	947	42	14,546	14,574	2,843	1,511	14,555	2,839	1,509
2038	267	23	20	9	28	962	42	14,779	14,807	2,751	1,435	14,787	2,747	1,433
Total			489	213	702			389,986	390,688	168,791	129,537	390,199	168,594	129,392

TABLE A-LV

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4C - Dayboat Auke Bay
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	103	2	1	0	1	370	50	6,715	6,716	5,392	4,953	6,715	5,391	4,952
2009	104	2	1	0	1	374	50	6,795	6,796	5,197	4,684	6,795	5,196	4,684
2010	105	2	1	0	1	379	50	6,877	6,878	5,009	4,431	6,877	5,008	4,430
2011	106	2	1	0	1	383	50	6,959	6,960	4,827	4,190	6,960	4,827	4,190
2012	108	2	1	0	1	388	50	7,043	7,044	4,653	3,963	7,043	4,652	3,963
2013	109	2	1	0	1	393	50	7,127	7,128	4,484	3,748	7,128	4,484	3,748
2014	110	2	1	0	1	397	50	7,213	7,214	4,322	3,545	7,213	4,322	3,545
2015	112	2	1	0	1	402	50	7,299	7,301	4,166	3,353	7,300	4,165	3,353
2016	113	2	1	0	1	407	50	7,387	7,388	4,015	3,171	7,387	4,014	3,171
2017	114	2	1	0	1	412	50	7,476	7,477	3,870	2,999	7,476	3,869	2,999
2018	116	2	1	0	1	417	50	7,565	7,567	3,730	2,837	7,566	3,729	2,836
2019	117	2	1	0	1	422	50	7,656	7,657	3,595	2,683	7,656	3,594	2,683
2020	119	2	1	0	1	427	50	7,748	7,749	3,464	2,538	7,748	3,464	2,537
2021	120	2	1	0	1	432	50	7,841	7,842	3,339	2,400	7,841	3,339	2,400
2022	121	2	1	0	1	437	50	7,935	7,936	3,218	2,270	7,935	3,218	2,270
2023	123	2	1	0	1	442	50	8,030	8,032	3,102	2,147	8,031	3,101	2,147
2024	124	2	1	0	1	448	50	8,127	8,128	2,990	2,031	8,127	2,989	2,030
2025	126	2	1	0	1	453	50	8,224	8,225	2,881	1,920	8,225	2,881	1,920
2026	127	2	1	0	1	458	50	8,323	8,324	2,777	1,816	8,323	2,777	1,816
2027	129	2	1	0	1	464	50	8,423	8,424	2,677	1,718	8,423	2,676	1,718
2028	130	2	1	0	1	469	50	8,524	8,525	2,580	1,625	8,524	2,579	1,625
2029	132	2	1	0	1	475	50	8,626	8,627	2,486	1,537	8,626	2,486	1,537
2030	134	2	1	0	1	481	50	8,730	8,731	2,396	1,453	8,730	2,396	1,453
2031	135	2	1	0	1	487	50	8,834	8,836	2,310	1,375	8,835	2,309	1,374
2032	137	2	1	0	2	492	50	8,940	8,942	2,226	1,300	8,941	2,226	1,300
2033	138	2	1	0	2	498	50	9,048	9,049	2,145	1,230	9,048	2,145	1,230
2034	140	2	1	0	2	504	50	9,156	9,158	2,068	1,163	9,157	2,068	1,163
2035	142	2	1	0	2	510	50	9,266	9,268	1,993	1,100	9,266	1,993	1,100
2036	143	2	1	0	2	516	50	9,377	9,379	1,921	1,040	9,378	1,921	1,040
2037	145	2	1	0	2	523	50	9,490	9,491	1,851	984	9,490	1,851	984
2038	147	2	1	0	2	529	50	9,604	9,605	1,784	931	9,604	1,784	930
Total			32	14	46			275,616	275,663	124,410	97,257	275,630	124,395	97,246

TABLE A-LVI

Revenues
Auke Bay to Haines and Skagway Origin-Destination Traffic
Alternative 4D - Dayboat Berners Bay
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	91	2	1	0	1	328	52	6,268	6,269	6,118	6,061	6,268	6,117	6,060
2005	91	2	1	0	1	329	52	6,299	6,300	5,856	5,692	6,300	5,855	5,692
2006	92	2	1	0	1	331	52	6,331	6,332	5,605	5,347	6,331	5,604	5,346
2007	92	2	1	0	1	333	52	6,363	6,364	5,365	5,022	6,363	5,364	5,021
2008	131	22	9	4	13	471	39	6,731	6,745	5,415	4,974	6,735	5,408	4,967
2009	133	22	9	4	14	477	39	6,826	6,839	5,230	4,714	6,830	5,222	4,708
2010	134	22	10	4	14	484	39	6,921	6,935	5,050	4,467	6,925	5,043	4,461
2011	136	22	10	4	14	491	39	7,018	7,032	4,877	4,234	7,022	4,870	4,228
2012	138	22	10	4	14	498	39	7,116	7,130	4,710	4,012	7,121	4,703	4,006
2013	140	22	10	4	14	504	39	7,216	7,230	4,548	3,802	7,220	4,542	3,797
2014	142	22	10	4	15	512	39	7,317	7,331	4,392	3,603	7,321	4,386	3,598
2015	144	22	10	4	15	519	39	7,419	7,434	4,242	3,414	7,424	4,236	3,410
2016	146	22	10	5	15	526	39	7,523	7,538	4,096	3,236	7,528	4,091	3,231
2017	148	22	11	5	15	533	39	7,629	7,644	3,956	3,066	7,633	3,950	3,062
2018	150	22	11	5	15	541	39	7,735	7,751	3,820	2,906	7,740	3,815	2,902
2019	152	22	11	5	16	548	39	7,844	7,859	3,689	2,754	7,848	3,684	2,750
2020	154	22	11	5	16	556	39	7,953	7,969	3,563	2,610	7,958	3,558	2,606
2021	157	22	11	5	16	564	39	8,065	8,081	3,441	2,473	8,070	3,436	2,470
2022	159	22	11	5	16	572	39	8,178	8,194	3,323	2,344	8,183	3,318	2,340
2023	161	22	11	5	16	580	39	8,292	8,309	3,209	2,221	8,297	3,204	2,218
2024	163	22	12	5	17	588	39	8,408	8,425	3,099	2,105	8,413	3,094	2,102
2025	166	22	12	5	17	596	39	8,526	8,543	2,993	1,995	8,531	2,988	1,992
2026	168	22	12	5	17	604	39	8,645	8,663	2,890	1,890	8,651	2,886	1,888
2027	170	22	12	5	17	613	39	8,766	8,784	2,791	1,791	8,772	2,787	1,789
2028	173	22	12	5	18	621	39	8,889	8,907	2,695	1,698	8,895	2,691	1,695
2029	175	22	12	5	18	630	39	9,014	9,032	2,603	1,609	9,019	2,599	1,606
2030	177	22	13	6	18	639	39	9,140	9,158	2,514	1,525	9,145	2,510	1,522
2031	180	22	13	6	18	648	39	9,268	9,286	2,427	1,445	9,273	2,424	1,443
2032	182	22	13	6	19	657	39	9,398	9,416	2,344	1,369	9,403	2,341	1,367
2033	185	22	13	6	19	666	39	9,529	9,548	2,264	1,297	9,535	2,261	1,296
2034	188	22	13	6	19	676	39	9,662	9,682	2,186	1,230	9,668	2,183	1,228
2035	190	22	14	6	19	685	39	9,798	9,817	2,111	1,165	9,804	2,108	1,164
2036	193	22	14	6	20	695	39	9,935	9,955	2,039	1,104	9,941	2,036	1,103
2037	196	22	14	6	20	704	39	10,074	10,094	1,969	1,046	10,080	1,966	1,045
2038	198	22	14	6	20	714	39	10,215	10,235	1,901	992	10,221	1,899	990
Total			362	157	519			284,312	284,831	127,330	99,211	284,469	127,183	99,102

TABLE A-LVII

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 1 - No Action
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	38	4	1	0	1	87	11	366	367	294	270	366	294	270
2009	38	4	1	0	1	88	11	370	371	284	256	371	283	255
2010	39	4	1	0	1	90	11	375	376	274	242	375	273	242
2011	39	4	1	0	1	91	11	380	381	264	229	380	264	229
2012	40	4	1	0	1	92	11	384	385	254	217	385	254	216
2013	40	4	1	0	1	93	11	389	390	245	205	390	245	205
2014	41	4	1	0	1	94	11	394	395	237	194	394	236	194
2015	41	4	1	0	1	95	11	399	400	228	184	399	228	183
2016	42	4	1	0	1	97	11	404	405	220	174	404	220	174
2017	42	4	1	0	1	98	11	409	410	212	164	409	212	164
2018	43	4	1	0	1	99	11	414	415	205	156	414	204	155
2019	44	4	1	0	1	100	11	419	420	197	147	420	197	147
2020	44	4	1	0	1	101	11	425	426	190	139	425	190	139
2021	45	4	1	0	1	103	11	430	431	183	132	430	183	132
2022	45	4	1	0	1	104	11	435	436	177	125	436	177	125
2023	46	4	1	0	1	105	11	441	442	171	118	441	170	118
2024	46	4	1	0	1	107	11	446	447	164	112	447	164	112
2025	47	4	1	0	1	108	11	452	453	159	106	452	158	106
2026	48	4	1	0	1	109	11	458	458	153	100	458	153	100
2027	48	4	1	0	1	111	11	463	464	147	95	464	147	95
2028	49	4	1	0	1	112	11	469	470	142	90	469	142	89
2029	49	4	1	0	1	113	11	475	476	137	85	475	137	85
2030	50	4	1	0	1	115	11	481	482	132	80	481	132	80
2031	51	4	1	0	1	116	11	487	488	128	76	487	127	76
2032	51	4	1	0	1	118	11	493	494	123	72	493	123	72
2033	52	4	1	0	1	119	11	499	500	119	68	499	118	68
2034	52	4	1	0	1	121	11	505	506	114	64	506	114	64
2035	53	4	1	0	1	122	11	512	513	110	61	512	110	61
2036	54	4	1	0	1	124	11	518	519	106	58	518	106	57
2037	54	4	1	0	1	125	11	525	526	103	54	525	102	54
2038	55	4	1	0	1	127	11	531	532	99	52	531	99	51
Total			22	10	32			15,212	15,244	6,904	5,408	15,222	6,894	5,400

TABLE A-LVIII

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 2 - East Lynn Highway with Katzehin Terminal
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	50	22	4	2	5	115	8	338	343	276	253	340	273	251
2009	51	22	4	2	5	117	8	343	349	267	240	345	264	238
2010	52	22	4	2	5	118	8	348	354	258	228	350	255	226
2011	52	22	4	2	5	120	8	354	359	249	216	355	246	214
2012	53	22	4	2	5	122	8	359	364	241	205	361	238	203
2013	54	22	4	2	6	124	8	364	370	233	195	366	230	192
2014	55	22	4	2	6	126	8	370	376	225	185	372	223	183
2015	55	22	4	2	6	128	8	375	381	217	175	377	215	173
2016	56	22	4	2	6	130	8	381	387	210	166	383	208	164
2017	57	22	4	2	6	131	8	387	393	203	158	389	201	156
2018	58	22	4	2	6	133	8	393	399	196	149	394	194	148
2019	59	22	4	2	6	135	8	398	405	190	142	400	188	140
2020	60	22	4	2	6	137	8	404	411	184	134	406	182	133
2021	61	22	4	2	6	140	8	410	417	177	128	412	176	126
2022	62	22	4	2	6	142	8	417	423	172	121	419	170	120
2023	63	22	5	2	6	144	8	423	429	166	115	425	164	114
2024	63	22	5	2	7	146	8	429	436	160	109	431	159	108
2025	64	22	5	2	7	148	8	436	442	155	103	438	153	102
2026	65	22	5	2	7	150	8	442	449	150	98	444	148	97
2027	66	22	5	2	7	153	8	449	456	145	93	451	143	92
2028	67	22	5	2	7	155	8	456	463	140	88	458	138	87
2029	68	22	5	2	7	157	8	462	469	135	84	465	134	83
2030	69	22	5	2	7	160	8	469	477	131	79	472	129	78
2031	70	22	5	2	7	162	8	476	484	126	75	479	125	74
2032	71	22	5	2	7	164	8	484	491	122	71	486	121	71
2033	73	22	5	2	8	167	8	491	498	118	68	493	117	67
2034	74	22	5	2	8	169	8	498	506	114	64	500	113	64
2035	75	22	5	2	8	172	8	506	513	110	61	508	109	60
2036	76	22	5	2	8	174	8	513	521	107	58	516	106	57
2037	77	22	6	2	8	177	8	521	529	103	55	523	102	54
2038	78	22	6	2	8	180	8	529	537	100	52	531	99	51
Total			143	62	205			14,689	14,894	6,712	5,252	14,751	6,653	5,209

TABLE A-LIX

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 2A - East Lynn Highway with Berners Shuttle
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	50	22	4	2	5	115	8	338	343	276	253	340	273	251
2009	51	22	4	2	5	117	8	343	349	267	240	345	264	238
2010	52	22	4	2	5	118	8	348	354	258	228	350	255	226
2011	52	22	4	2	5	120	8	354	359	249	216	355	246	214
2012	53	22	4	2	5	122	8	359	364	241	205	361	238	203
2013	54	22	4	2	6	124	8	364	370	233	195	366	230	192
2014	55	22	4	2	6	126	8	370	376	225	185	372	223	183
2015	55	22	4	2	6	128	8	375	381	217	175	377	215	173
2016	56	22	4	2	6	130	8	381	387	210	166	383	208	164
2017	57	22	4	2	6	131	8	387	393	203	158	389	201	156
2018	58	22	4	2	6	133	8	393	399	196	149	394	194	148
2019	59	22	4	2	6	135	8	398	405	190	142	400	188	140
2020	60	22	4	2	6	137	8	404	411	184	134	406	182	133
2021	61	22	4	2	6	140	8	410	417	177	128	412	176	126
2022	62	22	4	2	6	142	8	417	423	172	121	419	170	120
2023	63	22	5	2	6	144	8	423	429	166	115	425	164	114
2024	63	22	5	2	7	146	8	429	436	160	109	431	159	108
2025	64	22	5	2	7	148	8	436	442	155	103	438	153	102
2026	65	22	5	2	7	150	8	442	449	150	98	444	148	97
2027	66	22	5	2	7	153	8	449	456	145	93	451	143	92
2028	67	22	5	2	7	155	8	456	463	140	88	458	138	87
2029	68	22	5	2	7	157	8	462	469	135	84	465	134	83
2030	69	22	5	2	7	160	8	469	477	131	79	472	129	78
2031	70	22	5	2	7	162	8	476	484	126	75	479	125	74
2032	71	22	5	2	7	164	8	484	491	122	71	486	121	71
2033	73	22	5	2	8	167	8	491	498	118	68	493	117	67
2034	74	22	5	2	8	169	8	498	506	114	64	500	113	64
2035	75	22	5	2	8	172	8	506	513	110	61	508	109	60
2036	76	22	5	2	8	174	8	513	521	107	58	516	106	57
2037	77	22	6	2	8	177	8	521	529	103	55	523	102	54
2038	78	22	6	2	8	180	8	529	537	100	52	531	99	51
Total			143	62	205			14,689	14,894	6,712	5,252	14,751	6,653	5,209

TABLE A-LX

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 2B - East Lynn Highway to Katzehin
($000)

			Highway Fuel Taxes					AMHS Fares	Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	50	4	1	0	1	115	13	534	535	429	394	534	429	394
2009	51	4	1	0	1	117	13	542	543	415	374	542	415	374
2010	52	4	1	0	1	118	13	550	551	401	355	550	401	354
2011	52	4	1	0	1	120	13	558	559	388	337	559	387	336
2012	53	4	1	0	1	122	13	567	568	375	319	567	374	319
2013	54	4	1	0	1	124	13	575	576	362	303	575	362	303
2014	55	4	1	0	1	126	13	584	585	350	287	584	350	287
2015	55	4	1	0	1	128	13	592	594	339	273	593	338	272
2016	56	4	1	0	1	130	13	601	603	327	259	602	327	258
2017	57	4	1	0	1	131	13	610	612	317	245	611	316	245
2018	58	4	1	0	1	133	13	620	621	306	233	620	306	232
2019	59	4	1	0	1	135	13	629	630	296	221	629	295	220
2020	60	4	1	0	1	137	13	638	639	286	209	639	286	209
2021	61	4	1	0	1	140	13	648	649	276	199	648	276	198
2022	62	4	1	0	1	142	13	658	659	267	188	658	267	188
2023	63	4	1	0	1	144	13	667	669	258	179	668	258	179
2024	63	4	1	0	1	146	13	677	679	250	170	678	249	169
2025	64	4	1	0	1	148	13	688	689	241	161	688	241	161
2026	65	4	1	0	1	150	13	698	699	233	153	698	233	152
2027	66	4	1	0	1	153	13	708	710	225	145	709	225	145
2028	67	4	1	0	1	155	13	719	720	218	137	719	218	137
2029	68	4	1	0	1	157	13	730	731	211	130	730	210	130
2030	69	4	1	0	1	160	13	741	742	204	124	741	203	123
2031	70	4	1	0	1	162	13	752	753	197	117	752	197	117
2032	71	4	1	0	1	164	13	763	765	190	111	764	190	111
2033	73	4	1	0	1	167	13	775	776	184	105	775	184	105
2034	74	4	1	0	1	169	13	786	788	178	100	787	178	100
2035	75	4	1	0	1	172	13	798	799	172	95	798	172	95
2036	76	4	1	0	2	174	13	810	811	166	90	810	166	90
2037	77	4	1	0	2	177	13	822	824	161	85	823	160	85
2038	78	4	1	0	2	180	13	834	836	155	81	835	155	81
Total			29	13	42			22,338	22,380	9,711	7,464	22,351	9,698	7,454

TABLE A-LXI

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 2C - East Lynn Highway without Katzehin Terminal
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	50	4	1	0	1	115	11	481	482	387	356	482	387	355
2009	51	4	1	0	1	117	11	489	490	374	337	489	374	337
2010	52	4	1	0	1	118	11	496	497	362	320	496	361	320
2011	52	4	1	0	1	120	11	503	504	350	304	504	349	303
2012	53	4	1	0	1	122	11	511	512	338	288	511	338	288
2013	54	4	1	0	1	124	11	519	520	327	273	519	326	273
2014	55	4	1	0	1	126	11	526	527	316	259	527	316	259
2015	55	4	1	0	1	128	11	534	535	305	246	535	305	246
2016	56	4	1	0	1	130	11	542	543	295	233	543	295	233
2017	57	4	1	0	1	131	11	550	552	285	221	551	285	221
2018	58	4	1	0	1	133	11	559	560	276	210	559	276	210
2019	59	4	1	0	1	135	11	567	568	267	199	567	266	199
2020	60	4	1	0	1	137	11	576	577	258	189	576	257	189
2021	61	4	1	0	1	140	11	584	585	249	179	585	249	179
2022	62	4	1	0	1	142	11	593	594	241	170	593	241	170
2023	63	4	1	0	1	144	11	602	603	233	161	602	233	161
2024	63	4	1	0	1	146	11	611	612	225	153	611	225	153
2025	64	4	1	0	1	148	11	620	621	218	145	620	217	145
2026	65	4	1	0	1	150	11	629	631	210	138	630	210	137
2027	66	4	1	0	1	153	11	639	640	203	131	639	203	130
2028	67	4	1	0	1	155	11	648	650	197	124	649	196	124
2029	68	4	1	0	1	157	11	658	659	190	117	658	190	117
2030	69	4	1	0	1	160	11	668	669	184	111	668	183	111
2031	70	4	1	0	1	162	11	678	679	178	106	678	177	106
2032	71	4	1	0	1	164	11	688	690	172	100	689	171	100
2033	73	4	1	0	1	167	11	698	700	166	95	699	166	95
2034	74	4	1	0	1	169	11	709	710	160	90	709	160	90
2035	75	4	1	0	1	172	11	720	721	155	86	720	155	85
2036	76	4	1	0	2	174	11	730	732	150	81	731	150	81
2037	77	4	1	0	2	177	11	741	743	145	77	742	145	77
2038	78	4	1	0	2	180	11	752	754	140	73	753	140	73
Total			29	13	42			20,286	20,328	8,889	6,858	20,299	8,876	6,848

TABLE A-LXII

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 3 - West Lynn Highway
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	50	4	1	0	1	115	11	481	482	387	356	482	387	355
2009	51	4	1	0	1	117	11	489	490	374	337	489	374	337
2010	52	4	1	0	1	118	11	496	497	362	320	496	361	320
2011	52	4	1	0	1	120	11	503	504	350	304	504	349	303
2012	53	4	1	0	1	122	11	511	512	338	288	511	338	288
2013	54	4	1	0	1	124	11	519	520	327	273	519	326	273
2014	55	4	1	0	1	126	11	526	527	316	259	527	316	259
2015	55	4	1	0	1	128	11	534	535	305	246	535	305	246
2016	56	4	1	0	1	130	11	542	543	295	233	543	295	233
2017	57	4	1	0	1	131	11	550	552	285	221	551	285	221
2018	58	4	1	0	1	133	11	559	560	276	210	559	276	210
2019	59	4	1	0	1	135	11	567	568	267	199	567	266	199
2020	60	4	1	0	1	137	11	576	577	258	189	576	257	189
2021	61	4	1	0	1	140	11	584	585	249	179	585	249	179
2022	62	4	1	0	1	142	11	593	594	241	170	593	241	170
2023	63	4	1	0	1	144	11	602	603	233	161	602	233	161
2024	63	4	1	0	1	146	11	611	612	225	153	611	225	153
2025	64	4	1	0	1	148	11	620	621	218	145	620	217	145
2026	65	4	1	0	1	150	11	629	631	210	138	630	210	137
2027	66	4	1	0	1	153	11	639	640	203	131	639	203	130
2028	67	4	1	0	1	155	11	648	650	197	124	649	196	124
2029	68	4	1	0	1	157	11	658	659	190	117	658	190	117
2030	69	4	1	0	1	160	11	668	669	184	111	668	183	111
2031	70	4	1	0	1	162	11	678	679	178	106	678	177	106
2032	71	4	1	0	1	164	11	688	690	172	100	689	171	100
2033	73	4	1	0	1	167	11	698	700	166	95	699	166	95
2034	74	4	1	0	1	169	11	709	710	160	90	709	160	90
2035	75	4	1	0	1	172	11	720	721	155	86	720	155	85
2036	76	4	1	0	2	174	11	730	732	150	81	731	150	81
2037	77	4	1	0	2	177	11	741	743	145	77	742	145	77
2038	78	4	1	0	2	180	11	752	754	140	73	753	140	73
Total			29	13	42			20,286	20,328	8,889	6,858	20,299	8,876	6,848

TABLE A-LXIII

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 4A - FVF Auke Bay
($000)

			Highway Fuel Taxes					AMHS Fares	Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	38	4	1	0	1	87	11	366	367	294	270	366	294	270
2009	38	4	1	0	1	88	11	370	371	284	256	371	283	255
2010	39	4	1	0	1	90	11	375	376	274	242	375	273	242
2011	39	4	1	0	1	91	11	380	381	264	229	380	264	229
2012	40	4	1	0	1	92	11	384	385	254	217	385	254	216
2013	40	4	1	0	1	93	11	389	390	245	205	390	245	205
2014	41	4	1	0	1	94	11	394	395	237	194	394	236	194
2015	41	4	1	0	1	95	11	399	400	228	184	399	228	183
2016	42	4	1	0	1	97	11	404	405	220	174	404	220	174
2017	42	4	1	0	1	98	11	409	410	212	164	409	212	164
2018	43	4	1	0	1	99	11	414	415	205	156	414	204	155
2019	44	4	1	0	1	100	11	419	420	197	147	420	197	147
2020	44	4	1	0	1	101	11	425	426	190	139	425	190	139
2021	45	4	1	0	1	103	11	430	431	183	132	430	183	132
2022	45	4	1	0	1	104	11	435	436	177	125	436	177	125
2023	46	4	1	0	1	105	11	441	442	171	118	441	170	118
2024	46	4	1	0	1	107	11	446	447	164	112	447	164	112
2025	47	4	1	0	1	108	11	452	453	159	106	452	158	106
2026	48	4	1	0	1	109	11	458	458	153	100	458	153	100
2027	48	4	1	0	1	111	11	463	464	147	95	464	147	95
2028	49	4	1	0	1	112	11	469	470	142	90	469	142	89
2029	49	4	1	0	1	113	11	475	476	137	85	475	137	85
2030	50	4	1	0	1	115	11	481	482	132	80	481	132	80
2031	51	4	1	0	1	116	11	487	488	128	76	487	127	76
2032	51	4	1	0	1	118	11	493	494	123	72	493	123	72
2033	52	4	1	0	1	119	11	499	500	119	68	499	118	68
2034	52	4	1	0	1	121	11	505	506	114	64	506	114	64
2035	53	4	1	0	1	122	11	512	513	110	61	512	110	61
2036	54	4	1	0	1	124	11	518	519	106	58	518	106	57
2037	54	4	1	0	1	125	11	525	526	103	54	525	102	54
2038	55	4	1	0	1	127	11	531	532	99	52	531	99	51
Total			22	10	32			15,212	15,244	6,904	5,408	15,222	6,894	5,400

TABLE A-LXIV

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 4B - FVF Berners Bay
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	38	4	1	0	1	87	11	366	367	294	270	366	294	270
2009	38	4	1	0	1	88	11	370	371	284	256	371	283	255
2010	39	4	1	0	1	90	11	375	376	274	242	375	273	242
2011	39	4	1	0	1	91	11	380	381	264	229	380	264	229
2012	40	4	1	0	1	92	11	384	385	254	217	385	254	216
2013	40	4	1	0	1	93	11	389	390	245	205	390	245	205
2014	41	4	1	0	1	94	11	394	395	237	194	394	236	194
2015	41	4	1	0	1	95	11	399	400	228	184	399	228	183
2016	42	4	1	0	1	97	11	404	405	220	174	404	220	174
2017	42	4	1	0	1	98	11	409	410	212	164	409	212	164
2018	43	4	1	0	1	99	11	414	415	205	156	414	204	155
2019	44	4	1	0	1	100	11	419	420	197	147	420	197	147
2020	44	4	1	0	1	101	11	425	426	190	139	425	190	139
2021	45	4	1	0	1	103	11	430	431	183	132	430	183	132
2022	45	4	1	0	1	104	11	435	436	177	125	436	177	125
2023	46	4	1	0	1	105	11	441	442	171	118	441	170	118
2024	46	4	1	0	1	107	11	446	447	164	112	447	164	112
2025	47	4	1	0	1	108	11	452	453	159	106	452	158	106
2026	48	4	1	0	1	109	11	458	458	153	100	458	153	100
2027	48	4	1	0	1	111	11	463	464	147	95	464	147	95
2028	49	4	1	0	1	112	11	469	470	142	90	469	142	89
2029	49	4	1	0	1	113	11	475	476	137	85	475	137	85
2030	50	4	1	0	1	115	11	481	482	132	80	481	132	80
2031	51	4	1	0	1	116	11	487	488	128	76	487	127	76
2032	51	4	1	0	1	118	11	493	494	123	72	493	123	72
2033	52	4	1	0	1	119	11	499	500	119	68	499	118	68
2034	52	4	1	0	1	121	11	505	506	114	64	506	114	64
2035	53	4	1	0	1	122	11	512	513	110	61	512	110	61
2036	54	4	1	0	1	124	11	518	519	106	58	518	106	57
2037	54	4	1	0	1	125	11	525	526	103	54	525	102	54
2038	55	4	1	0	1	127	11	531	532	99	52	531	99	51
Total			22	10	32			15,212	15,244	6,904	5,408	15,222	6,894	5,400

TABLE A-LXV

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 4C - Dayboat Auke Bay
($000)

			Highway Fuel Taxes					AMHS Fares	Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	38	4	1	0	1	87	11	366	367	294	270	366	294	270
2009	38	4	1	0	1	88	11	370	371	284	256	371	283	255
2010	39	4	1	0	1	90	11	375	376	274	242	375	273	242
2011	39	4	1	0	1	91	11	380	381	264	229	380	264	229
2012	40	4	1	0	1	92	11	384	385	254	217	385	254	216
2013	40	4	1	0	1	93	11	389	390	245	205	390	245	205
2014	41	4	1	0	1	94	11	394	395	237	194	394	236	194
2015	41	4	1	0	1	95	11	399	400	228	184	399	228	183
2016	42	4	1	0	1	97	11	404	405	220	174	404	220	174
2017	42	4	1	0	1	98	11	409	410	212	164	409	212	164
2018	43	4	1	0	1	99	11	414	415	205	156	414	204	155
2019	44	4	1	0	1	100	11	419	420	197	147	420	197	147
2020	44	4	1	0	1	101	11	425	426	190	139	425	190	139
2021	45	4	1	0	1	103	11	430	431	183	132	430	183	132
2022	45	4	1	0	1	104	11	435	436	177	125	436	177	125
2023	46	4	1	0	1	105	11	441	442	171	118	441	170	118
2024	46	4	1	0	1	107	11	446	447	164	112	447	164	112
2025	47	4	1	0	1	108	11	452	453	159	106	452	158	106
2026	48	4	1	0	1	109	11	458	458	153	100	458	153	100
2027	48	4	1	0	1	111	11	463	464	147	95	464	147	95
2028	49	4	1	0	1	112	11	469	470	142	90	469	142	89
2029	49	4	1	0	1	113	11	475	476	137	85	475	137	85
2030	50	4	1	0	1	115	11	481	482	132	80	481	132	80
2031	51	4	1	0	1	116	11	487	488	128	76	487	127	76
2032	51	4	1	0	1	118	11	493	494	123	72	493	123	72
2033	52	4	1	0	1	119	11	499	500	119	68	499	118	68
2034	52	4	1	0	1	121	11	505	506	114	64	506	114	64
2035	53	4	1	0	1	122	11	512	513	110	61	512	110	61
2036	54	4	1	0	1	124	11	518	519	106	58	518	106	57
2037	54	4	1	0	1	125	11	525	526	103	54	525	102	54
2038	55	4	1	0	1	127	11	531	532	99	52	531	99	51
Total			22	10	32			15,212	15,244	6,904	5,408	15,222	6,894	5,400

TABLE A-LXVI

Revenues
Haines to Skagway Origin-Destination Traffic
Alternative 4D - Dayboat Berners Bay
($000)

			Highway Fuel Taxes				AMHS Fares		Total Taxes & Fares			State Taxes & Fares		
Year	AADT	Average Road Miles	Federal ($0.184/gal)	State ($0.08/gal)	Total Tax Revenue	Annual Average Daily Users	Average Fare Costs/User	Total Fare Revenue	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04	Total Revenue	Present Value @ State Govt Opportunity Cost 1/1/04	Present Value @ Private Sector Rate of Return 1/1/04
2004	38	4	1	0	1	87	11	366	367	358	354	366	357	354
2005	38	4	1	0	1	87	11	366	367	341	331	366	340	331
2006	38	4	1	0	1	87	11	366	367	325	310	366	324	309
2007	38	4	1	0	1	87	11	366	367	309	289	366	309	289
2008	38	4	1	0	1	87	11	366	367	294	270	366	294	270
2009	38	4	1	0	1	88	11	370	371	284	256	371	283	255
2010	39	4	1	0	1	90	11	375	376	274	242	375	273	242
2011	39	4	1	0	1	91	11	380	381	264	229	380	264	229
2012	40	4	1	0	1	92	11	384	385	254	217	385	254	216
2013	40	4	1	0	1	93	11	389	390	245	205	390	245	205
2014	41	4	1	0	1	94	11	394	395	237	194	394	236	194
2015	41	4	1	0	1	95	11	399	400	228	184	399	228	183
2016	42	4	1	0	1	97	11	404	405	220	174	404	220	174
2017	42	4	1	0	1	98	11	409	410	212	164	409	212	164
2018	43	4	1	0	1	99	11	414	415	205	156	414	204	155
2019	44	4	1	0	1	100	11	419	420	197	147	420	197	147
2020	44	4	1	0	1	101	11	425	426	190	139	425	190	139
2021	45	4	1	0	1	103	11	430	431	183	132	430	183	132
2022	45	4	1	0	1	104	11	435	436	177	125	436	177	125
2023	46	4	1	0	1	105	11	441	442	171	118	441	170	118
2024	46	4	1	0	1	107	11	446	447	164	112	447	164	112
2025	47	4	1	0	1	108	11	452	453	159	106	452	158	106
2026	48	4	1	0	1	109	11	458	458	153	100	458	153	100
2027	48	4	1	0	1	111	11	463	464	147	95	464	147	95
2028	49	4	1	0	1	112	11	469	470	142	90	469	142	89
2029	49	4	1	0	1	113	11	475	476	137	85	475	137	85
2030	50	4	1	0	1	115	11	481	482	132	80	481	132	80
2031	51	4	1	0	1	116	11	487	488	128	76	487	127	76
2032	51	4	1	0	1	118	11	493	494	123	72	493	123	72
2033	52	4	1	0	1	119	11	499	500	119	68	499	118	68
2034	52	4	1	0	1	121	11	505	506	114	64	506	114	64
2035	53	4	1	0	1	122	11	512	513	110	61	512	110	61
2036	54	4	1	0	1	124	11	518	519	106	58	518	106	57
2037	54	4	1	0	1	125	11	525	526	103	54	525	102	54
2038	55	4	1	0	1	127	11	531	532	99	52	531	99	51
Total			22	10	32			15,212	15,244	6,904	5,408	15,222	6,894	5,400

TABLE A-LXVII

AMHS Fares per User and Road Miles
Auke Bay to Haines and Skagway

Alternative	Leg	Haines Fares/ User	Skagway Fares/ User	Haines Road Miles	Skagway Road Miles	Haines Traffic	Skagway Traffic	Blended Fares/User	Blended Road Miles
1 - No Action	ALL	45.34	61.07	4	0	55%	45%	52.42	2
2 - East Lynn SGY	ALL	8.06	0.00	82	95	44%	56%	3.55	89
2A - East Lynn SGY	ALL	14.99	6.94	71	85	44%	56%	10.48	79
2B - East Lynn KTZ	ALL	8.06	12.19	82	77	50%	50%	10.12	80
2C - East Lynn SGY	ALL	11.47	0.00	100	95	30%	70%	3.44	97
3 - West Lynn	ALL	10.94	22.41	71	75	70%	30%	14.38	72
4A - FVF Auke Bay	ALL	46.58	62.97	4	0	55%	45%	53.95	2
4B - FVF Berners Bay	ALL	36.18	49.27	25	20	55%	45%	42.07	23
4C - Dayboat Auke Bay	ALL	42.94	58.06	4	0	55%	45%	49.74	2
4D - Dayboat Berners Bay	ALL	33.94	45.61	24	20	55%	45%	39.19	22

TABLE A-LXVIII

AMHS Fares per User and Road Miles
Auke Bay to Haines

Alternative	Leg	Mode	Individual Fare	Vehicle Fare	Users/ Vehicle	Total Fares/ User	Road Miles
1 - No Action	AUK-HNS	FVF/Main	27.45	64.40			
	HNS-LTK	Road					4.3
Total			**27.45**	**64.40**	**3.6**	**45.34**	**4.3**
Road Alternatives							
2 - East Lynn SGY	AUK-KTZ	Road					77.4
	KTZ-HNS	Shuttle	3.85	9.69			
	HNS-LTK	Road					4.3
Total			**3.85**	**9.69**	**2.3**	**8.06**	**81.7**
2A - East Lynn SGY	AUK-SAW	Road					32.0
	SAW-SLC	Shuttle	3.25	8.49			
	SLC-KTZ	Road					35.0
	KTZ-HNS	Shuttle	3.85	9.69			
	HNS-LTK	Road					4.3
Total			**7.09**	**18.18**	**2.3**	**14.99**	**71.3**
2B - East Lynn KTZ	AUK-KTZ	Road					77.4
	KTZ-HNS	Shuttle	3.85	9.69			
	HNS-LTK	Road					4.3
Total			**3.85**	**9.69**	**2.3**	**8.06**	**81.7**
2C - East Lynn SGY	AUK-SGY	Road					95.3
	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.3
Total			**5.67**	**13.34**	**2.3**	**11.47**	**99.6**
3 - West Lynn	AUK-SAW	Road					32.0
	SAW-WHB	Shuttle	5.39	12.77			
	WHB-HNS	Road					38.9
Total			**5.39**	**12.77**	**2.3**	**10.94**	**70.9**

TABLE A-LXVIII

AMHS Fares per User and Road Miles
Auke Bay to Haines

Alternative	Leg	Mode	Individual Fare	Vehicle Fare	Users/ Vehicle	Total Fares/ User	Road Miles
Marine Alternatives							
4A - FVF Auke Bay	AUK-HNS	FVF/Main	28.20	66.16			
	HNS-LTK	Road					4.3
Total			**28.20**	**66.16**	**3.6**	**46.58**	**4.3**
4B - FVF Berners Bay	AUK-SAW	Road					20.9
	AUK/SAW-HNS	FVF/Main	21.91	51.40			
	HNS-LTK	Road					4.3
Total			**21.91**	**51.40**	**3.6**	**36.18**	**25.2**
4C - Dayboat Auke Bay	AUK-HNS	Day/Main	26.00	61.00			
	HNS-LTK	Road					4.3
Total			**26.00**	**61.00**	**3.6**	**42.94**	**4.3**
4D - Dayboat Berners Bay	AUK-SAW	Road					19.6
	AUK/SAW-HNS	Day/Main	20.55	48.21			
	HNS-LTK	Road					4.3
Total			**20.55**	**48.21**	**3.6**	**33.94**	**23.9**

TABLE A-LXIX

AMHS Fares per User and Road Miles
Auke Bay to Skagway

Alternative	Legs	Mode	Individual Fare	Vehicle Fare	Users/ Vehicle	Total Fares/ User	Road Miles
1 - No Action	**AUK-SGY**	**FVF/Main**	**36.82**	**87.32**	**3.6**	**61.07**	**0.0**
Road Alternatives							
2 - East Lynn SGY	**AUK-SGY**	**Road**			**2.3**	**0.00**	**95.3**
2A - East Lynn SGY	AUK-SAW	Road					32.0
	SAW-SLC	Shuttle	3.25	8.49			
	SLC-SGY	Road					52.9
Total			**3.25**	**8.49**	**2.3**	**6.94**	**84.9**
2B - East Lynn KTZ	AUK-KTZ	Road					77.4
	KTZ-SGY	Shuttle	6.05	14.11			
Total			**6.05**	**14.11**	**2.3**	**12.19**	**77.4**
2C - East Lynn SGY	**AUK-SGY**	**Road**			**2.3**	**0.00**	**95.3**
3 - West Lynn	AUK-SAW	Road					32.0
	SAW-WHB	Shuttle	5.39	12.77			
	WHB-HNS	Road					38.9
	HNS-LTK	Road					4.3
	HNS-SGY	Shuttle	5.67	13.34			
Total			**11.06**	**26.11**	**2.3**	**22.41**	**75.2**

TABLE A-LXIX

AMHS Fares per User and Road Miles
Auke Bay to Skagway

Alternative	Legs	Mode	Individual Fare	Vehicle Fare	Users/ Vehicle	Total Fares/ User	Road Miles
Marine Alternatives							
4A - FVF Auke Bay	**AUK-SGY**	**FVF/Main**	**37.96**	**90.02**	**3.6**	**62.97**	**0.0**
4B - FVF Berners Bay	AUK-SAW	Road					19.6
	AUK/SAW-SGY	FVF/Main	29.71	70.45			
Total			**29.71**	**70.45**	**3.6**	**49.27**	**19.60**
4C - Dayboat Auke Bay	**AUK-SGY**	**Day/Main**	**35.00**	**83.00**	**3.6**	**58.06**	**0.0**
4D - Dayboat Berners Bay	AUK-SAW	Road					19.6
	AUK/SAW-SGY	Day/Main	27.50	65.20			
Total			**27.50**	**65.20**	**3.6**	**45.61**	**19.60**

TABLE A-LXX

AMHS Fares per User and Road Miles
Haines to Skagway

Alternative	Leg	Mode	Individual Fare	Vehicle Fare	Users/ Vehicle	Total Fares/ User	Road Miles
1 - No Action	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**
Road Alternatives							
2 - East Lynn SGY	KTZ-SGY	Road					17.90
	KTZ-HNS	Shuttle	3.85	9.69			
	HNS-LTK	Road					4.30
Total			**3.85**	**9.69**	**2.3**	**8.06**	**22.20**
2A - East Lynn SGY	KTZ-SGY	Road					17.90
	KTZ-HNS	Shuttle	3.85	9.69			
	HNS-LTK	Road					4.30
Total			**3.85**	**9.69**	**2.3**	**8.06**	**22.20**
2B - East Lynn KTZ	SGY-HNS	Shuttle	6.34	14.68			
	HNS-LTK	Road					4.30
Total			**6.34**	**14.68**	**2.3**	**12.72**	**4.30**
2C - East Lynn SGY	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**
3 - West Lynn	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**

TABLE A-LXX

AMHS Fares per User and Road Miles
Haines to Skagway

Alternative	Leg	Mode	Individual Fare	Vehicle Fare	Users/ Vehicle	Total Fares/ User	Road Miles
Marine Alternatives							
4A - FVF Auke Bay	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**
4B - FVF Berners Bay	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**
4C - Dayboat Auke Bay	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**
4D - Dayboat Berners Bay	SGY-HNS	Shuttle	5.67	13.34			
	HNS-LTK	Road					4.30
Total			**5.67**	**13.34**	**2.3**	**11.47**	**4.30**

TABLE A-LXXI

Economic Project Costs
Present Value of 2004-38 Costs as of 1/1/04
@ Private Sector Rate of Return
($000)

Alternative	Total Funds Capital Costs	Total Funds Operating Costs	Total Funds Revenue	Total Funds Total	State Funds Capital Costs	State Funds Operating Costs	State Funds Revenue	State Funds Total
1 - No Action	59,901	143,101	(98,750)	104,252	5,409	143,101	(98,732)	49,778
2 - East Lynn with Katzehin	239,391	86,239	(48,808)	276,822	21,617	86,239	(46,928)	60,929
2A - East Lynn with Berners Shuttle	245,639	122,501	(70,403)	297,737	22,181	122,501	(69,153)	75,529
2B - East Lynn to Katzehin	203,997	127,101	(70,990)	260,108	18,421	127,101	(69,770)	75,752
2C - East Lynn without Katzehin	221,867	84,993	(45,817)	261,043	20,035	84,993	(44,221)	60,806
3 - West Lynn Highway	224,055	129,161	(75,666)	277,550	20,232	129,161	(74,770)	74,622
4A - FVF Auke Bay	166,139	206,339	(143,157)	229,320	15,002	206,339	(143,134)	78,207
4B - FVF Berners Bay	173,284	195,446	(134,945)	233,786	15,648	195,446	(134,792)	76,302
4C - Dayboat Auke Bay	111,286	156,925	(102,665)	165,545	10,049	156,925	(102,646)	64,328
4D - Dayboat Berners Bay	105,884	153,480	(104,619)	154,746	9,561	153,480	(104,502)	58,540

APPENDIX B

Marine Segments Analysis,
Mainline Vessel and FVF costs
for Alternative 1 and Alternatives 4A – 4D

Prepared by State of Alaska Department of Transportation & Public Facilities

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Marine Segments Analysis

Mainline Vessel and FVF costs for Alternative 1 and Alternatives 4A - 4D

Introduction

For the Supplemental Draft Environmental Impact Statement (SDEIS) some level of AMHS mainline vessel service is provided for Alternative 1 and Alternatives 4A through 4D. Under Alternative 1, the No Build alternative, AMHS would provide 3 mainline vessel round-trips per week year round and the Fast Vehicle Ferry (FVF) Fairweather. Under Alternatives 4A through 4D AMHS would provide 2 mainline vessel round-trips per week. This analysis was prepared to establish the costs to provide mainline and FVF service in Lynn Canal for Alternative 1 and Alternatives 4A, 4B, 4C, and 4D. The cost to provide any new service is identified in the Marine Segments Report.

The mainline vessels that will operate in Lynn Canal have not been identified for the Juneau Access Improvements alternatives. For the purpose of this analysis, the Columbia which operates out of Bellingham, WA and the Matanuska and Kennicott which operate out of Prince Rupert, B.C. were selected as representative vessels of those that would serve Lynn Canal.

Methodology

The total vessel operating hours for each vessel were calculated by multiplying the annual vessel operating weeks (from *2002 Annual Traffic Volume Report*) by 7 days per week and 24 hours per day. The total vessel hours in Lynn Canal were established using 2002 published AMHS Ferry Schedules. The percent of time in Lynn Canal for each vessel was calculated by dividing the hours in Lynn Canal by the total vessel operating hours, see Table 1.

For the Fairweather, the percent of time in Lynn Canal was determined based on the number of days it will operate in Lynn Canal, 5 days per week in summer and 2 days per week in winter. For the purpose of this analysis, the summer season percentage was used (5/7).

Table 1.

2002 Percent of Time in Lynn Canal by Vessel

Vessel	Total Operating Hours	Total Hours in Lynn Canal	% Time in Lynn Canal
Columbia	2208	253	0.115
Matanuska	6864	842	0.123
Kennicott	6384	1006	0.158
Fairweather			0.714

Historical annual expenditures by vessel were obtained from the *2002 AMHS Annual Financial Report* and are listed in Table 2.

The total annual vessel expenditures were calculated by subtracting "All Vessels S.E." expenditures from the Total S.E. This total was used to determine the All Vessels S.E. expenditures by vessel for Table 4.

Table 2.
Summary of Southeast Annual Expenditures (in thousands)

	1995	1996	1997	1998	1999	2000	2001	2002
Columbia	9,081	11,731	9,607	8,470	8,047	6,190	1,851	5,946
Matanuska	6,357	7,100	5,561	9,298	6,606	10,392	7,626	10,780
Malaspina	9,743	9,760	9,995	6,351	3,639	4,206	6,296	4,265
Taku	8,791	5,278	9,676	8,627	8,757	6,628	10,188	9,249
Aurora	5,536	5,221	3,820	5,115	5,161	6,141	4,849	3,673
Leconte	5,037	5,457	5,885	5,042	5,564	4,630	6,767	6,392
Kennicott				858	10,365	11,130	12,974	10,780
TOTAL	**44,545**	**44,547**	**44,544**	**43,761**	**48,139**	**49,317**	**50,551**	**51,085**
All Vessels S.E.	4,666	5,171	5,455	5,664	6,287	6,209	7,825	6,792
Total S.E.	49,212	49,718	50,000	49,425	54,426	55,526	58,676	57,878

Operation & Maintenance Costs

The average annual expenditures for each vessel (Table 3) were calculated by averaging the most recent 4-5 year time period representative of the vessels annual expenditures. The Columbia average was based on 1995-1999 (to avoid the years with decreased service due to vessel electrical problems and fire), the Matanuska average was based on 1998-2002, and the Kennicott average was based on the years 1999-2002 (the four years it has been in service).

Table 3.
Average Annual Expenditures by Vessel (in thousands)

	1995	1996	1997	1998	1999	2000	2001	2002	Average
Columbia	9,081	11,731	9,607	8,470	8,047				**9,387**
Matanuska				9,298	6,606	10,392	7,926	10,780	**9,000**
Kennicott					10,365	11,130	12,974	10,780	**11,312**

All Vessels S.E. expenditures attributable to each vessel (Table 4) were calculated by dividing the vessels average annual expenditures (from Table 3) by the vessels annual total expenditures (from Table 2) and multiplying by the total annual "All Vessels S.E" (from Table 2).

Table 4.
All Vessels S.E. Expenditures by Vessel (in thousands)

	1995	1996	1997	1998	1999	2000	2001	2002	Average
Columbia	951	1,362	1,177	1,096	1,051				**1,127**
Matanuska				1,203	863	1,308	1,180	1,433	**1,198**
Kennicott					1,354	1,401	2,008	1,433	**1,549**

The O&M cost per vessel was calculated by summing the average annual expenditures (Table 3) and average All Vessels S.E. expenditures (Table 4) and multiplying by the percent of time the vessel was in Lynn Canal, see Table 5.

Table 5.
O&M Costs to Lynn Canal by Vessel (in thousands)

	Average Annual Expenditures	Average All Vessels S.E. Expenditures	Total	% Time in Lynn Canal	0&M Costs to Lynn Canal
Columbia	9,387	1,127	10,514	0.115	**1,209**
Matanuska	9,000	1,198	10,198	0.123	**1,254**
Kennicott	11,312	1,549	12,861	0.158	**2,032**
***Fairweather**	2,627	-	2,627	-	**2,627**

*Fairweather O&M costs were calculated based on the amount of time it is scheduled to operate in Lynn Canal. The average annual expenditures were determined from summing the fuel costs, crew costs, electricity costs, and sewer costs in summer and winter. See Annual Projected FVF Fairweather Operating Costs in Lynn Canal, pg. 7.

Management Costs

The average total system management expenditures were determined by subtracting the total annual expenditures including administration/management for all vessels from the total annual expenditures without administration costs. The difference between these two expenditure summaries is the cost to cover the expense of terminal operations, reservations and marketing, engineering and administrative expenses (from *AMHS Annual Financial Reports*), see Table 6.

Table 6.

Average Total System Management Expenditures

(in thousands)

	1998	1999	2000	2001	2002	Average
Vessel Expenditures	58,884	63,924	65,482	69,322	68,551	65,233
Total w/ Administration	68,027	73,979	75,229	81,741	79,594	75,714
Difference	**9,143**	**10,055**	**9,747**	**12,419**	**11,043**	**10,481**

The Lynn Canal management costs per vessel were determined by dividing the average difference between the total expenditures and the management/ administration expenditures (from Table 6) by 10 vessels (total fleet) and multiplying by the percent of time the vessel operates in Lynn Canal, see Table 7.

Table 7.

Lynn Canal Management Costs by Vessel

Vessel	% Time in Lynn Canal	Ave. Admin.-Mgmt / 10 vessels	Total Lynn Canal Mgmt Costs
Columbia	0.115	1,048,100	120,532
Matanuska	0.123	1,048,100	128,916
Kennicott	0.158	1,048,100	165,600
Fairweather	0.714	1,048,100	748,343

CIP Costs

CIP costs by vessel for 2001-2010 were taken from the *1998 Alaska Marine Highway Vessel Refurbishment and Fleet Replacement Study* prepared by the Glosten and Associates, Inc. The average annual Capital Improvement Project (CIP) costs per vessel was determined by dividing the annual CIP cost by 10 years, see Table 8. The CIP cost attributable to Lynn Canal was calculated by multiplying the annual CIP cost per vessel by the percent of time the vessel operates in Lynn Canal. (Terminal CIP projects not included.)

Table 8.
Annual CIP Costs by Vessel

Vessel	CIP Costs 2001-2010 (millions)	Average Annual Cost (millions)	% of Time in Lynn Canal	Annual Cost attributable to Lynn Canal
Columbia	$42.8	$4.3	0.115	$494,500
Kennicott	$21.6	$2.2	0.123	$270,600
Matanuska	$46.6	$4.7	0.158	$742,600
*Fairweather	$13.4	$1.3	0.714	$928,200
Total	**$124.4**	**$12.4**		**$2,435,900**

**Fairweather CIP costs were taken from the 2000 FVF Design Study Report.*

Configuration Cost Summaries

For the Juneau Access Improvements Project, AMHS service in Lynn Canal is provided for some alternatives. Alternative 1, the No Build alternative, will have 3 mainline vessel round-trips per week, year round and 1 FVF operating 5 days per week in Lynn Canal during summer and 2 days per week during winter.

The configuration cost summary was prepared for the costs of the Columbia, Matanuska, and Kennicott mainline vessels and the Fairweather fast vehicle ferry. FVF acquisition costs were based on recent acquisition costs of 38 million for the cost of the Fairweather. Mainline vessel acquisition costs for future vessels are based on the recent State Transportation Improvement Program (STIP) cost of 120 million to replace the Malaspina.

Alternative 1- No Build

	Annual Costs			Capital Costs	
	O&M	**Mgmt**	**Total**	**CIP**	**Acquisition**
Mainline Vessel (3)	4,496,000	415,048	4,911,048	1,507,700	120,000,000
FVF (1)	2,627,000	748,343	3,375,343	928,200	38,000,000
HNS-SGY Shuttle*					
Configuration Total	**7,123,000**	**1,163,391**	**8,286,391**	**2,435,900**	**158,000,000**

**HNS-SGY shuttle costs, extracted from the final Marine Segments Analysis Report.*

The AMHS service for the Alternative 4A through 4D marine alternatives would provide 2 mainline vessel round-trips per week year round. The configuration cost summary was prepared for the cost of the Columbia and Kennicott mainline vessels.

Alternatives 4A - 4D

	Annual Costs			Capital Costs	
	O&M	**Mgmt**	**Total**	**CIP**	**Acquisition**
Mainline Vessel (2)	3,241,000	286,131	3,527,131	765,100	
HNS-SGY Shuttle*					

**HNS-SGY shuttle costs, extracted from the final Marine Segments Analysis Report.*

Annual Projected FVF Fairweather Operation and Maintenance Costs in Lynn Canal

Assumptions:

- Fuel burned: 600 gallons/hour average (710 gph @ 32 knots, from sea trials)
- 12 hour operation per day
- Crew cost: $6,654/day (from FVF Design Study Report)
- 22 weeks (153 days) summer and 30 weeks (212 days) in winter
- Lynn Canal service: 5 days/week summer, 2 days/week winter
- Fuel cost: $1.02/gallon
- Electricity: $200/day summer, $300/day winter (estimate)
- Sewer: $300/ operation day (estimate)
- Night Maintenance Crew (3-man, 8hrs/day, $35/hr): $840/day

Annual Projected Fairweather Operating Costs in Lynn Canal

M&O	Calculations	Total Cost
Fuel		
summer	[600 gph] * [12 hrs/day] * [5 days/wk] * [22 wks] * [$1.02/gal]	$807,840
winter	[600 gph] * [12 hrs/day] * [2 days/wk] * [30 wks] * [$1.02/gal]	$440,640
Crew		
summer	[$6,654/day] * [5 days/wk] * [22 wks]	$731,940
winter	[$6,654/day] * [2 days/wk] * [30 wks]	$399,240
Night Maint. Summer	[$840/day] * [5 days/wk] * [22 wks]	$92,400
Night Maint. Winter	[$840/day] * [2 days/wk] * [30 wks]	$50,400
****Electricity***		
Summer	[$200/day] * [153 days] * [5/7]	$21,857
Winter	[$300/day] * [212 days] * [.5]	$31,800
Sewer		
Summer	[$300/day] * [5 days/wk] * 22 wks]	$33,000
Winter	[$300/day] * [2 days/wk] * [30 wks]	$18,000
Total		**$2,627,117**

*Electrical power required 365 days/year with or without operation. Summer allocation is 5 days/week in Lynn Canal and 2 days/week to Sitka. Winter allocation is 2 days/week to Sitka and 2 days/week in Lynn Canal, or 50% of electrical power requirement.

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APPENDIX C

Alaska Marine Highway System Lynn Canal Corridor

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03/03/04

Alaska Marine Highway System
Lynn Canal Corridor

Revenues and Expenditures

2001 - 2002

&

Projected Capital Costs

2001 - 2038

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Executive Summary

This report is source documentation for Juneau Access Purpose and Need Element No. 4 - Reduce State costs for transportation in the Lynn Canal corridor.

This analysis relies on source documents published by the Alaska Marine Highway System (AMHS) that are available to the general public. Source documentation used for revenues and expenditures were the 2001 and 2002 Annual Traffic Volume Reports, the 2001 and 2002 Annual Financial Reports, and the 2001 and 2002 Ferry Schedules. Source documentation used for the Capital Improvement Projects for 2001-2010 was the 2002 Fleet Condition Survey Update, prepared for AMHS by The Glosten Associates and 2000 Fast Vehicle Ferry Design Study Report prepared for AMHS by The Glosten Associates.

Annual expenditures and revenues for the AMHS are published each year in compliance with AS 19.65.080. In State Fiscal Year 2001 (FY01) total revenues were $37.6 million, or 46 percent, of statewide expenditures of $81.7 million. In FY02 total revenues were $39.5 million, or 50 percent, of statewide expenditures of $79.6 million. See Appendix H.

For this analysis the time period July 1, 2000 to June 30, 2002 for FY01 and FY02 was used. This time period provides the most recently published AMHS data. Since AMHS does not report expenditures and revenues for a specific corridor, determining this information for the Lynn Canal corridor required compiling information from 2001 and 2002 AMHS reports and performing several calculations.

This analysis determined that the cost to provide AMHS service in Lynn Canal between Juneau, Haines, and Skagway in FY01 for the corridor was $10.4 million (13 percent of statewide expenditures) and revenues were $5.5 million (15 percent of statewide revenues). The cost in FY02 was $11.5 million (14 percent of statewide expenditures) and revenues were $6.4 million (16 percent of statewide revenues).

Summary of Revenues and Expenditures in Lynn Canal

Year	Expenditures	Revenues	State Subsidy
FY01	**$10,429,540**	**$5,460,155**	**$4,969,385**
FY02	**$11,541,680**	**$6,361,268**	**$5,180,412**

For FY01 in Lynn Canal corridor there were revenues of $5.5 million (53 percent) and expenditures of $10.4 million resulting in a state subsidy of $5 million. For FY02 there were revenues of $6.4 million (56 percent) and expenditures of $11.5 million resulting in a state subsidy of $5.2 million.

Introduction

The Lynn Canal corridor includes the communities of Juneau, Haines, and Skagway. It is interesting to note that the 2001 and 2002 passenger and vehicle revenues show that 76 percent of the passenger revenue and 71 percent of the vehicle revenue collected for passage through Lynn Canal embarks or disembarks in Juneau. See Appendix C. This establishes that a majority of the revenue in Lynn Canal is to and from Juneau, not through-traffic.

AMHS reports system total revenues for several sources including passenger traffic, vehicle traffic, and stateroom and passenger services usage. In the Lynn Canal corridor, for 2001 and 2002, passenger and vehicle revenues each annually average over $2 million. In addition to passenger and vehicle revenue are stateroom usage and passenger services revenue. In the Lynn Canal corridor, passenger services revenue annually averages approximately $600 thousand. Stateroom revenue annually averages approximately $300 thousand.

In 2001, the revenues attributable to Lynn Canal accounted for $5.5 million, or 15 percent, of statewide revenue of $37.6 million. In 2002, the revenue attributable to Lynn Canal accounted for $6.4 million, or 16 percent, of the statewide revenue of $39.5 million. See Tables 8 and 20 and Appendix D.

The cost to provide transportation in Lynn Canal for FY01 was $10.4 million and revenue was $5.5 million, or 53 percent. The total state subsidy to provide transportation in Lynn Canal for FY01 was $5.0 million. The cost to provide transportation in Lynn Canal for FY02 was $11.5 million and the revenue was $6.4 million, or 56 percent. The total state subsidy to provide transportation in Lynn Canal for FY02 was $5.2 million.

The following sections provide the methodology used to calculate expenditures, revenues and capital costs for the Lynn Canal corridor.

Methodology

Passenger and Vehicle Revenue

For Lynn Canal corridor calculations, an average passenger fare was calculated using the *Passenger Traffic by Tariff Code* from the 2001 and 2002 Annual Traffic Volume Reports, see Appendix A. Systemwide, the average passenger fare was calculated to be approximately 80 percent of the published adult fare. The 80 percent factor is due to discountable fares including seniors, children under 12yrs, group rates, and winter driver discounts. Summer fares were used since it is the season with the highest traffic volumes. The average vehicle fare was established by averaging all the *Recreational Vehicles by Length & Van and Vehicle Traffic by Tariff Code* from the 2001 and 2002 Annual Traffic Volume Reports, see Appendix B.

For the Appendix B model, the Juneau to Haines route was selected for comparison. Using the 2001 and 2002 vehicle traffic and published fares, the model demonstrates that a 21-foot vehicle reasonably approximates the fleet mix.

Lynn Canal corridor revenue was established by multiplying the passenger and vehicle volumes (AMHS Annual Traffic Volume Reports S*ummary of on/off Passenger and Vehicle Traffic by Port*) by the established passenger and vehicle fare. See Tables 1,2,13, and 14 and Appendix E. To determine revenues for Lynn Canal corridor, two calculations were used. For travel inside Lynn Canal corridor equations 1 and 3 were used and for travel outside of Lynn Canal corridor equations 2 and 4 were used, see below.

Vehicle Revenue Attributable to Lynn Canal

To calculate vehicle revenue between Juneau/Haines, Juneau/Skagway, and Haines/Skagway, both directions, the revenue equals the total number of vehicles times the published 21-foot vehicle fare (Equation 1). To calculate the revenue for vehicles embarking in Haines and disembarking in Skagway in 2001 (row 2, cell 1 of 2001 vehicle revenue Table 2) see below.

Equation 1: [3,747[1] number of vehicles disembarking in Skagway] x [$40 vehicle fare] = [$149,880 revenue from vehicles traveling from Haines to Skagway in 2001].

[1] See Appendix E for AMHS volumes for vehicles/passengers embarking or disembarking in each community.

To calculate vehicle traffic revenue outside of the Lynn Canal corridor, the number of vehicles that traveled was multiplied by mileage within the Lynn Canal corridor[2] divided by the total route mileage, and multiplied by the published 21-foot vehicle fare (Equation 2). To calculate revenue for vehicles embarking in Sitka and disembarking in Skagway in 2001 (row 4, cell 1 of 2001 vehicle revenue Table 2) see below.

Equation 2: [123 number of vehicles disembarking in Skagway] x [93 miles within Lynn Canal/245 miles total] x [$174 vehicle fare] = [$8,124 vehicle revenue attributable to Lynn Canal from vehicles traveling from Sitka to Skagway in 2001].

Passenger Revenue Attributable to Lynn Canal

To calculate passenger revenue between Juneau/Haines, Juneau/Skagway, and Haines/Skagway, both directions, the revenue equals the total number of passengers, times the 80 percent factor stated above, times the published adult fare (Equation 3). To calculate the revenue for passengers embarking in Skagway and disembarking in Haines in 2001 (row1, cell 2 of 2001 passenger revenue Table 1) see below.

Equation 3: [6,813 number of passengers disembarking in Haines] x [80 percent discount factor] x [$18 adult fare] = [$98,107 passenger revenue from Skagway to Haines in 2001].

To calculate revenue for passenger traffic outside of the Lynn Canal corridor, the total number of passengers that traveled was multiplied by the mileage within the Lynn Canal corridor divided by the total route mileage[2], multiplied by the 80 percent factor and multiplied by the published adult fare (Equation 4). To calculate the revenue attributable to Lynn Canal for passengers embarking in Sitka and disembarking in Skagway in 2001 (row 4, cell 1 of 2001 passenger revenue Table 1) see below.

Equation 4: [572 number of passengers disembarking in Skagway] x [93mi within Canal /245mi total] x [80 percent discount factor] x [$51 adult fare] = [$8,859 passenger revenue attributable to Lynn Canal from Sitka to Skagway in 2001].

[2] See Appendix F for trip lengths taken from Annual Traffic Volume Report.

Stateroom and Passenger Services Revenue

AMHS reports stateroom usage annually by route in the *Link Volume Summary Report of Stateroom Usage* 2001 and 2002 AMHS Annual Traffic Volume Reports.

Passenger services revenue includes dining room/cafeteria sales, bar sales, gift shop sales and vending machine sales. AMHS does not report passenger services revenue by route, however they provide the percent of total revenues per year that is attributable to passenger services revenue.

Stateroom Revenue Attributable to Lynn Canal

According to the 2001 and 2002 AMHS Annual Financial Reports, 10 percent of statewide revenue in 2001 was stateroom sales and 11 percent in 2002. See Appendix H.

The percent of stateroom usage in Lynn Canal was calculated by dividing stateroom miles in Lynn Canal by statewide stateroom miles. For FY01, Table 4 shows the total statewide stateroom miles (14,029,467) and Table 5 shows the total stateroom miles in Lynn Canal (977,863). Also see Tables 16 and 17 and Appendix G, for FY01 and FY02.

Stateroom revenue attributable to Lynn Canal corridor was calculated by multiplying the percent of stateroom revenue by the total systemwide revenue and then multiplied by the percent of stateroom usage in Lynn Canal (Equation 5). To calculate the stateroom revenue attributable to Lynn Canal for 2001 (Table 7) see below.

Equation 5: 0.10 (percent stateroom revenue) x $37,552,300 (total systemwide revenue) x 0.07 (percent stateroom usage in Lynn Canal) = $262,866 (stateroom revenue attributable to Lynn Canal).

Passenger Services Revenue Attributable to Lynn Canal

According to the 2001 and 2002 AMHS Annual Financial Reports, 10 percent of statewide revenue in 2001 was passenger services revenue and 9 percent in 2002. See Appendix H.

Passenger services revenue attributable to Lynn Canal corridor was calculated by taking the percent of passenger services revenue multiplied by the total vessel annual revenue and multiplied by the vessel percent of time operating in Lynn Canal (Equation 6). To calculate the passenger services revenue attributable to Lynn Canal for FY02 for the M/V Columbia, row 1 of Table 18, see below.

Equation 6: 0.09 (percent passenger services revenue) x $5,354,000 (Columbia FY02 Revenue) x .1146 (percent operating time in Lynn Canal) = $55,221.16 (passenger services revenue, for the M/V Columbia, attributable to Lynn Canal).

The total passenger services revenue for Lynn Canal, for FY02, is obtained from the sum of all the vessels that operated in Lynn Canal (Table 18).

AMHS Expenditures

Vessel Operating Hours

The total vessel operating hours for each vessel was calculated by multiplying the annual vessel operating weeks (taken from 2001 and 2002 Annual Traffic Volume Reports, *Operating Plan,* pg. 6) by 7 days/week and 24 hours/day. See Appendix I. The total vessel hours in Lynn Canal was established using 2001 and 2002 published AMHS Ferry Schedules.

Operating Expenses Attributable to Lynn Canal

The annual operating expenses attributable to Lynn Canal were calculated by dividing the vessel hours in Lynn Canal by the total operating hours and multiplying by the annual expense per vessel (2001 and 2002 AMHS Annual Financial Reports, pp.12) (Equation 7). To calculate the M/V Aurora total operating expense attributable to Lynn Canal (row 1 cell 4, Table 11).

Equation 7: [103/5016 total vessel hours in Lynn Canal/total operating hours] x [$4,849,000 annual expense] = [$99,087 M/V Aurora total operating expense attributable to Lynn Canal].

All Vessels S.E. Expenses Attributable to Lynn Canal

The AMHS Annual Financial Reports include an item in the expenditures by vessel summary as *All Vessels S.E.,* Table 11. The *All Vessels S.E.* expenses attributable to Lynn Canal, was calculated based on the percent of the fleet operating time in Lynn Canal. According to the 2001 AMHS Annual Financial Report, the *All Vessels S.E.* annual expenses were $7,825,000. See Appendix D. To calculate the *All Vessels S.E.* expenses attributable to Lynn Canal, the annual expense was multiplied by the percent of vessel hours in Lynn Canal (determined by dividing vessel operating hours in Lynn Canal by total vessel operating hours) (Equation

8). To calculate the total *All Vessels S.E.* expenses attributable to Lynn Canal for 2001, row 8, cell 4 (Table 11) see below.

Equation 8: [$7,825,000 annual expense] x [5,117/36,984 total Lynn Canal Operating Hours/total vessel operating hours] = [$1,082,645 Total *All Vessels S.E.* expenses attributable to Lynn Canal].

System Management Expenses Attributable to Lynn Canal

The AMHS Annual Financial Reports provide two different expenditure summaries. The first is the total AMHS Fund Expenditures that identify the total expense of operating the AMHS for the year. See Appendix H. The second is the AMHS expenditures by vessel that identifies the expenditures attributable to each vessel. See Appendix D. The difference between these two expenditure summaries, which this report identifies as System Management Expenses is to cover the expense of terminal operations, reservations and marketing, engineering and administrative expenses. The total System Management Expense was $12,419,000 for FY01 and $11,043,000 for FY02. The System Management Expense attributable to Lynn Canal was calculated by multiplying the total System Management Expense times the ratio of the total SE expenditures by vessel to total system expenditures by vessel times the percent of operating hours in Lynn Canal (Equation 9). Equation 9 was used to calculate the FY01 System Management Expense attributable to Lynn Canal and Equation 10 was used for FY02, see below.

Equation 9: [$12,419,000 total System Management Expense] x [$58,676,000/69,322,000 expenditures SE/ total expenditures] x [5,117/36,984 vessel hours in Lynn Canal/ total SE vessel operating hours] = [$1,454,379 System Management Expenses for FY01].

Equation 10: [$11,043,000 total System Management Expense] x [$57,878,000/68,551,000 expenditures SE/ total expenditures] x [5712/37,104 vessel hours in Lynn Canal/ total SE vessel operating hours] = [$1,435,338 System Management Expenses for FY02].

Capital Improvement Program (CIP) Costs

Capital Costs Attributable to Lynn Canal

The preceding sections of this report addressed operating costs in the form of revenues and expenses for the daily operation of the AMHS.

Another key component of operating the AMHS is the Capital Improvement Program (CIP) necessary to keep the vessels operational and in compliance with regulatory requirements. Most CIP projects for the AMHS are funded at 80-100 percent, by the Federal Highway Administration (FHWA) while the State provides the necessary match depending on the source. In order for the CIP projects to be funded, they need to be included in the Statewide Transportation Improvement Program (STIP). CIP projects are identified in the regional transportation plans, such as the Southeast Alaska Transportation Plan (SATP) and the Prince William Sound AreaTransportation Plan. These regional plans identify the direction the department will take to meet the states transportation needs. Currently the SATP is being updated. The update proposes to replace most of the existing AMHS Southeast Alaska fleet with dayboats operating point-to-point.

In order to calculate future CIP project costs attributable to Lynn Canal, the AMHS Fleet Condition reports, the SATP, the 2000 Fast Vehicle Ferry Design Study Report, and the published 2004 AMHS schedules were used. AMHS periodically performs a fleet condition survey that identifies short- and long-term projects necessary to maintain the existing fleet. The most recent report of this kind is the March 2002 Fleet Condition Survey Update prepared for the AMHS by The Glosten Associates which updates the CIP costs for the years 2001 through 2010. The most recent report with long-term fleet costs is the 1998 AMHS Vessel Refurbishment and Fleet Replacement Study.

Based on recent vessel deployment in Lynn Canal and the draft SATP, it is apparent that Lynn Canal ferry service is in a state of transition. In 2003, the M/V Malaspina dayboat was replaced by a combination of the M/V Taku and other through-vessels departing from Juneau at the same time daily. In 2004 the M/V Taku will be removed from scheduled service and the only dayboat service will be the FVF Fairweather 5 days per week to Haines and 4 days per week to Skagway, with reduced service between Haines and Skagway provided by approximately 5 mainliners per week.

The following known vessel assignments were used in the CIP cost analysis:

- M/V Columbia and M/V Malaspina operating from Bellingham once weekly (during summer) throughout Southeast Alaska.
- FVF Fairweather operating 5 days per week in Lynn Canal.
- M/V Matanuska operating from Prince Rupert 2 times weekly throughout Southeast Alaska.
- M/V Aurora deployed to Prince William Sound in 2004.
- The SATP gradually adds FVF's to the fleet for the period 2001-2010. After 2010, the dayboat shuttle system would be in place and mainline vessels (other than the Kennicott) would only operate out of Bellingham.
- After 2010 the 2004 SATP update calls for only the M/V Columbia, M/V Malaspina (or its replacement) and the M/V Kennicott to be the mainline vessels still in operation.
- For the No Build Alternative in the Juneau Access project, the Columbia and Malaspina would continue to make one round trip per week to and from Bellingham.

The following assumptions were used:

- Up to 2010, the M/V LeConte and M/V Kennicott would operate in Lynn Canal a similar percent of the time that they did in 2002.
- The Glosten Associates 2002 report did not list the M/V Malaspina. For the M/V Malaspina CIP data, the 1998 AMHS Vessel Refurbishment and Fleet Replacement Study was used.
- The 2000 Fast Vehicle Ferry Design Study Report for FVF Fairweather was used to determine the annual CIP projects.
- The Haines-Skagway shuttle CIP costs would be the same as the M/V Aurora CIP costs for 2011-2038 in the *1998 AMHS Vessel Refurbishment and Fleet Replacement Study*. (It is likely that the M/V Aurora would be the Haines-Skagway shuttle, as identified in the SATP).
- For the purpose of this analysis, the assumption was made that the mainline vessels would continue to operate at their current levels until 2010.
- After 2010, the percent of time in Lynn Canal for the M/V Kennicott was assumed to be about equal to the percentage the M/V LeConte currently spends in Lynn Canal, approximately 4 percent. This is the amount of time spent as an off season backup vessel.

The annual CIP cost per vessel attributable to Lynn Canal was calculated by multiplying the CIP cost per year by the percent of time the vessel operates in Lynn Canal. Equation 11 was used to calculate the annual CIP project costs attributable to Lynn Canal for the FVF Fairweather. In 2004, the FVF Fairweather will operate 5 days/week in Lynn Canal. The FVF Fairweather estimated CIP costs were the sum of the machinery components costs and hull and outfitting costs[3]. See Table 25.

[3] **From the AMHS 2000 Fast Vehicle Ferry Design Study Report.**

Equation 11: [5/7 days/week] x [$1,340,000 total annual CIP cost] = [$957,143 Annual CIP to Lynn Canal]

In Table 27 to calculate vessel replacement for the FVF Fairweather, the FVF Design Study Report states a 20-year life for the FVF Fairweather and the current AMHS estimate is 30 years. The 30-year estimate was accepted for this analysis and a $40 million vessel replacement cost was added to the CIP at the end of 30 years.

The M/V Malaspina replacement vessel's CIP costs were estimated from the CIP costs for the Kennicott included in the 1998 Vessel Refurbishment and Fleet Replacement Study. This report identifies the stream of CIP projects necessary for the life of the Kennicott. Using the acquisition cost of the M/V Kennicott of $90 million, and the annual CIP projects, the same percentage was applied to the $120 million cost of the M/V Malaspina replacement vessel to determine it's CIP costs. The percent of annual CIP cost divided by the replacement cost for the M/V Kennicott beginning the year it was purchased times the replacement cost of the M/V Malaspina for each year. The year 2013 is 2 years after the M/V Malaspina will be replaced while 2001 was 2 years after the M/V Kennicott began service. The M/V Kennicott CIP cost for 2001 was $5.4 million[4]. Equation 12 was used to calculate the CIP costs for the M/V Malaspina replacement vessel for 2011-2038.

Equation 12: [$5,400,000 CIP cost in 2002 for M/V Kennicott / $90,000,000 M/V Kennicott replacement cost] x [$120,000,000 M/V Malaspina replacement cost] = [$7,200,000 M/V Malaspina 2013 CIP cost].

For the HNS-SGY shuttle CIP costs, the CIP costs for the Aurora were used. The SATP update calls for the M/V Aurora to become the Haines/Skagway shuttle in 2005.

[4] **1998 AMHS Vessel Refurbishment and Fleet Replacement Study.**

FY01 AMHS Revenue Attributable to Lynn Canal

2001 Passenger Revenue Attributable to Lynn Canal

Table 1.

Port	Skagway (disembark)	Haines (disembark)	Skagway (embark)	Haines (embark)	TOTAL
Skagway		$98,107			
Haines	$125,136				
Juneau	$375,091	$347,750	$378,163	$348,864	
Sitka	$8,859	$9,407	$9,401	$10,899	
Petersburg	$4,720	$5,647	$4,878	$5,396	
Wrangell	$2,737	$5,031	$2,058	$4,750	
Ketchikan	$9,920	$16,943	$11,519	$12,724	
Prince Rupert	$43,396	$26,697	$43,669	$28,952	
Hollis	$20	$866	$434	$962	
Metlakatla			$0	$17	
Hoonah	$1,654	$7,319	$1,678	$1,665	
Pelican			$0	$0	
Tenakee	$0	$64	$0	$52	
Angoon	$80	$16	$179	$112	
Kake	$0	$0	$259	$282	
Bellingham	$40,056	$64,987	$41,291	$56,628	
TOTAL	**$611,669**	**$582,833**	**$493,530**	**$471,302**	**$2,159,334**

2001 Vehicle Revenue Attributable to Lynn Canal

Table 2.

Port	Skagway (disembark)	Haines (disembark)	Skagway (embark)	Haines (embark)	TOTAL
Skagway		$115,760			
Haines	$149,880				
Juneau	$328,016	$441,484	$323,440	$423,396	
Sitka	$8,124	$13,301	$12,483	$14,054	
Petersburg	$2,993	$8,513	$2,511	$5,386	
Wrangell	$1,430	$7,960	$1,565	$6,353	
Ketchikan	$8,072	$30,216	$7,165	$30,583	
Prince Rupert	$30,225	$52,209	$39,525	$58,982	
Hollis	$0	$1,343	$87	$2,544	
Metlakatla			$0	$73	
Hoonah	$865	$1,035	$577	$1,700	
Pelican			$0	$0	
Tenakee	$0	$0	$0	$0	
Angoon	$171	$130	$256	$65	
Kake	$0	$0	$101	$729	
Bellingham	$30,420	$137,186	$29,678	$114,822	
TOTAL	**$560,196**	**$809,136**	**$417,389**	**$658,686**	**$2,445,406**

2001 Stateroom and Passenger Services
Revenue attributable to Lynn Canal

2001 System Total Revenue[5]
Table 3.

Vessel	State FY 2001 Revenues
Columbia	$0
Matanuska	$8,928,900
Malaspina	$5,808,600
Taku	$5,549,200
Aurora	$1,655,100
LeConte	$1,771,100
Bartlett	$1,914,400
Tustumena	$2,935,400
Kennicott	$8,944,800
Non-Specific	$44,800
TOTAL	**$37,552,300**

2001 Statewide Stateroom Miles[6]
Table 4.

Region	Stateroom Miles
SE	12,801,114
SW	1,228,353
Total	**14,029,467**

2001 Stateroom Miles in Lynn Canal
Table 5.

Route	Stateroom Miles
HNS-JNU	479,944
HNS-SGY	35,880
JNU-HNS	413,372
JNU-SGY	3,726
SGY-HNS	44,941
SGY-JNU	0
Total	**977,863**
Percent Lynn Canal Stateroom use	**0.07**

[5] **See Appendix D- System Total Revenue from 2001 AMHS Annual Financial Report.**
[6] **See Appendix G- Stateroom Miles from 2001 AMHS Annual Traffic Volume Report.**

2001 Passenger Services Revenue in Lynn Canal

Table 6.

Vessel	State FY 2001 Revenues	% Time in Lynn Canal	% Passenger Services Revenue	Passenger Services Revenue
Columbia	$0	0 (0%)	0.10	$0
Matanuska	$8,928,900	0.0686 (6.8%)	0.10	$61,252
Malaspina	$5,808,600	0.5320 (53.2%)	0.10	$309,018
Taku	$5,549,200	0.1515 (15.1%)	0.10	$84,070
Aurora	$1,655,100	0.0204 (2.0%)	0.10	$3,376
LeConte	$1,771,100	0.0477 (4.8%)	0.10	$8,448
Bartlett	$1,914,400	0 (0%)	0.10	$0
Tustumena	$2,935,400	0 (0%)	0.10	$0
Kennicott	$8,944,800	0.1406 (14.0%)	0.10	$125,764
Non-Specific	$44,800	0.1384 (13.8%)	0.10	$620
TOTAL	**$37,552,300**			**$592,549**

2001 Passenger Services and Stateroom Revenue in Lynn Canal

Table 7.

	Passenger Services	Stateroom	Total Revenue
Statewide Revenue	$3,755,230	$3,755,230	**$7,510,460**
Lynn Canal Revenue	$592,549	$262,866	**$855,415**

2001 Total Revenue Attributable to Lynn Canal

Table 8.

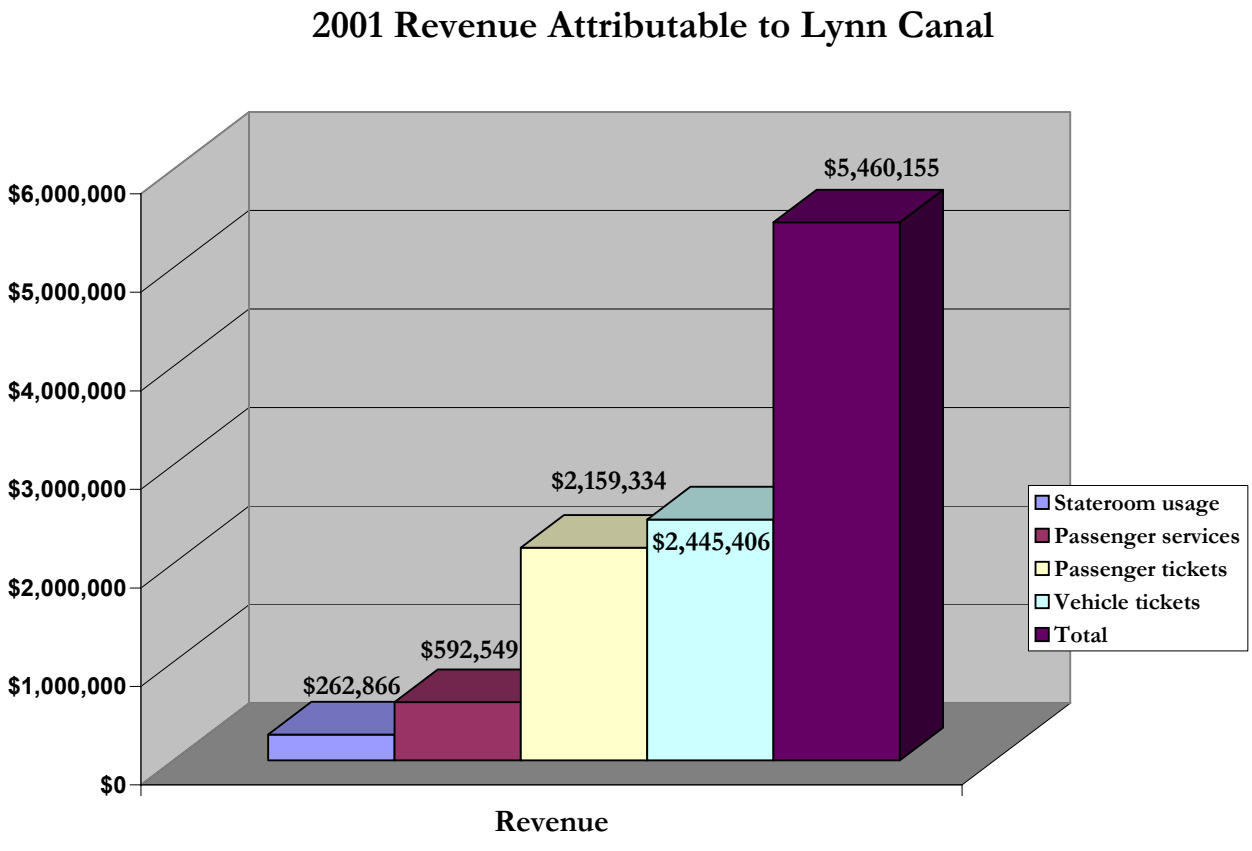
Sales Component	Revenue
Stateroom usage	$262,866
Passenger services	$592,549
Passenger tickets	$2,159,334
Vehicle tickets	$2,445,406
Total	**$5,460,155**

2001 Lynn Canal Revenue by Vessel
(Test for Reasonableness)
Table 9.

Vessel	State FY 2001 Revenues	Percent of time in Lynn Canal	Lynn Canal Revenue
Columbia	$0	0.1100	$0
Matanuska	$8,928,900	0.0686	$611,630
Malaspina	$5,808,600	0.5320	$3,091,337
Taku	$5,549,200	0.1515	$840,704
Aurora	$1,655,100	0.0200	$33,930
LeConte	$1,771,100	0.0500	$84,481
Bartlett	$1,914,400	0	$0
Tustumena	$2,935,400	0	$0
Kennicott	$8,944,800	0.1400	$1,257,639
Non-Specific	$44,800	.1384	$6,200
TOTAL	**$37,552,300**		**$5,925,921**

- **As a check for reasonableness, the revenue per vessel was multiplied by its percent of operating time in Lynn Canal. The values were within 8.5 percent for FY01.**

Figure 1.



FY01 AMHS Expenditures

FY01 Vessel Operating Hours

Table 10.

Vessel	Operating days	Operating Hours
Aurora	209	5,016
Columbia	0	0
Kennicott	323	7,752
LeConte	323	7,752
Malaspina	162	3,888
Matanuska	211	5,064
Taku	313	7,512

FY01 Southeast and Lynn Canal Expenditures

Table 11.

Vessel	Total Lynn Canal Hours	Total Operating Hours	Annual Expense	Expense to Lynn Canal
Aurora	103	5,016	$4,849,000	$99,087
*Columbia**	0	0	$1,851,000	$209,163
Kennicott	1,090	7,752	$12,974,000	$1,824,544
LeConte	370	7,752	$6,767,000	$322,986
Malaspina	2,069	3,888	$6,296,000	$3,349,608
Matanuska	347	5,064	$7,926,000	$543,629
Taku	1,138	7,512	$10,188,000	$1,543,498
All Vessels S.E.			$7,825,000	$1,082,645
TOTAL	**5,117**	**36,984**	**$58,676,000**	**$8,975,161**
System Management			$12,419,000	$1,454,379
Total S.W.			$10,646,000	$0
TOTAL			**$81,741,000**	**$10,429,540**

*** Since 11.3 percent of operating distance is in Lynn Canal, 11.3 percent of this cost is attributable to Lynn Canal to calculate the expense of the Columbia.**

Figure 2.

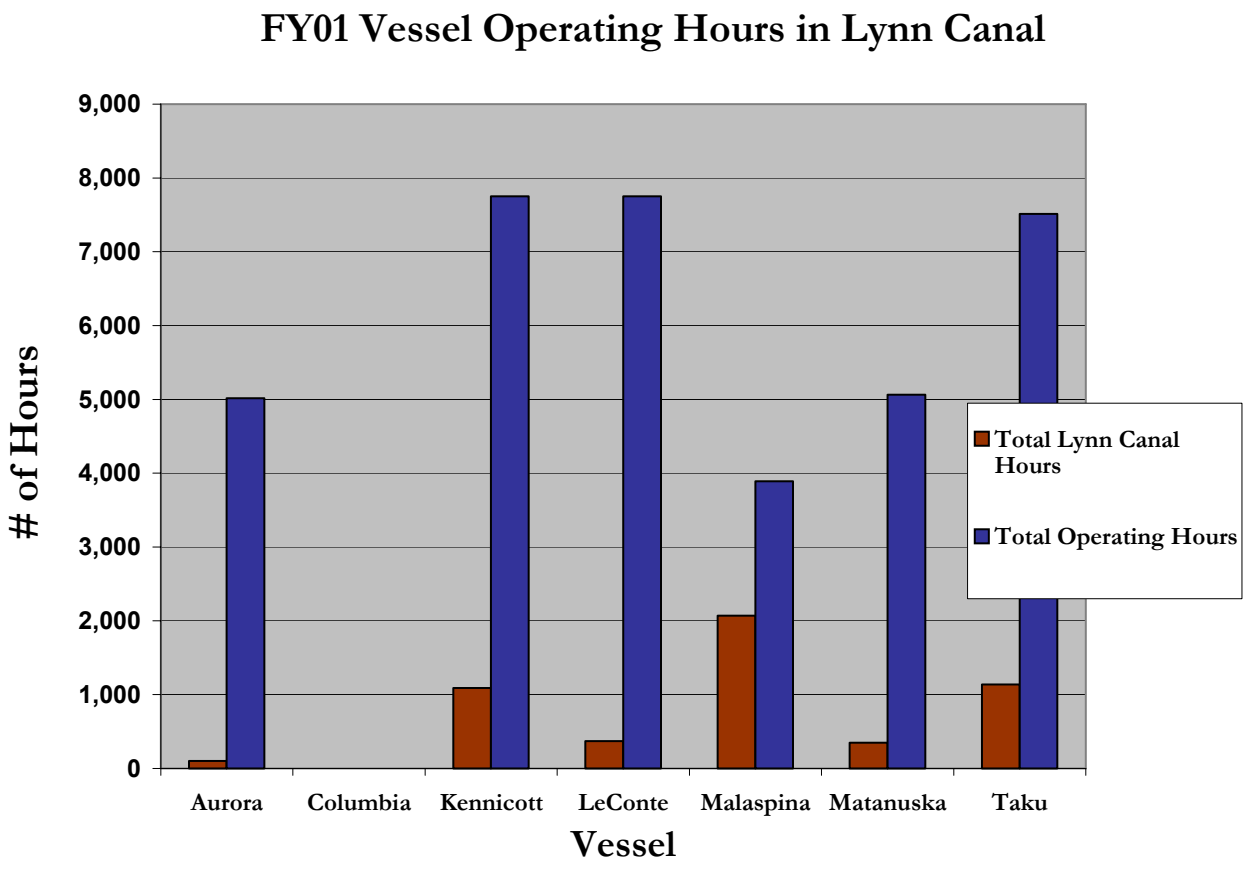
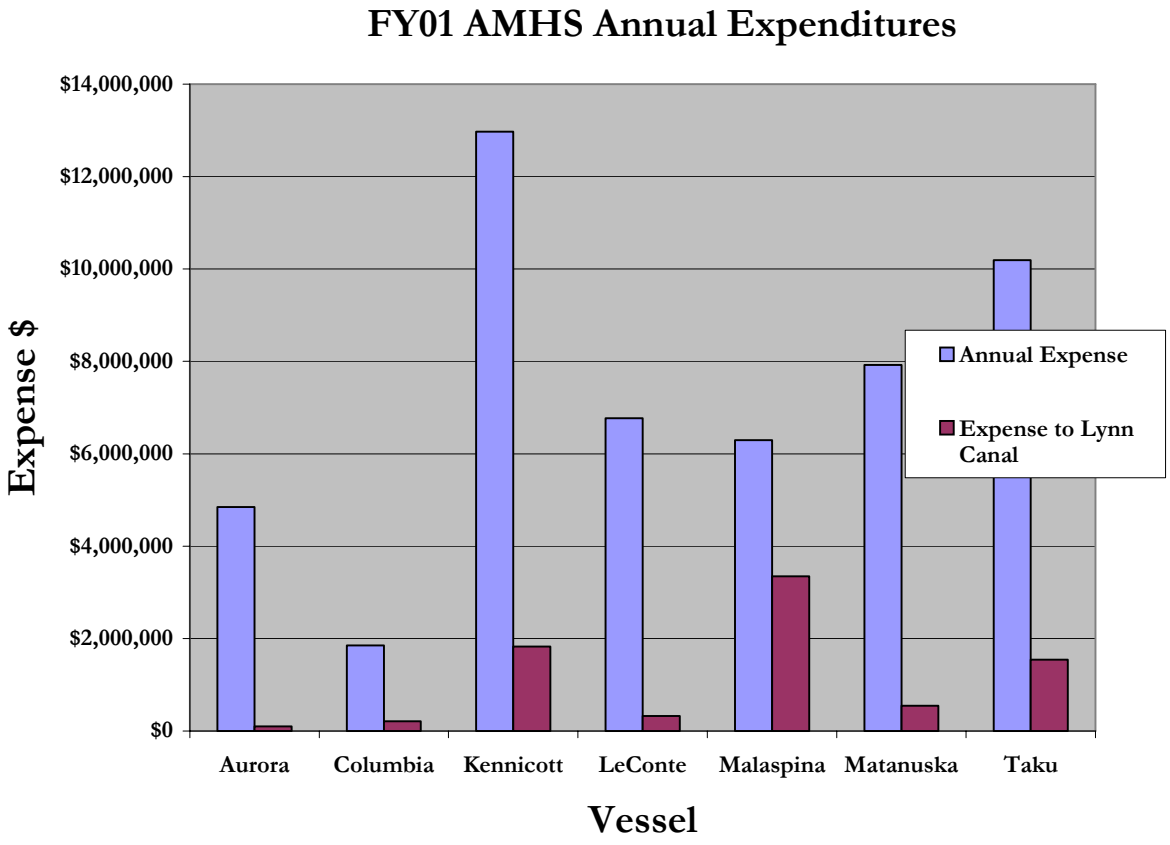

FY01 Vessel Operating Hours in Lynn Canal
# of Hours
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Aurora
Columbia
Kennicott
LeConte
Malaspina
Matanuska
Taku
Vessel
Total Lynn Canal Hours
Total Operating Hours

Figure 3.



2001 Total State Subsidy for Lynn Canal

Table 12.

	Expenditures	Revenues	State Subsidy
Lynn Canal	**$10,429,540**	**$5,460,155**	**$4,969,385**

FY02 AMHS Revenue Attributable to Lynn Canal

2002 Passenger Revenue Attributable to Lynn Canal

Table 13.

Port	Skagway (disembark)	Haines (disembark)	Skagway (embark)	Haines (embark)	TOTAL
Skagway		$119,856			
Haines	$147,984				
Juneau	$492,772	$437,445	$487,452	$427,544	
Sitka	$10,237	$9,702	$13,401	$13,309	
Petersburg	$4,643	$7,770	$6,223	$6,811	
Wrangell	$3,241	$5,625	$2,401	$4,966	
Ketchikan	$13,617	$19,040	$14,249	$19,058	
Prince Rupert	$40,686	$27,913	$45,987	$29,599	
Hollis	$0	$35	$0	$246	
Metlakatla		$0	$111	$18	
Hoonah	$993	$1,251	$1,202	$1,740	
Pelican					
Tenakee	$0	$114	$0	$43	
Angoon	$22	$35	$527	$140	
Kake	$0	$103	$0	$103	
Bellingham	$48,388	$71,884	$40,440	$97,924	
TOTAL	**$762,583**	**$700,772**	**$611,993**	**$601,500**	**$2,676,849**

2002 Vehicle Revenue Attributable to Lynn Canal

Table 14.

Port	Skagway	Haines	Skagway (embark)	Haines (embark)	TOTAL
Skagway		$138,684			
Haines	$166,740				
Juneau	$399,049	$522,400	$398,831	$483,680	
Sitka	$9,934	$13,352	$14,379	$19,397	
Petersburg	$2,837	$9,700	$3,546	$8,326	
Wrangell	$1,710	$6,588	$1,006	$5,142	
Ketchikan	$7,339	$28,374	$6,957	$38,552	
Prince Rupert	$33,076	$53,849	$42,833	$58,722	
Hollis	$0	$74	$0	$222	
Metlakatla		$0	$0	$77	
Hoonah	$607	$1,703	$708	$2,168	
Pelican					
Tenakee	$0	N/A	$0	N/A	
Angoon	$89	$64	$179	$64	
Kake	$0	$170	$0	$340	
Bellingham	$34,695	$146,027	$29,591	$129,205	
TOTAL	**$656,076**	**$920,984**	**$498,030**	**$745,894**	**$2,820,984**

2002 Stateroom and Passenger Services
Revenue attributable to Lynn Canal

2002 System Total Revenue[7]
Table 15.

Vessel	State FY 2002 Revenues
Columbia	$5,354,000
Matanuska	$11,431,000
Malaspina	$2,569,000
Taku	$5,310,000
Aurora	$1,223,000
LeConte	$1,535,000
Bartlett	$1,851,000
Tustumena	$2,956,000
Kennicott	$7,119,000
Non-Specific	$103,000
TOTAL	**$39,451,000**

2002 Statewide Stateroom Miles[8]
Table 16.

Region	Stateroom Miles
SE	14,139,493
SW	1,377,992
Total	**15,517,485**

2002 Stateroom Miles in Lynn Canal
Table 17.

Route	Stateroom Miles
HNS-JNU	570,180
HNS-SGY	42,614
JNU-HNS	469,200
JNU-SGY	7,938
SGY-HNS	53,040
SGY-JNU	3,402
Total	**1,146,374**
Percent Lynn Canal Stateroom use	**0.07**

[7] **See Appendix D- System Total Revenue from 2002 AMHS Annual Financial Report.**
[8] **See Appendix G- Stateroom Miles from 2002 AMHS Annual Traffic Volume Report.**

2002 Passenger Services Revenue in Lynn Canal

Table 18.

Vessel	State FY 2002 Revenues	% Time in Lynn Canal	% Passenger Services	Passenger Services Revenue
Columbia	$5,354,000	0.1146	0.09	$55,221.16
Matanuska	$11,431,000	0.1227	0.09	$126,232.53
Malaspina	$2,569,000	0.7821	0.09	$180,829.34
Taku	$5,310,000	0.1822	0.09	$87,073.38
Aurora	$1,223,000	0.0157	0.09	$1,728.10
LeConte	$1,535,000	0.0447	0.09	$6,175.31
Bartlett	$1,851,000	0.0000	0.09	$0.00
Tustumena	$2,956,000	0.0000	0.09	$0.00
Kennicott	$7,119,000	0.1576	0.09	$100,975.90
Non-Specific	$103,000	0.1539	0.09	$1,426.65
TOTAL	**$39,451,000**			**$559,662**

2002 Passenger Services and Stateroom Revenue in Lynn Canal

Table 19.

	Passenger Services	Stateroom usage	Total Revenue
Statewide Rev.	$3,550,590	$4,339,610	**$7,890,200**
Lynn Canal Rev.	$559,662	$303,773	**$863,435**

2002 Total Revenue Attributable to Lynn Canal

Table 20.

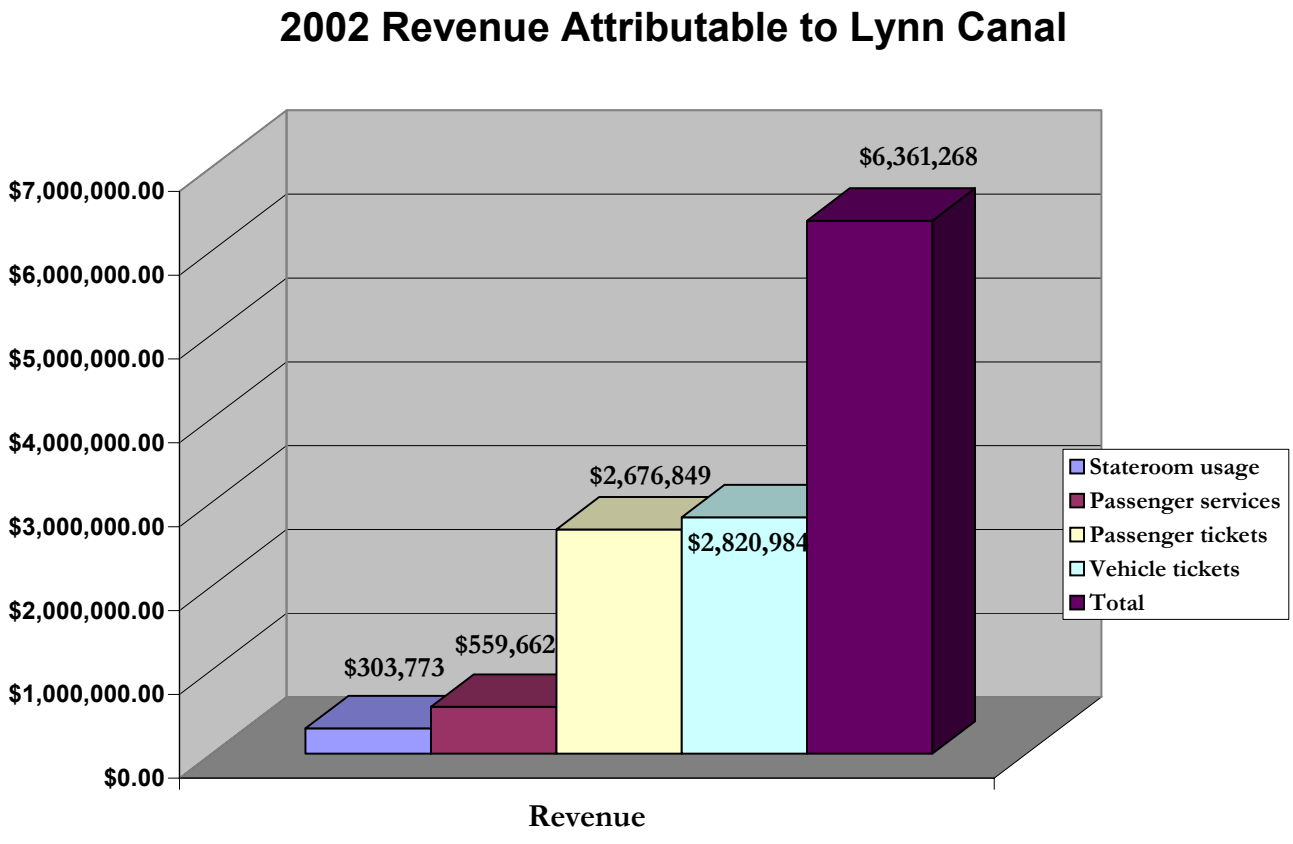
Sales Component	Revenue
Stateroom usage	$303,773
Passenger services	$559,662
Passenger tickets	$2,676,849
Vehicle tickets	$2,820,984
Total	**$6,361,268**

Lynn Canal Revenues by Vessel
(Test for Reasonableness)
Table 21.

Vessel	State FY 2002 Revenues	% of time in Lynn Canal	Lynn Canal Revenue
Columbia	$5,354,000	0.1146	$613,568
Matanuska	$11,431,000	0.1563	$1,402,584
Malaspina	$2,569,000	0.7821	$2,009,472
Taku	$5,310,000	0.1130	$967,482
Aurora	$1,223,000	0.0157	$19,446
LeConte	$1,535,000	0.0447	$68,615
Bartlett	$1,851,000	0.0000	$0
Tustumena	$2,956,000	0.0000	$0
Kennicott	$7,119,000	0.1576	$1,121,954
Non-Specific	$103,000	.1539	$15,852
TOTAL	**$39,451,100**		**$6,218,973**

- **As a check for reasonableness, the revenue per vessel was multiplied by its percent of operating time in Lynn Canal. These values were within 2.2% for FY02.**

Figure 4.



FY02 AMHS Expenditures

FY02 Vessel Operating Hours

Table 22.

Vessel	Operating Days	Operating Hours
Aurora	168	4,032
Columbia	92	2,208
Kennicott	266	6,384
LeConte	321	7,704
Malaspina	97	2,328
Matanuska	286	6,864
Taku	316	7,584

FY02 Southeast and Lynn Canal Expenditures

Table 23.

	Total Lynn Canal Hours	Total Operating Hours	Annual Expense	Expense to Lynn Canal
Aurora	64	4032	$3,673,000	$57,846
Columbia	253	2208	$5,946,000	$681,313
Kennicott	1006	6384	$10,780,000	$1,699,015
LeConte	344	7704	$6,392,000	$285,483
Malaspina	1821	2328	$4,265,000	$3,335,695
Matanuska	842	6864	$10,780,000	$1,322,497
Taku	1382	7584	$9,249,000	$1,684,894
All Vessels S.E.			$6,792,000	$1,045,599
TOTAL	**5,712**	**37,104**	**$57,877,000**	**$10,112,342**
System Management			$11,044,000	$1,435,338
Total S.W.			$10,673,000	$0
TOTAL			**$79,594,000**	**$11,547,680**

Figure 5.

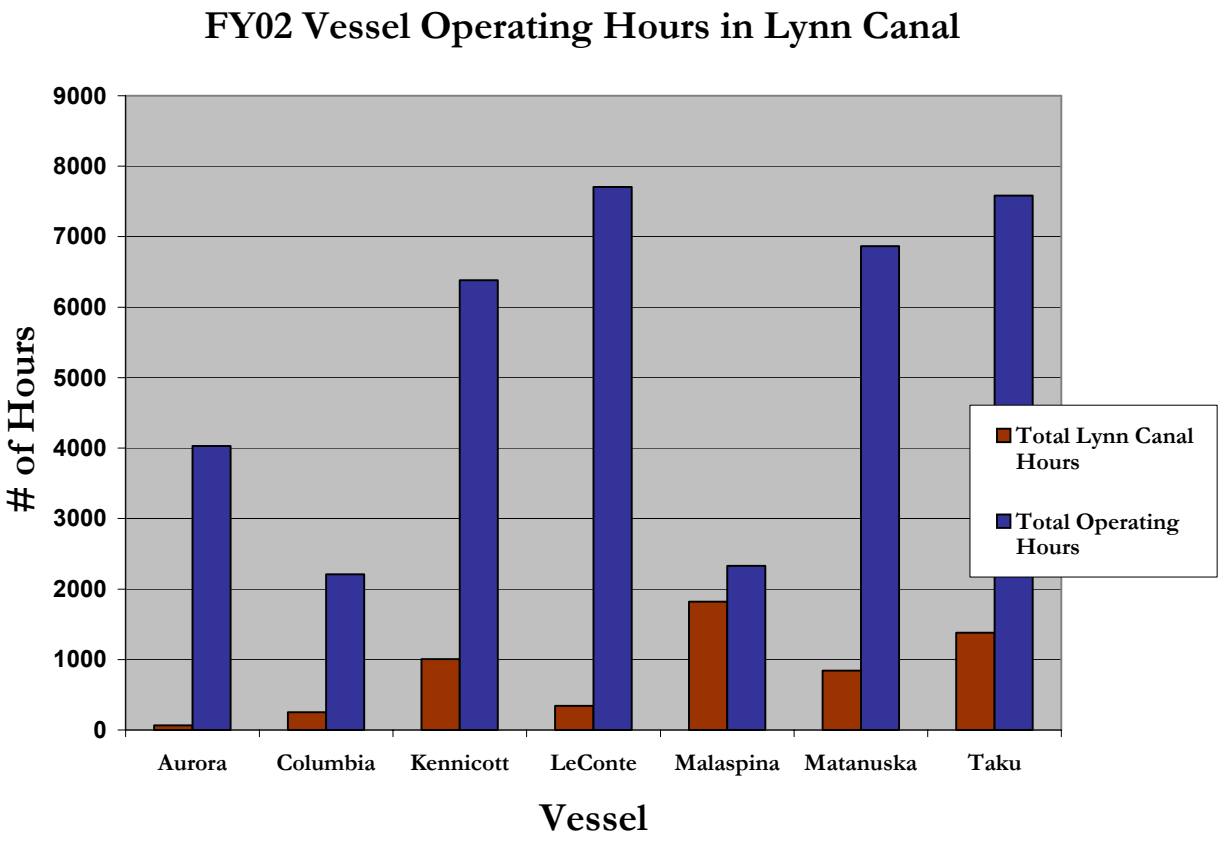
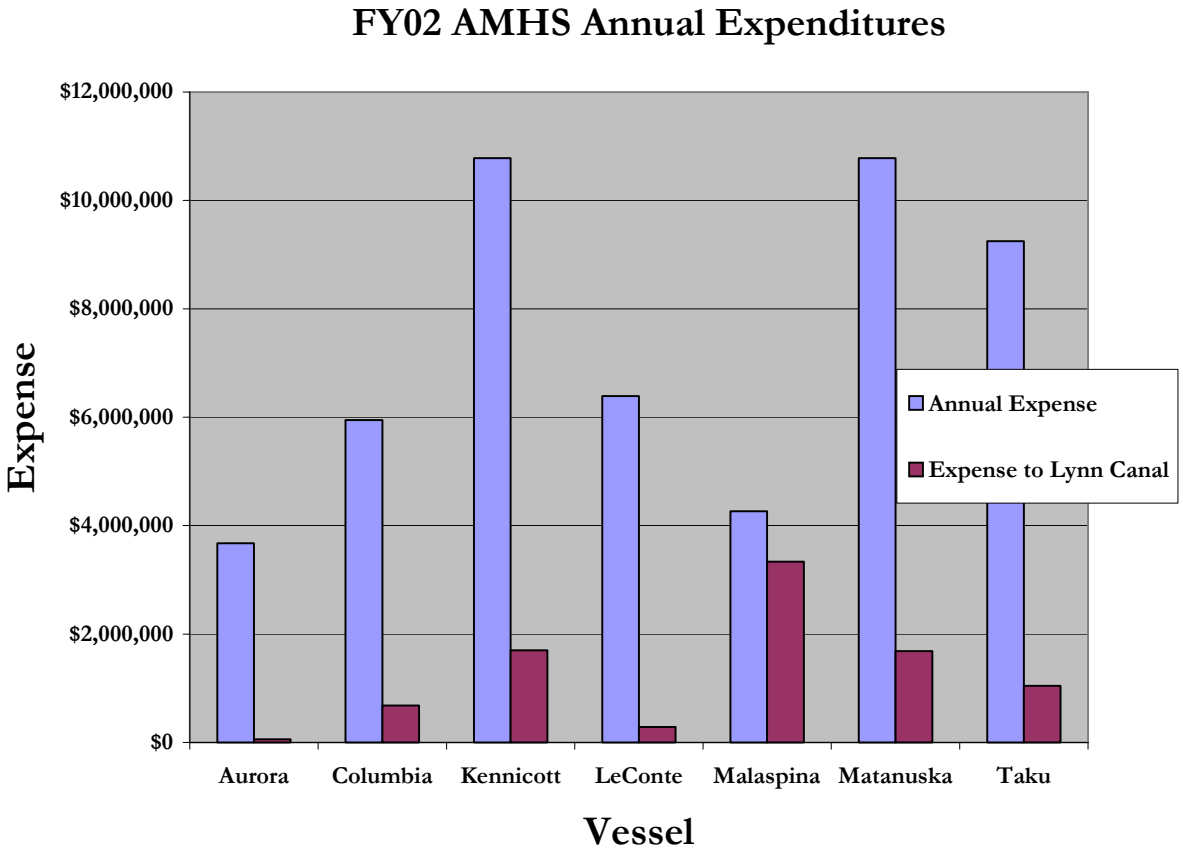

FY02 Vessel Operating Hours in Lynn Canal
# of Hours
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Aurora
Columbia
Kennicott
LeConte
Malaspina
Matanuska
Taku
Vessel
Total Lynn Canal Hours
Total Operating Hours

Figure 6.



2002 Total State Subsidy for Lynn Canal

Table 24.

	Expenditures	Revenues	State Subsidy
Lynn Canal	**$11,541,680**	**$6,361,268**	**$5,180,412**

AMHS Capital Costs

- **Terminal CIP projects not included.**

2001-2010 Annual Capital Improvement Program Summary[9]

Table 25.

Vessel	CIP Costs 2001-2010 (millions)	Cost per Year (millions)	% of Time in Lynn Canal	Annual Cost to Lynn Canal
Aurora	$24.4	$2.4	0 (0%)	$0
Columbia	$42.8	$4.3	0.1146 (11%)	$492,780
Kennicott	$21.6	$2.2	0.1576 (16%)	$346,720
LeConte	$19.0	$1.9	0.0447 (4%)	$84,930
Matanuska	$46.6	$4.7	0.1563 (15%)	$734,610
**Taku*	$47.8	$4.8	0 (0%)	$0
***Malaspina*	$39.4	$3.9	0.1146 (11%)	$446,940
Tustumena	$18.8	$1.9	0 (0%)	$0
****Fairweather*	$13.4	$1.3	.7143 (71%)	$957,143
*****HNS/SGY Shuttle*	$24.5	$2.4	1 (100%)	$2,445,200
Total	**$298.3**	**$29.8**		**$5,891,180**

***The M/V Taku is scheduled to be removed from service summer 2004, therefore 0 percent would be allocated to Lynn Canal service.**

****The M/V Malaspina is not included in 2002 Fleet Condition Survey Update, therefore the 1998 AMHS Vessel Refurbishment and Fleet Replacement Study was used for 2001-2010 CIP costs, see Table 26.**

*****The FVF Fairweather CIP costs were taken from the 2000 FVF Design Study Report.**

******The HNS-SGY shuttle CIP costs were determined from the M/V Aurora CIP costs for 2001-2010 since the M/V Aurora is likely to become the Haines-Skagway shuttle.**

[9] **From the AMHS 2002 Fleet Condition Survey Update.**

Figure 7.

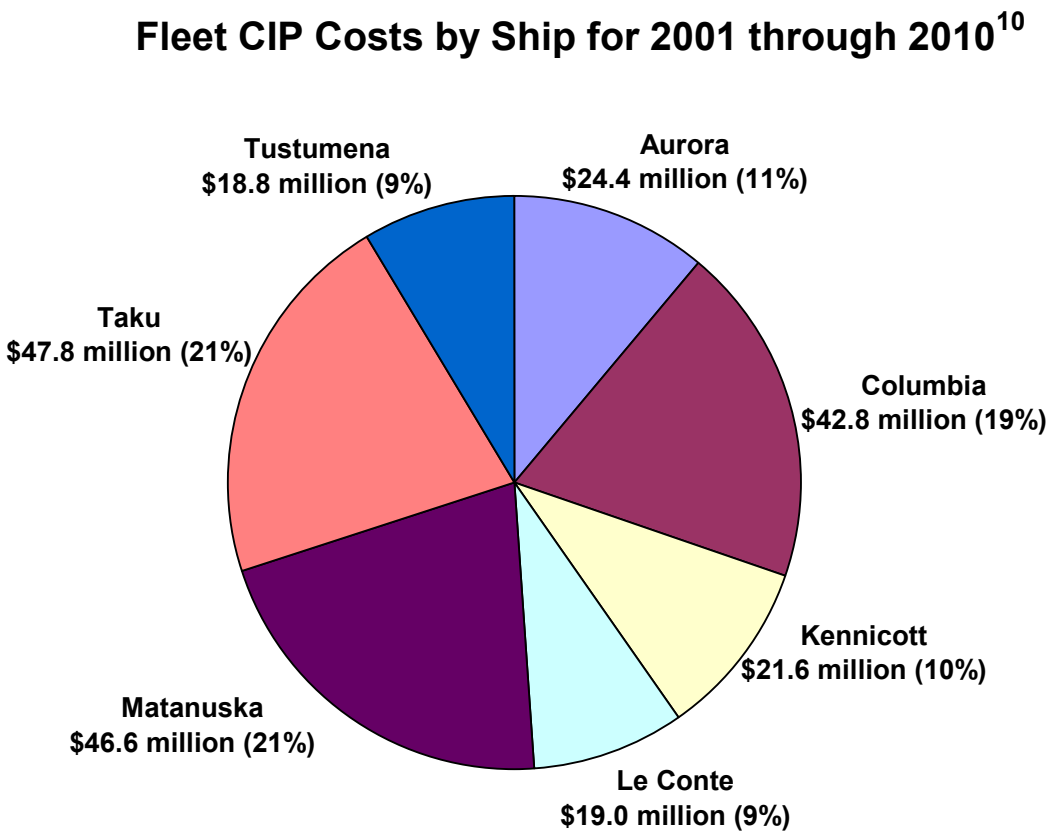


Figure 7. Taken from the *2002 Fleet Condition Survey Update* see Table 26 for M/V Malaspina CIP costs.

[10] **From the AMHS 2002 Fleet Condition Survey Update.**

2001-2010 Malaspina CIP Costs

Table 26.

Year	*Malaspina*
2001	$0
2002	$10,110,000
2003	$36,000
2004	$10,270,000
2005	$7,780,000
2006	$3,552,000
2007	$0
2008	$7,660,000
2009	$0
2010	$0
TOTAL	**$39,408,000**

- **Data from *1998 AMHS Vessel Refurbishment and Fleet Replacement Study*.**

2011-2038 Annual Lynn Canal Vessel CIP Costs

Table 27.

Year	*Columbia*	*Kennicott*	*Fairweather*	*Malaspina (or replacement)*	*HNS-SGY Shuttle/Aurora*
2011	$0	$0	$1,340,000	$0	$0
2012	$2,400,000	$0	$1,340,000	$0	$132,000
2013	$3,000,000	$2,120,000	$1,340,000	$7,200,000	$0
2014	$155,000	$16,000,000	$1,340,000	$0	$240,000
2015	$360,000	$16,000,000	$1,340,000	$0	$0
2016	$18,000,000	$0	$1,340,000	$0	$0
2017	$18,000,000	$0	$1,340,000	$0	$700,000
2018	$14,400,000	$5,395,000	$1,340,000	$0	$1,200,000
2019	$12,000,000	$0	$1,340,000	$0	$1,920,000
2020	$240,000	$0	$1,340,000	$0	$1,000,000
2021	$360,000	$120,000	$1,340,000	$0	$2,400,000
2022	$0	$900,000	$1,340,000	$0	$13,200,000
2023	$3,480,000	$0	$1,340,000	$0	$0
2024	$0	$0	$1,340,000	$0	$0
2025	$240,000	$4,000,000	$1,340,000	$2,827,000	$0
2026	$0	$0	$1,340,000	$21,300,000	$120,000
2027	$12,175,000	$0	$1,340,000	$21,300,000	$240,000
2028	$8,240,000	$4,660,000	$1,340,000	$0	$0
2029	$10,000,000	$120,000	$1,340,000	$0	$1,330,000
2030	$8,500,000	$0	$1,340,000	$7,193,000	$0
2031	$480,000	$16,000,000	$1,340,000	$0	$0
2032	$0	$8,500,000	$1,340,000	$0	$120,000
2033	$480,000	$16,000,000	$1,340,000	$160,000	$0
2034	$1,000,000	$250,000	$40,000,000	$1	$6,000,000
2035	$0	$0	$1,340,000	$0	$120,000
2036	$0	$0	$1,340,000	$0	$120,000
2037	$0	$240,000	$1,340,000	$5,300,000	$0
2038	$0	$2,740,000	$1,340,000	$0	$0
TOTAL	**$113,510,000**	**$93,045,000**	**$76,180,000**	**$65,280,001**	**$28,842,000**

Table 27. Data obtained from the *1998 Vessel Refurbishment and Fleet Replacement Study* and the *2000 FVF Design Study Report.* (FVF Fairweather replacement varied from the FVF Design Study Report, 20-year life, to the current AMHS estimate of a 30-year life.) For this analysis, a $40 million vessel replacement cost was added to the CIP at the end of 30 years.

Malaspina replacement costs were determined by the CIP costs for the M/V Kennicott, percentages were calculated using the $90 million cost of the M/V Kennicott and the $120 million replacement cost of the M/V Malaspina. The Haines-Skagway shuttle CIP costs would be the same as the M/V Aurora CIP costs for 2011-2038.

2011-2038 Annual Capital Improvement Program Summary

Table 28.

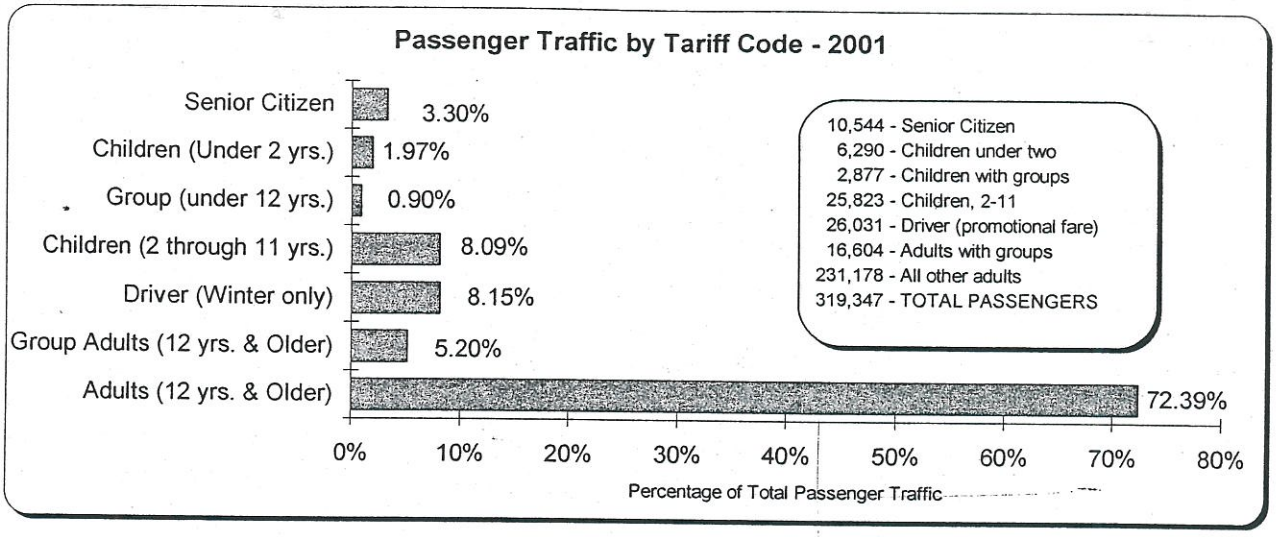
Vessel	CIP Costs 2011-2038 (millions)	Cost per Year (millions)	% of Time in Lynn Canal	Annual Cost to Lynn Canal
Columbia	$113.5	$4.1	0.1146	$464,580
Kennicott	$93.0	$3.3	0.0446	$148,207
Fairweather	$76.2	$2.7	1.0000	$2,720,714
HNS/SGY Shuttle	$28.8	$1.0	1.0000	$1,030,071
Malaspina (or replacement)	$65.3	$2.3	0.1146	$267,182
TOTAL	**$376.9**	**$13.5**		**$4,630,755**

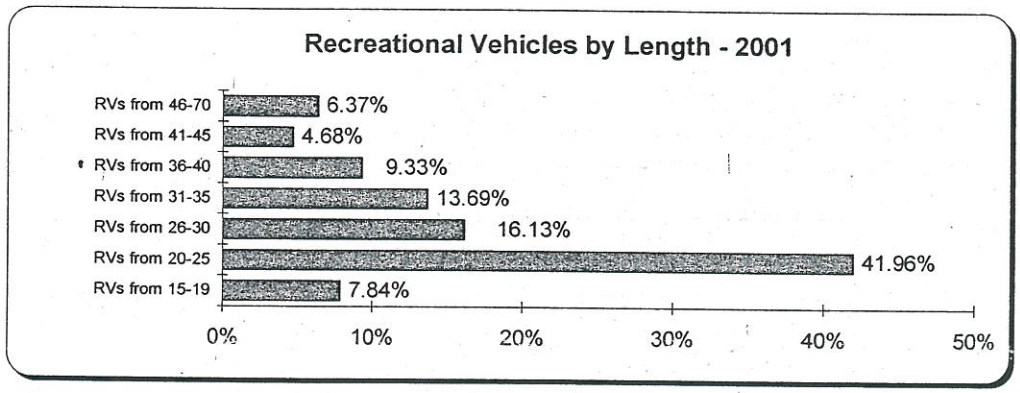
Table 28. The FVF Fairweather is included since this is based on the No Build Alternative estimate of the AMHS CIP costs.

AMHS CIP Costs Attributable to Lynn Canal

Table 29.

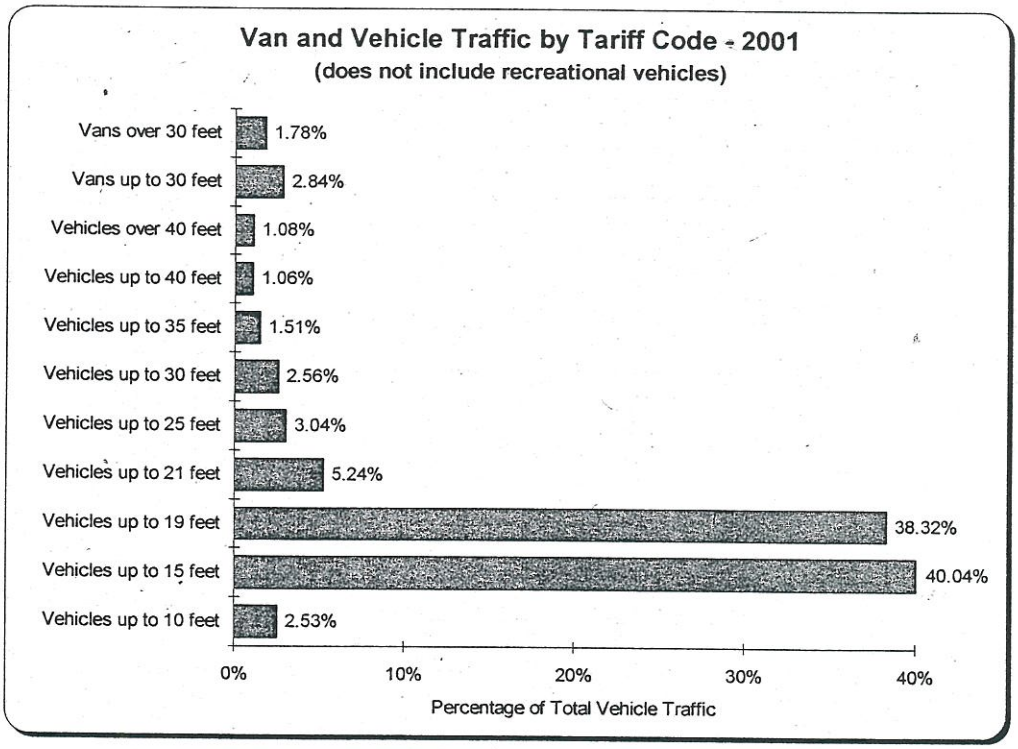
Time Period	Cost Attributable to Lynn Canal
2001-2010	$5,891,180
2011-2038	$4,630,755





RVs

2 - 61-70 ft.
25 - 56-60 ft.
115 - 51-55 ft.
299 - 46-50 ft.
324 - 41-45 ft.
646 - 36-40 ft.
948 - 31-35 ft.
1,117 - 26-30 ft.
2,905 - 20-25 ft.
543 - 15-19 ft.
6,924 - TOTAL



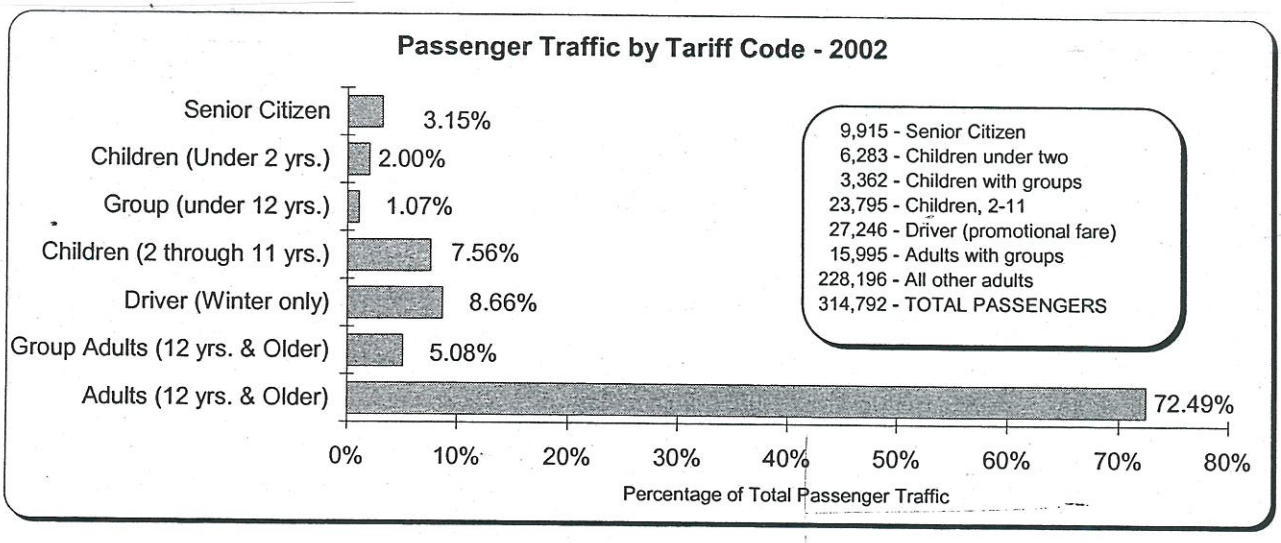
VANS

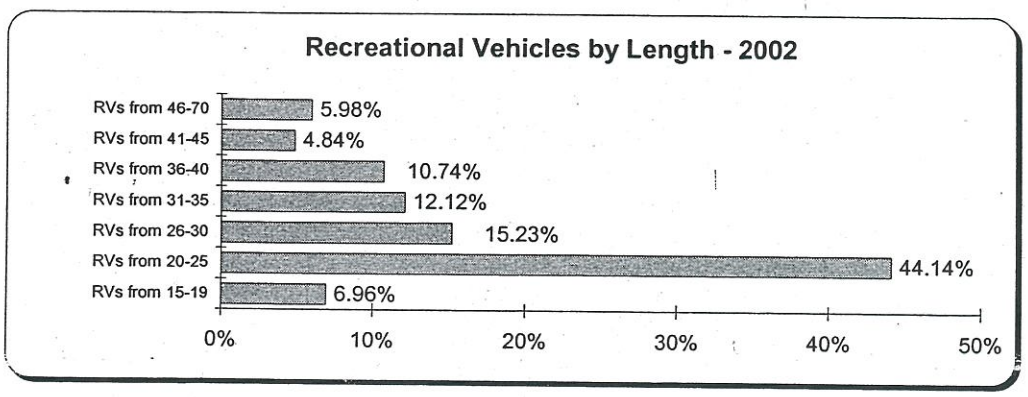
7 - 70 ft.
19 - 60 ft.
4 - 55 ft.
99 - 50 ft.
79 - 45 ft.
739 - 40 ft.
605 - 35 ft.
1,519 - 30 ft.
911 - 25 ft.
40 - 21 ft
4,022 TOTAL

VEHICLES

14 - 70 ft.
57 - 60 ft.
106 - 55 ft.
260 - 50 ft.
505 - 45 ft.
921 - 40 ft.
1,310 - 35 ft.
2,228 - 30 ft.
2,645 - 25 ft.
4,561 - 21 ft
33,347 - 19 ft.
34,844 - 15 ft.
2,202 - 10 ft.
83,000 TOTAL

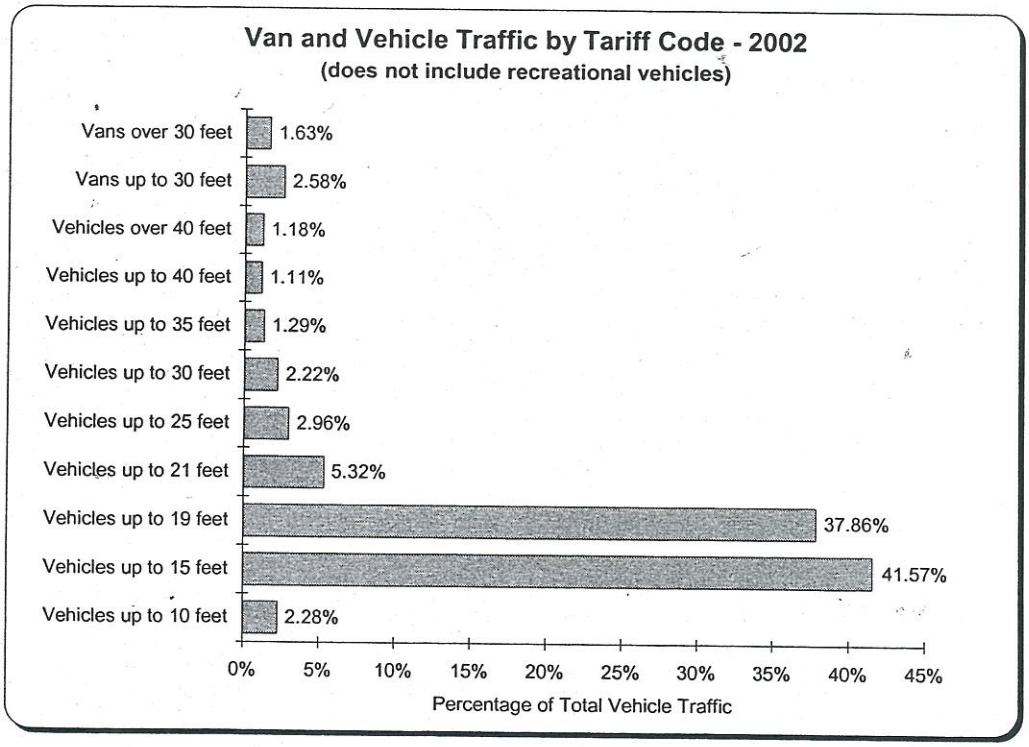
Standard-sized vehicles up to 20' in length represent 85% of the vehicles (not including vans and RVs) that traveled on the ferries in 2001. Most of the van traffic is clustered into four tariff categories. Vans over 21' and up to 40' made up 94% of the total van traffic.





RVs

13 - 61-70 ft.
20 - 56-60 ft.
116 - 51-55 ft.
241 - 46-50 ft.
316 - 41-45 ft.
701 - 36-40 ft.
791 - 31-35 ft.
994 - 26-30 ft.
2,881 - 20-25 ft.
454 - 15-19 ft.
6,527 - TOTAL



VANS

9 - 70 ft.
10 - 60 ft.
10 - 55 ft.
47 - 50 ft.
43 - 45 ft.
686 - 40 ft.
597 - 35 ft.
1,480 - 30 ft.
700 - 25 ft.
34 - 21 ft
3,616 TOTAL

VEHICLES

15 - 70 ft.
47 - 60 ft.
137 - 55 ft.
290 - 50 ft.
522 - 45 ft.
949 - 40 ft.
1,108 - 35 ft.
1,907 - 30 ft.
2,545 - 25 ft.
4,567 - 21 ft
32,510 - 19 ft.
35,702 - 15 ft.
1,961 - 10 ft.
82,260 TOTAL

Standard-sized vehicles up to 20' in length represent 85% of the vehicles (not including vans and RVs) that traveled on the ferries in 2002. Most of the van traffic is clustered into four tariff categories. Vans over 21' and up to 40' made up 96% of the total van traffic.

Appendix A

Average Passenger Fare

2001- AMHS Annual Traffic Volume Report, pg. 23

Passenger Tariff Code	% of Travelers x Fare	Total %
Adults	72.39 x 1	72.39
Group Adults	5.20 x .5	2.60
Driver-winter	8.15 x 0	0
Children 2-11yrs	8.09 x .5	4.05
Group <12yrs	.90 x .5	0.45
Children <2yrs	1.97 x 0	0
Senior citizens	3.30 x .5	1.65
	TOTAL	**81.14%**

2002- AMHS Annual Traffic Volume Report, pg. 23

Passenger Tariff Code	% of Travelers x Fare	Total %
Adults	72.49 x 1.0	72.49
Group Adults	5.08 x .5	2.54
Driver-winter	8.66 x 0	0
Children 2-11yrs	7.56 x .5	3.78
Group <12yrs	1.07 x .5	0.54
Children <2yrs	2.00 x 0	0
Senior Citizens	3.15 x .5	1.65
	TOTAL	**81.00%**

- **Since some passengers travel on passes use an average of 80 percent for all ticketed passengers to account for the combination of full fare, partial fare and no fare passengers.**

- **In this analysis 1.0 = full adult fare.**

Appendix B

Average Vehicle Fare

2001- AMHS Annual Traffic Volume Report, pg. 23

Vehicle Length	% of Total Vehicles	% of Vehicles x Fare	Total %
Vehicles <10ft	2202 / 93946	2.34 x 0.42	0.99
<15ft	34844 / 93946	37.09 x 0.66	24.40
<19ft	(33347 + 543) / 93946	36.07 x 0.76	27.53
<21ft	(4561 +40) / 93946	4.90 x 1.00	4.90
<25ft	(2645 + 911 + 2905) / 93946	6.88 x 1.46	10.05
<30ft	(2228 + 1519 + 1117) / 93946	5.18 x 1.89	9.79
<35ft	(1310 + 605 + 948) / 93946	3.05 x 2.21	6.74
<40ft	(921 + 739 + 646) / 93946	2.45 x 2.53	6.20
<45ft	(505 + 79 + 324) / 93946	0.97 x 2.84	2.75
<50ft	(260 + 99 + 299) / 93946	0.70 x 3.16	2.21
<55ft	(106 + 4 + 115) / 93946	0.24 x 3.47	0.83
<60ft	(57 + 19 + 25) / 93946	0.11 x 3.79	0.42
<70ft	(14 + 7 + 2) / 93946	0.02 x 4.42	0.09
TOTAL			**96.90%**

2001- Total Vehicles Carried

Vehicles	83,000
Vans	4,022
RV's	6,924
TOTAL	**93,946**

2002- AMHS Annual Traffic Volume Report, pg. 23

Vehicle Length	% of Total Vehicles	% of Vehicles x Fare	Total %
Vehicles <10ft	1961 / 92403	2.12 x 0.43	0.91
<15ft	35702 / 92403	38.64 x 0.66	25.50
<19ft	(32510 + 454) / 92403	35.67 x 0.76	27.11
<21ft	(4567 + 34) / 92403	4.98 x 1.00	4.98
<25ft	(2545 + 700 + 2881) / 92403	6.63 x 1.46	9.68
<30ft	(1907 + 1480 + 994) / 92403	4.74 x 1.88	8.91
<35ft	(1108 + 597 + 791) / 92403	2.70 x 2.19	5.91
<40ft	(949 + 686 + 701) / 92403	2.53 x 2.5	6.33
<45ft	(522 + 43 + 316) / 92403	0.95 x 2.81	2.67
<50ft	(290 + 47 + 241) / 92403	0.63 x 3.13	1.97
<55ft	(137 + 10 + 116) / 92403	0.28 x 3.43	0.96
<60ft	(47 + 10 + 20) / 92403	0.08 x 3.75	0.30
<70ft	(15 + 9 + 13) / 92403	0.04 x 4.38	0.18
TOTAL			**95.40%**

2002- Total Vehicles Carried

Vehicles	82,260
Vans	3,616
RV's	6,527
TOTAL	**92,403**

- **Fares were compared using 2001 and 2002 published rates with JNU-HNS fare for a 21ft vehicle (2001-$76 & 2002-$80) set as 1. What this analysis shows is that the vehicle mix captures from (96.9 percent in 2001 & 95.4 percent in 2002) of the rate for a 21ft vehicle.**

- **Therefore, with over width and vehicle without driver fee, assuming an average fare for a 21ft vehicle is acceptable and reasonably accurate for the fleet mix.**

Appendix C

Revenues in Lynn Canal generated from ticket sales to and from Juneau

The goal of this analysis was to determine the percent of revenue in Lynn Canal that either embarks or disembarks from Juneau. This percentage would represent the amount of passenger and vehicle traffic revenue generated to and from Juneau as compared to the amount of through-traffic in Lynn Canal.

To calculate the percentage of local revenue, the Haines to/from Skagway revenue was subtracted from the total passenger and vehicle revenue in Lynn Canal. The total revenue from embarkment and disembarkment from Juneau was calculated and divided by the total revenue for the corridor to determine the percent of local revenue.

2001 Passenger Revenue from Embark or Disembark in Juneau[10]

Juneau	$375,091 + $347,750 + $378,163 + $348, 864	$1,449,868
Total L.C. Revenue (less HNS-SGY)	$2,159,334 – $98,107 – $125,136	$1,936,091
Percent of Local Traffic	$1,449,868 / $1,936,091	**.749 (75%)**

2001 Vehicle Revenue from Embark or Disembark in Juneau

Juneau	$328,016 + $441,484 + $323,440 + $423,396	$1,516,336
Total L.C. Revenue (less HNS-SGY)	$2,445,406 - $115,760 – $149,880	$2,179,766
Percent of Local Traffic	$1,516,336 / $2,179,766	**.696 (70%)**

[10] See Appendix E page 33.

2002 Passenger Revenue from Embark or Disembark in Juneau[11]

Juneau	492,772 + 437,445 + 487,452 + 427,544	1,845,213
Total L.C. Revenue (less HNS-SGY)	2,676,849 – 119,856 – 147,984	2,409,009
Percent of Local Traffic	1,845,213 / 2,409,009	**.766 (77%)**

2002 Vehicle Revenue from Embark or Disembark in Juneau

Juneau	399,049 + 522,400 + 398,831 + 483,680	1,803,960
Total L.C. Revenue (less HNS-SGY)	2,820,984 – 138,684 – 166,740	2,515,560
Percent of Local Traffic	1,803,960 / 2,515,560	**.717 (72%)**

[11] See Appendix E page 34.

ALASKA MARINE HIGHWAY SYSTEM

Expenditures by Vessel* FY 91 - 02

(In Thousands)

	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY99	FY00	FY01	FY02
COLUMBIA	12,610	9,347	9,941	6,910	9,081	11,731	9,607	8,470	8,047	6,190	1,851	5,946
MATANUSKA	8,683	9,542	8,476	9,600	6,357	7,100	5,561	9,298	6,606	10,392	7,926	10,780
MALASPINA	7,097	5,842	10,699	6,600	9,743	9,760	9,995	6,351	3,639	4,206	6,296	4,265
TAKU	8,642	8,714	4,003	9,180	8,791	5,278	9,676	8,627	8,757	6,628	10,188	9,249
AURORA	5,586	5,209	5,655	4,270	5,536	5,221	3,820	5,115	5,161	6,141	4,849	3,673
LECONTE	5,328	5,355	5,973	5,530	5,037	5,457	5,885	5,042	5,564	4,630	6,767	6,392
KENNICOTT	-	-	-	-	-	-	-	858	10,365	11,130	12,974	10,780
ALL VESSELS S.E.	3,995	4,674	4,100	5,943	4,666	5,171	5,455	5,664	6,287	6,209	7,825	6,792
TOTAL S.E.	51,941	48,684	48,847	48,033	49,212	49,718	50,000	49,425	54,426	55,526	58,676	57,878
BARTLETT	4,687	3,100	3,274	4,530	3,523	3,896	2,970	3,071	2,717	2,874	3,000	2,882
TUSTUMENA	3,597	5,010	5,620	3,690	5,501	4,060	5,767	5,486	5,899	6,135	6,674	6,396
ALL VESSELS S.W.	692	573	477	1,358	470	611	909	902	882	947	972	1,396
TOTAL S.W.	8,976	8,683	9,370	9,578	9,494	8,567	9,645	9,459	9,498	9,956	10,646	10,673
TOTAL	**60,917**	**57,367**	**58,217**	**57,611**	**58,706**	**58,285**	**59,645**	**58,884**	**63,924**	**65,482**	**69,322**	**68,551**

* Expenditures by Vessels include the operating budget components southeast vessel operations, southwest vessel operations, and overhaul; excluded from those components is non-operational expenditures supported by restricted revenue (i.e. reimbursable service agreements). Not included are the budget components for terminal operations, reservations and marketing, engineering, and administrative expenses.

In FY 92, $3.2 million in overhaul funding was moved to the capital budget.

ALASKA MARINE HIGHWAY SYSTEM

Revenues from Operations by Vessel* FY 91 - 02

(In Thousands)

	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	F7 97	FY 98	FY 99	FY 00**	FY 01	FY 02
COLUMBIA	13,702	11,127	12,059	8,920	11,353	13,600	11,422	10,548	9,307	6,928	-	5,354
MATANUSKA	8,308	10,667	8,650	10,053	6,437	6,612	5,275	9,545	6,009	9,056	8,929	11,431
MALASPINA	6,602	5,926	8,600	7,070	9,450	7,302	9,277	4,078	2,511	3,231	5,809	2,569
TAKU	6,268	6,377	3,060	6,550	5,805	3,674	5,521	4,802	5,229	3,786	5,549	5,310
AURORA	2,099	2,257	2,340	1,770	1,949	1,720	1,110	1,985	1,869	2,194	1,655	1,223
LECONTE	1,650	2,076	1,860	1,820	1,728	1,692	1,618	1,451	1,571	1,134	1,771	1,535
BARTLETT	2,298	2,091	1,890	2,150	2,091	1,930	1,786	1,937	1,810	1,725	1,914	1,851
TUSTUMENA	1,634	2,185	2,421	2,040	2,521	1,940	2,625	2,724	2,732	2,867	2,935	2,956
KENNICOTT									7,686	7,358	8,945	7,119
NON-SPECIFIC		133			897	186	(16)	304	71	2,023	45	103
TOTAL	**42,561**	**42,838**	**40,879**	**40,373**	**42,231**	**38,656**	**38,618**	**37,374**	**38,793**	**40,302**	**37,552**	**39,451**

* These figures are close approximations based on reservations and ticketing information. They may be used to show the relative magnitude of different vessel operations. They are not accounting figures, therefore attempts to reconcile with accounting documents may yield small discrepancies.

** Fiscal Year 2000 Non-Specific Revenue includes a one time Ketchikan Shipyard payment.

Revenue for the M/V Tustumena in FY 91 and FY 92 includes the M/V Tustumena replacement vessels.

APPENDIX E

2002 Summary of On/Off Passenger and Vehicle Traffic by Port

SOUTHEAST ALASKA

Passengers Embarking		Passengers Disembarking 2002																
PORTS	Calendar Year	Skag-way	Haines	Juneau	Sitka	Peters-burg	Wran-gell	Ketch-ikan	Prince Rupert	Hollis	Metla-katla	Hoonah	Pel-ican	Tena-kee	Ang-oon	Kake	Belling-ham	Excur-sions*
Skagway	30,762		7,491	17,409	788	252	100	632	1,995	0	5	46	-	0	24	0	2,020	-
Haines	38,113	9,249		20,555	1,022	348	256	1,042	1,580	14	1	92	-	3	8	5	3,938	-
Juneau	69,560	17,599	21,031		5,976	3,736	1,473	3,054	2,842	15	9	4,967	702	1,265	3,212	824	2,601	254
Sitka	13,285	602	745	6,911		822	319	1,031	283	3	5	359	-	85	874	446	800	-
Petersburg	10,800	188	397	3,894	1,263		1,335	1,910	641	21	2	40	-	1	23	413	672	-
Wrangell	7,984	135	290	1,590	364	1,646		2,955	599	11	4	2	-	0	1	9	378	-
Ketchikan	34,891	604	1,041	4,008	1,625	2,299	3,252		7,550	955	9,318	92	-	0	25	276	3,846	-
Prince Rupert	16,354	1,765	1,490	3,003	691	657	571	8,086		21	-	3	-	-	-	15	52	-
Hollis	1,045	0	2	20	-	4	18	942	51		8	-	-	-	-	-	-	-
Metlakatla	8,073	-	0	33	3	0	3	7,936	68	6		0	-	0	2	22	-	-
Hoonah	5,631	38	62	4,826	375	36	3	61	1	3	0		-	3	107	116	-	-
Pelican	709	-	-	709	-	-	-	-	-	-	-	-		-	-	-	-	-
Tenakee	1,185	0	8	1,066	92	1		3	0	0	0	4	-		11	0	-	-
Angoon	3,988	1	2	2,807	871	28	1	56	0	0	3	101	-	10		108	-	-
Kake	2,383	0	5	966	502	447	16	199	13	1	22	101	-	0	111		-	-
Bellingham	17,109	2,417	4,359	3,986	403	841	408	4,677	18	-	-	-	-	-	-	-		-
Totals	261,872	32,598	36,923	71,783	13,975	11,117	7,755	32,584	15,641	1,050	9,377	5,807	702	1,367	4,398	2,234	14,307	254

Vehicles Embarking		Vehicles Disembarking 2002																
PORTS	Calendar Year	Skag-way	Haines	Juneau	Sitka	Peters-burg	Wran-gell	Ketch-ikan	Prince Rupert	Hollis	Metla-katla	Hoonah	Pel-ican	Tena-kee	Ang-oon	Kake	Belling-ham	Excur-sions*
Skagway	8,076		3,302	3,659	207	35	10	73	439	0	0	7	-	0	2	0	342	
Haines	13,630	3,970		6,046	369	103	64	500	735	3	1	28	-	1	1	4	1,805	
Juneau	18,255	3,661	6,530		1,911	830	372	745	958	5	3	1,391	56	29	646	222	896	
Sitka	3,626	143	254	1,855		287	77	298	102	3	2	63	-	5	148	73	316	
Petersburg	2,528	28	120	832	384		299	339	220	7	0	12	-	0	6	117	164	
Wrangell	1,825	17	82	310	82	323		599	315	5	1	3	-	0	0	2	86	
Ketchikan	9,541	77	368	881	460	413	821		2,560	285	2,417	7	-	0	4	53	1,195	
Prince Rupert	5,429	339	674	926	241	226	263	2,734		4	-	2	-	-	-	1	19	
Hollis	276	0	1	4	-	0	2	253	15		1	-	-	-	-	-	-	
Metlakatla	2,224	-	0	3	1	0	0	2,211	9	0		0	-	0	0	0	-	
Hoonah	1,530	6	22	1,379	58	11	4	10	1	1	0		-	0	18	20	-	
Pelican	50	-	-	50	-	-	-	-	-	-	-	-		-	-	-	-	
Tenakee	32	0	1	26	3	1	0	0	0	0	0	0	-		1	0	-	
Angoon	774	1	1	597	142	4	1	2	0	0	0	20	-	1		5	-	
Kake	446	0	2	204	56	115	2	36	0	1	0	23	-	0	7		-	
Bellingham	5,559	401	2,040	1,398	92	173	91	1,358	6	-	-	-	-	-	-	-		
Totals	73,801	8,643	13,397	18,170	4,006	2,521	2,006	9,158	5,360	314	2,425	1,556	56	36	833	497	4,823	n/a

Note: Totals do not include cross-gulf traffic. A "0" means no traffic; "-" means this pair of ports did not occur on any sailing.

*Excursions are passenger-only trips to and from the same port.

APPENDIX E

2001 SUMMER SEASON Summary of On/Off Passenger and Vehicle Traffic by Port

SOUTHEAST ALASKA

Passengers Embarking		Passengers Disembarking During the Period May 1 - Sep. 30, 2001																
PORTS	Summer Season	Skag-way	Haines	Juneau	Sitka	Peters-burg	Wran-gell	Ketch-ikan	Prince Rupert	Hollis	Metla-katla	Hoonah	Pel-ican	Tena-kee	Ang-oon	Kake	Belling-ham	Excur-sions*
Skagway	21,952		5,784	11,408	392	162	72	408	1,930	0	0	19	-	0	1	0	1,776	-
Haines	23,910	7,441		11,219	599	137	168	480	1,478	4	0	33	-	0	0	8	2,343	-
Juneau	39,350	11,664	11,467		3,088	1,810	585	1,930	2,605	20	0	1,870	526	580	1,086	320	1,799	-
Sitka	8,144	476	530	4,380		536	225	480	239	3	4	228	-	53	413	165	412	-
Petersburg	6,254	150	209	1,910	1,203		560	952	579	11	0	23	-	5	27	182	443	-
Wrangell	4,105	102	160	633	322	804		1,407	461	0	0	3	-	-	-	-	213	-
Ketchikan	29,099	342	695	2,257	1,053	1,378	1,801		5,089	10,187	3,643	1	-	0	0	7	2,190	456
Prince Rupert	13,037	1,920	1,307	2,219	538	532	394	5,645		365	0	11	-	-	-	-	106	-
Hollis	10,695	-	-	10	3	15	-	10,110	422		134	0	-	0	0	1	-	-
Metlakatla	3,134	-	-	0	0	0	-	2,948	0	185		0	-	0	0	1	-	-
Hoonah	2,175	8	14	1,836	207	14	5	0	9	0	0		-	4	38	40	-	-
Pelican	580	-	-	580	-	-	-	-	-	-	-	-		-	-	-	-	-
Tenakee	535	0	1	448	68	3	-	0	-	0	0	1	-		14	0	-	-
Angoon	1,370	1	0	874	369	20	-	0	-	2	0	29	-	14		61	-	-
Kake	800	0	0	353	131	203	-	4	-	0	17	25	-	0	67		-	-
Bellingham	10,690	1,608	2,408	2,580	395	567	237	2,846	49	-	-	-	-	-	-	-		-
Totals	175,830	23,712	22,575	40,707	8,368	6,181	4,047	27,210	12,861	10,777	3,798	2,243	526	656	1,646	785	9,282	456

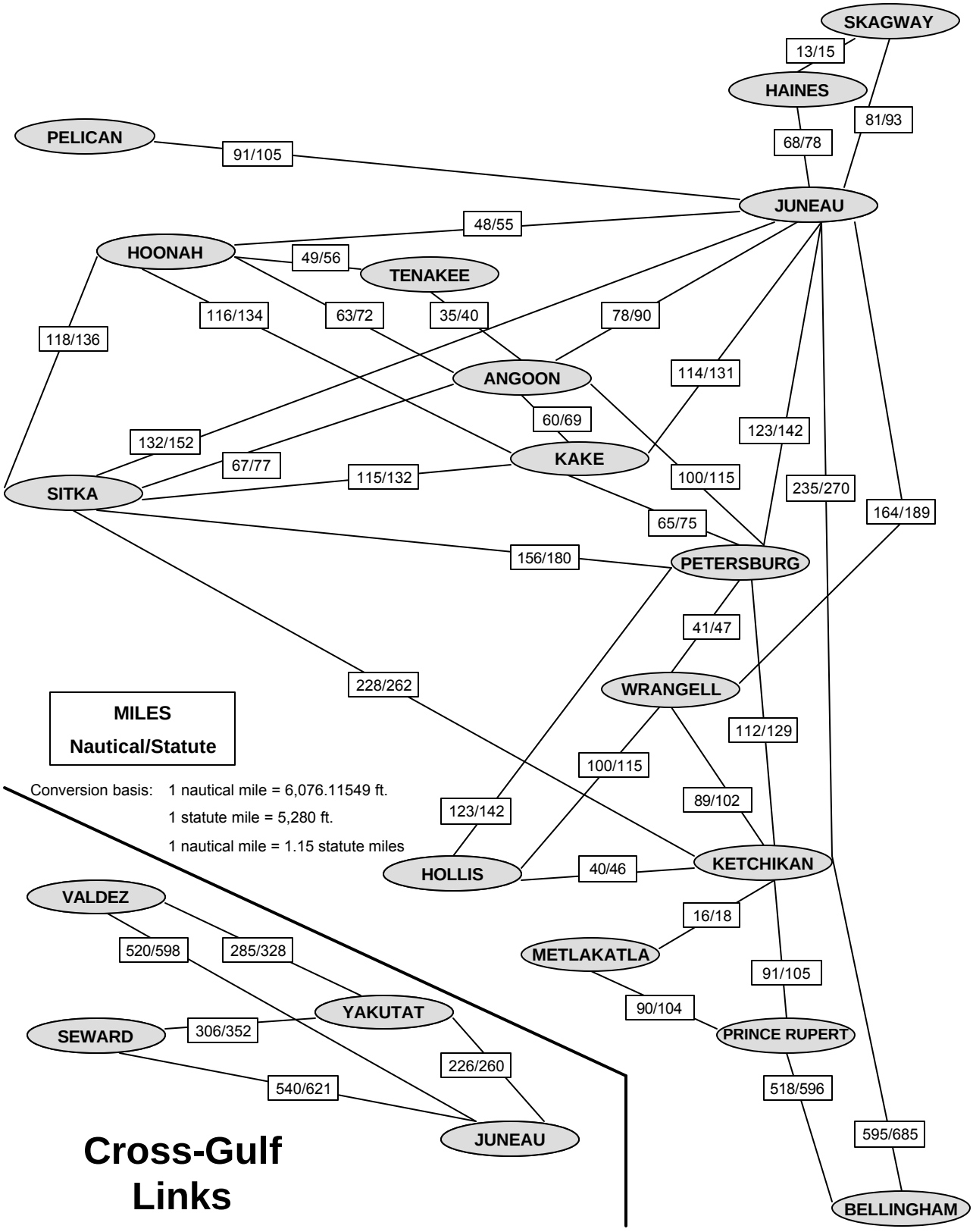
Vehicles Embarking		Vehicles Disembarking During the Period May 1 - Sep. 30, 2001																
PORTS	Summer Season	Skag-way	Haines	Juneau	Sitka	Peters-burg	Wran-gell	Ketch-ikan	Prince Rupert	Hollis	Metla-katla	Hoonah	Pel-ican	Tena-kee	Ang-oon	Kake	Belling-ham	Excur-sions*
Skagway	5,555		2,515	2,173	83	16	9	49	396	0	0	2	-	0	0	0	312	-
Haines	8,771	3,286		3,302	183	46	60	234	656	0	0	8	-	0	0	5	991	-
Juneau	9,707	2,294	3,590		837	360	140	461	734	6	0	559	40	10	224	68	384	-
Sitka	1,943	89	168	1,021		153	30	146	91	3	0	40	-	3	58	25	116	-
Petersburg	1,363	18	60	354	323		145	149	181	3	0	4	-	0	3	57	66	-
Wrangell	975	11	68	146	48	216		269	171	0	0	0	-	-	-	-	46	-
Ketchikan	7,524	59	258	447	232	271	459		1,623	2,704	955	1	-	0	0	4	511	-
Prince Rupert	3,975	298	550	587	202	175	151	1,835		141	0	3	-	-	-	-	33	-
Hollis	2,785	-	-	5	1	5	-	2,592	165		17	0	-	0	0	0	-	-
Metlakatla	830	-	-	0	0	0	-	795	0	35		0	-	0	0	0	-	-
Hoonah	597	0	3	525	29	3	3	0	2	0	0		-	0	6	26	-	-
Pelican	30	-	-	30	-	-	-	-	-	-	-	-		-	-	-	-	-
Tenakee	8	0	0	7	0	0	-	0	-	0	0	0	-		1	0	-	-
Angoon	299	1	0	221	55	6	-	0	-	2	0	7	-	0		7	-	-
Kake	196	0	0	78	27	51	-	1	-	0	4	15	-	0	20		-	-
Bellingham	2,520	214	1,006	527	93	50	32	588	10	-	-	-	-	-	-	-		-
Totals	47,078	6,270	8,218	9,423	2,113	1,352	1,029	7,119	4,029	2,894	976	639	40	13	312	192	2,459	0

Note: Totals do not include cross-gulf traffic. A "0" means no traffic; "-" means this pair of ports did not occur on any sailing.

*Excursions are passenger-only trips to and from the same port.

2002 Alaska Marine Highway Linkage System

(Diagrammatic - No Scale)



2001 Link Volume Summary Report of Stateroom Usage

*Capacity Ratio is calculated using the Cabin capacities in the Vessel Data Table.

Alphabetical Order by Embarking Port

Southeast Link	Count	Stateroom Miles	Capacity Ratio*
Bellingham-Ketchikan	4,395	2,615,025	71.6%
Bellingham-Prince Rupert	409	211,862	70.8%
Haines-Juneau	7,058	479,944	36.0%
Haines-Skagway	2,760	35,880	14.3%
Hollis-Ketchikan	344	13,760	30.8%
Hollis-Petersburg	12	1,476	27.9%
Hollis-Wrangell	428	42,800	41.5%
Hoonah-Juneau	362	17,376	52.6%
Hoonah-Sitka	449	52,982	69.6%
Juneau-Haines	6,079	413,372	31.3%
Juneau-Hoonah	441	21,168	68.4%
Juneau-Kake	41	4,674	47.7%
Juneau-Ketchikan	20	4,700	11.0%
Juneau-Petersburg	4,745	583,635	46.5%
Juneau-Sitka	3,145	415,140	59.4%
Juneau-Skagway	46	3,726	21.1%
Juneau-Yakutat	389	87,914	59.5%
Kake-Petersburg	48	3,120	55.8%
Kake-Sitka	8	920	18.6%
Ketchikan-Bellingham	3,905	2,323,475	65.5%
Ketchikan-Hollis	399	15,960	37.1%
Ketchikan-Juneau	176	41,360	26.9%
Ketchikan-Misty Fjords	75	4,500	72.1%
Ketchikan-Petersburg	263	29,456	72.3%
Ketchikan-Prince Rupert	4,363	397,033	42.7%
Ketchikan-Wrangell	7,830	696,870	55.1%
Petersburg-Juneau	5,657	695,811	57.0%
Petersburg-Kake	15	975	34.9%
Petersburg-Ketchikan	30	3,360	69.8%
Petersburg-Sitka	3,356	523,536	59.1%
Petersburg-Wrangell	8,108	332,428	50.1%
Prince Rupert-Bellingham	608	314,944	71.0%
Prince Rupert-Ketchikan	3,615	328,965	36.4%
Sitka-Hoonah	367	43,306	53.3%
Sitka-Juneau	2,928	386,496	58.1%
Sitka-Petersburg	3,440	536,640	58.0%
Skagway-Haines	3,457	44,941	17.7%
Wrangell-Hollis	363	36,300	32.5%
Wrangell-Ketchikan	7,789	693,221	51.7%
Wrangell-Petersburg	8,343	342,063	54.7%
SE TOTALS	96,266	12,801,114	

Southwest Link	Count	Stateroom Miles	Capacity Ratio*
Akutan-Cold Bay	110	17,380	60.4%
Chenega Bay-Cordova	23	2,231	8.7%
Chenega Bay-Seward	14	812	7.7%
Chenega Bay-Valdez	50	4,350	13.7%
Chignik-Kodiak	140	34,860	76.9%
Chignik-Sandpoint	119	16,422	65.4%
Cold Bay-False Pass	114	6,612	62.6%
Cold Bay-King Cove	110	2,750	60.4%
Cordova-Chenega Bay	18	1,746	11.5%
Cordova-Seward	31	4,464	4.7%
Cordova-Tatitlek	57	2,850	24.4%
Cordova-Valdez	176	13,024	17.2%
False Pass-Unalaska	115	11,845	63.2%
Homer-Kodiak	486	66,096	35.0%
Homer-Port Lions	630	84,420	63.8%
Homer-Seldovia	36	612	1.9%
King Cove-Cold Bay	114	2,850	62.6%
King Cove-Sandpoint	123	12,054	67.6%
Kodiak-Chignik	145	36,105	79.7%
Kodiak-Homer	831	113,016	59.9%
Kodiak-Port Lions	492	23,616	49.8%
Kodiak-Seward	627	115,995	44.2%
Port Lions-Homer	543	72,762	55.0%
Port Lions-Kodiak	579	27,792	58.6%
Sandpoint-Chignik	127	17,526	69.8%
Sandpoint-King Cove	131	12,838	72.0%
Seldovia-Homer	29	493	1.5%
Seward-Chenega Bay	71	4,118	10.8%
Seward-Cordova	29	4,176	6.1%
Seward-Juneau	7	3,780	6.4%
Seward-Kodiak	594	109,890	41.9%
Seward-Valdez	289	41,616	37.9%
Tatitlek-Cordova	27	1,350	11.5%
Tatitlek-Valdez	51	1,122	21.8%
Unalaska-Akutan	105	4,725	57.7%
Valdez-Cordova	120	8,880	11.1%
Valdez-Seward	358	51,552	34.3%
Valdez-Tatitlek	26	572	11.1%
Valdez-Yakutat	358	102,030	54.7%
Yakutat-Juneau	366	82,716	56.0%
Yakutat-Valdez	373	106,305	57.0%
SW TOTALS	8,744	1,228,353	

Cross-Gulf links are shown in the region of the embarking port.

Note: Due to problems in capturing stateroom data, usage may be underreported.

2002 Link Volume Summary Report of Stateroom Usage

*Capacity Ratio is calculated using the Cabin capacities in the Vessel Data Table.

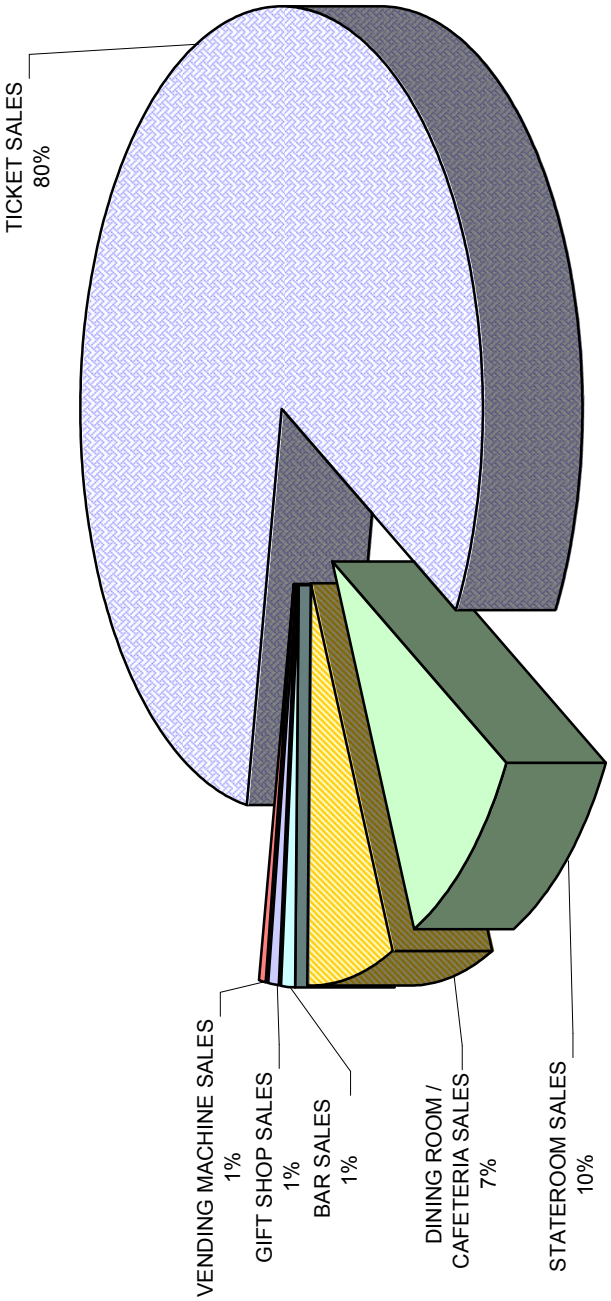
Alphabetical Order by Embarking Port

Southeast Link	Count	Stateroom Miles	Capacity Ratio*
Bellingham-Ketchikan	5,247	3,121,965	77.0%
Bellingham-Prince Rupert	168	87,024	78.5%
Haines-Juneau	8,385	570,180	36.1%
Haines-Skagway	3,278	42,614	14.4%
Hollis-Ketchikan	46	1,840	26.7%
Hollis-Wrangell	35	3,500	40.7%
Hoonah-Juneau	417	20,016	53.9%
Hoonah-Kake	18	2,088	41.9%
Hoonah-Sitka	469	55,342	83.9%
Juneau-Excursion	4	200	5.5%
Juneau-Haines	6,900	469,200	30.0%
Juneau-Hoonah	491	23,568	76.1%
Juneau-Ketchikan	106	24,910	16.2%
Juneau-Petersburg	4,867	598,641	48.4%
Juneau-Sitka	3,770	497,640	64.1%
Juneau-Skagway	98	7,938	30.0%
Juneau-Valdez	149	77,480	26.1%
Juneau-Yakutat	389	87,914	59.5%
Kake-Juneau	66	7,524	76.7%
Kake-Petersburg	52	3,380	40.3%
Kake-Sitka	234	26,910	49.5%
Ketchikan-Bellingham	4,304	2,560,880	68.5%
Ketchikan-Hollis	27	1,080	31.4%
Ketchikan-Juneau	532	125,020	28.1%
Ketchikan-Petersburg	260	29,120	52.6%
Ketchikan-Prince Rupert	4,494	408,954	41.2%
Ketchikan-Sitka	22	5,016	20.2%
Ketchikan-Wrangell	8,708	775,012	59.3%
Petersburg-Juneau	6,106	751,038	65.4%
Petersburg-Kake	239	15,535	42.8%
Petersburg-Sitka	3,277	511,212	62.4%
Petersburg-Wrangell	8,571	351,411	51.8%
Prince Rupert-Bellingham	547	283,346	72.8%
Prince Rupert-Ketchikan	3,412	310,492	33.1%
Sitka-Hoonah	409	48,262	56.0%
Sitka-Juneau	3,162	417,384	62.0%
Sitka-Kake	43	4,945	50.0%
Sitka-Petersburg	3,936	614,016	62.0%
Skagway-Haines	4,080	53,040	17.7%
Skagway-Juneau	42	3,402	38.5%
Wrangell-Hollis	34	3,400	19.8%
Wrangell-Juneau	58	9,512	53.2%
Wrangell-Ketchikan	8,575	763,175	52.4%
Wrangell-Petersburg	8,887	364,367	60.6%
SE TOTALS	104,914	14,139,493	

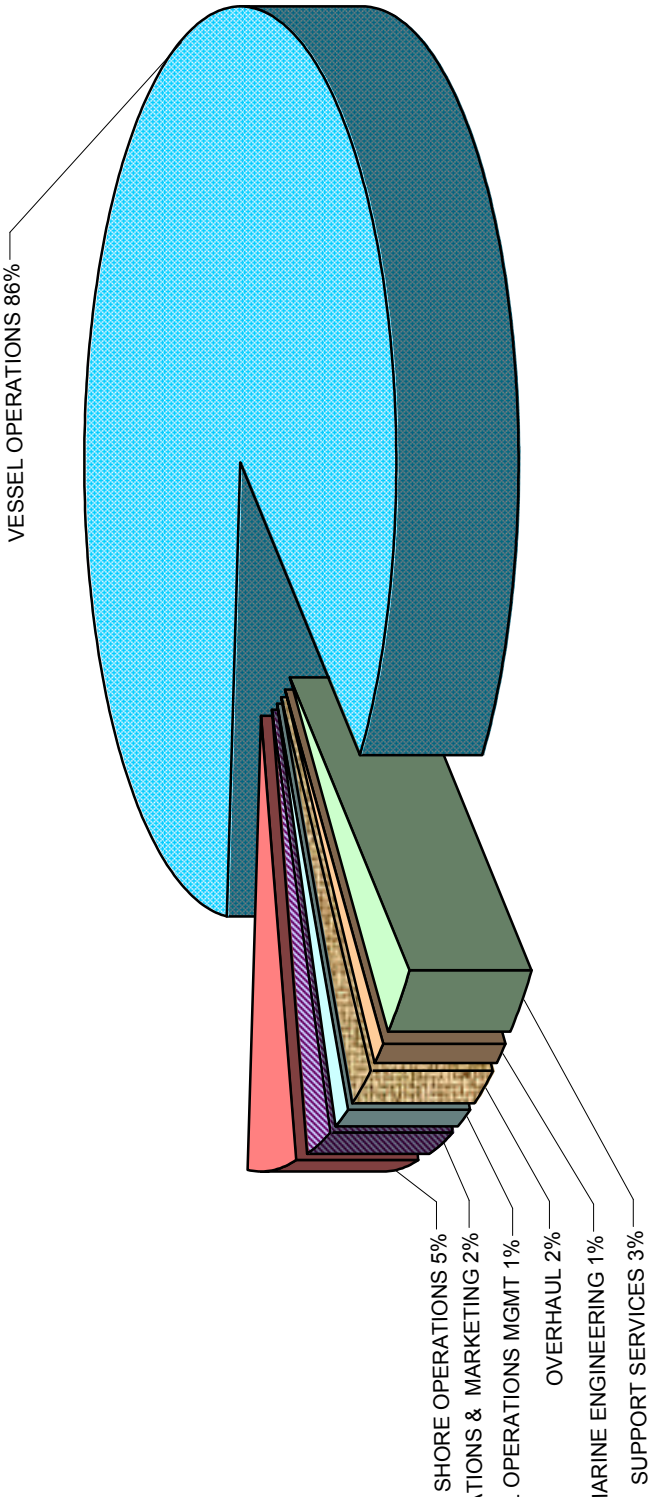
Southwest Link	Count	Stateroom Miles	Capacity Ratio*
Akutan-Cold Bay	109	17,222	59.9%
Akutan-Unalaska	27	1,215	100.0%
Chenega Bay-Cordova	17	1,649	8.0%
Chenega Bay-Seward	59	3,422	12.9%
Chenega Bay-Valdez	67	5,829	16.8%
Chignik-Kodiak	146	36,354	80.2%
Chignik-Sandpoint	136	18,768	74.7%
Cold Bay-False Pass	135	7,830	74.2%
Cold Bay-King Cove	113	2,825	62.1%
Cordova-Chenega Bay	24	2,328	10.0%
Cordova-Seward	16	2,304	6.0%
Cordova-Tatitlek	59	2,950	22.3%
Cordova-Valdez	114	8,436	14.8%
False Pass-Akutan	23	1,334	88.5%
False Pass-Unalaska	112	11,536	71.8%
Homer-Kodiak	829	112,744	28.3%
Homer-Port Lions	564	75,576	77.5%
Homer-Seldovia	15	255	0.6%
King Cove-Cold Bay	139	3,475	76.4%
King Cove-Sandpoint	122	11,956	67.0%
Kodiak-Chignik	153	38,097	84.1%
Kodiak-Homer	1,207	164,152	41.6%
Kodiak-Port Lions	329	15,792	45.2%
Kodiak-Seward	660	122,100	34.3%
Port Lions-Homer	371	49,714	51.0%
Port Lions-Kodiak	525	25,200	72.1%
Sandpoint-Chignik	118	16,284	64.8%
Sandpoint-King Cove	154	15,092	84.6%
Seldovia-Homer	16	272	0.6%
Seward-Chenega Bay	83	4,814	13.5%
Seward-Cordova	23	3,312	8.7%
Seward-Juneau	13	7,020	50.0%
Seward-Kodiak	551	101,935	29.1%
Seward-Valdez	333	47,952	42.2%
Seward-Yakutat	38	11,628	34.9%
Tatitlek-Cordova	40	2,000	13.7%
Tatitlek-Valdez	59	1,298	22.3%
Unalaska-Akutan	112	5,040	61.5%
Valdez-Chenega Bay	37	3,219	17.0%
Valdez-Cordova	75	5,550	9.8%
Valdez-Juneau	87	45,240	20.0%
Valdez-Seward	437	62,928	37.6%
Valdez-Tatitlek	40	880	13.7%
Valdez-Yakutat	357	101,745	62.5%
Yakutat-Juneau	390	88,140	57.4%
Yakutat-Valdez	388	110,580	59.3%
SW TOTALS	9,422	1,377,992	

Cross-Gulf links are shown in the region of the embarking port.

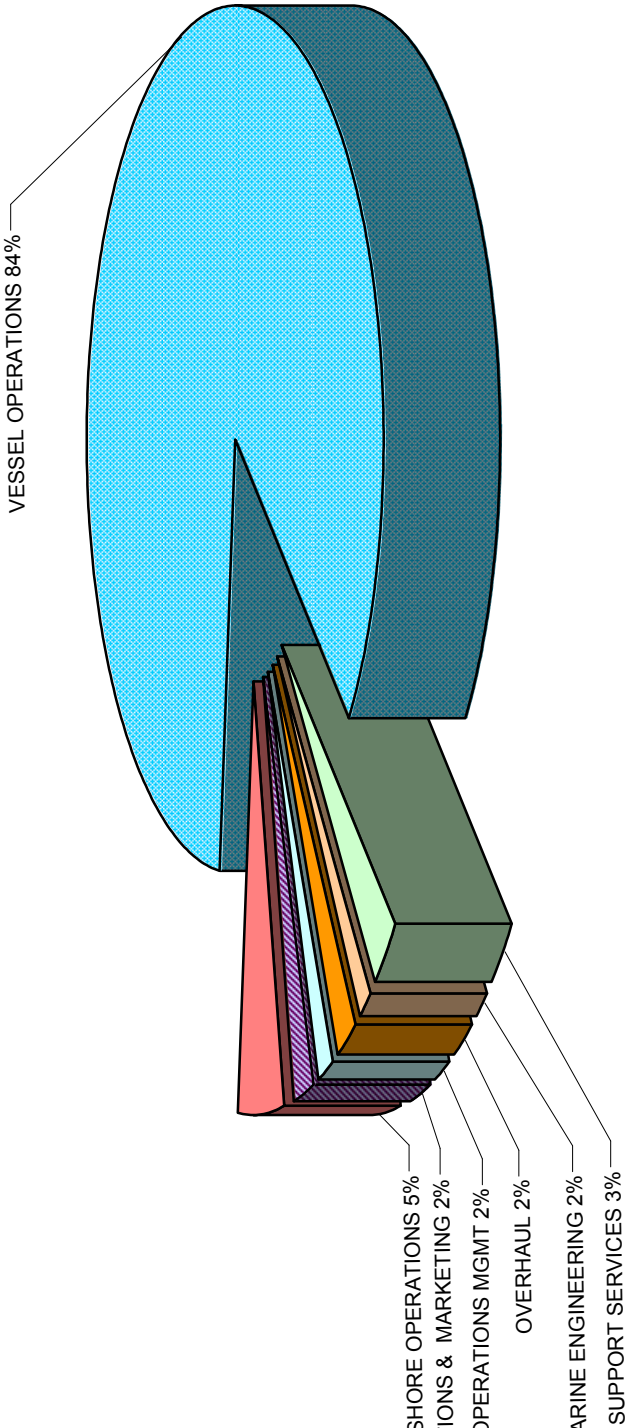
ALASKA MARINE HIGHWAY SYSTEM FUND REVENUES
FOR THE YEAR ENDED JUNE 30, 2001
$37,552



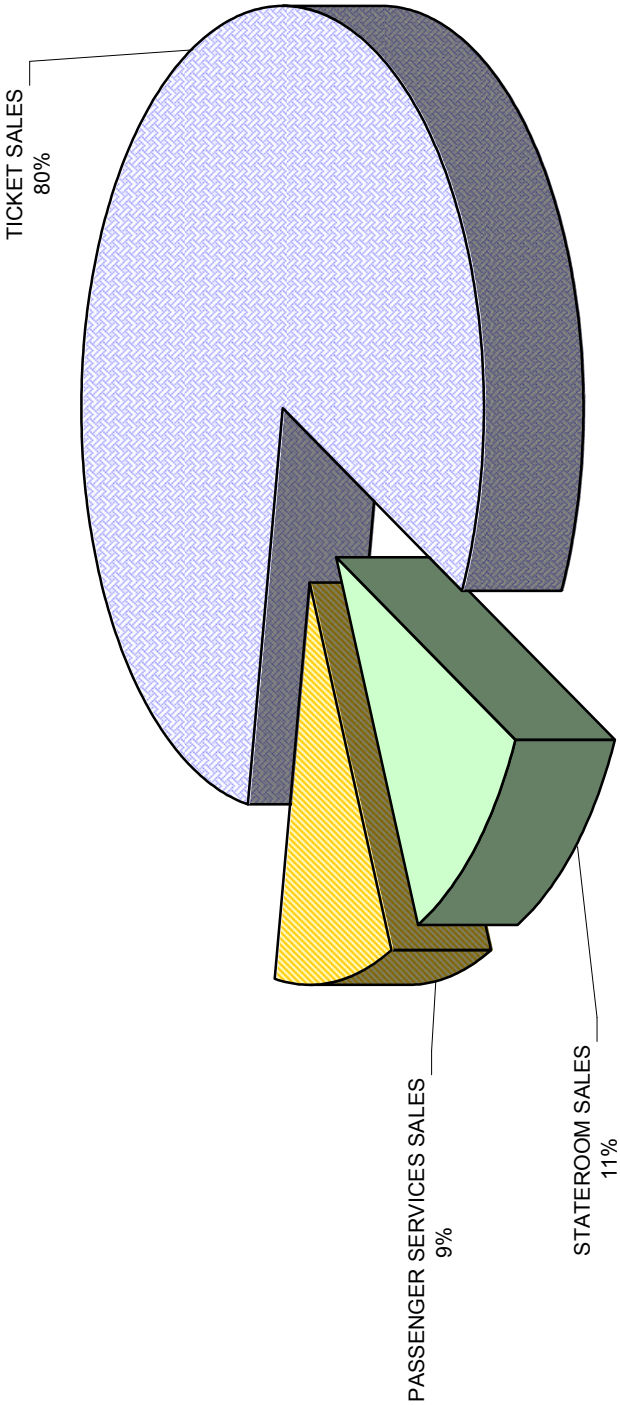
ALASKA MARINE HIGHWAY SYSTEM FUND EXPENDITURES
FOR YEAR ENDED JUNE 30, 2001
$81,741



ALASKA MARINE HIGHWAY SYSTEM FUND EXPENDITURES
FOR YEAR ENDED JUNE 30, 2002
$79,594 Thousand

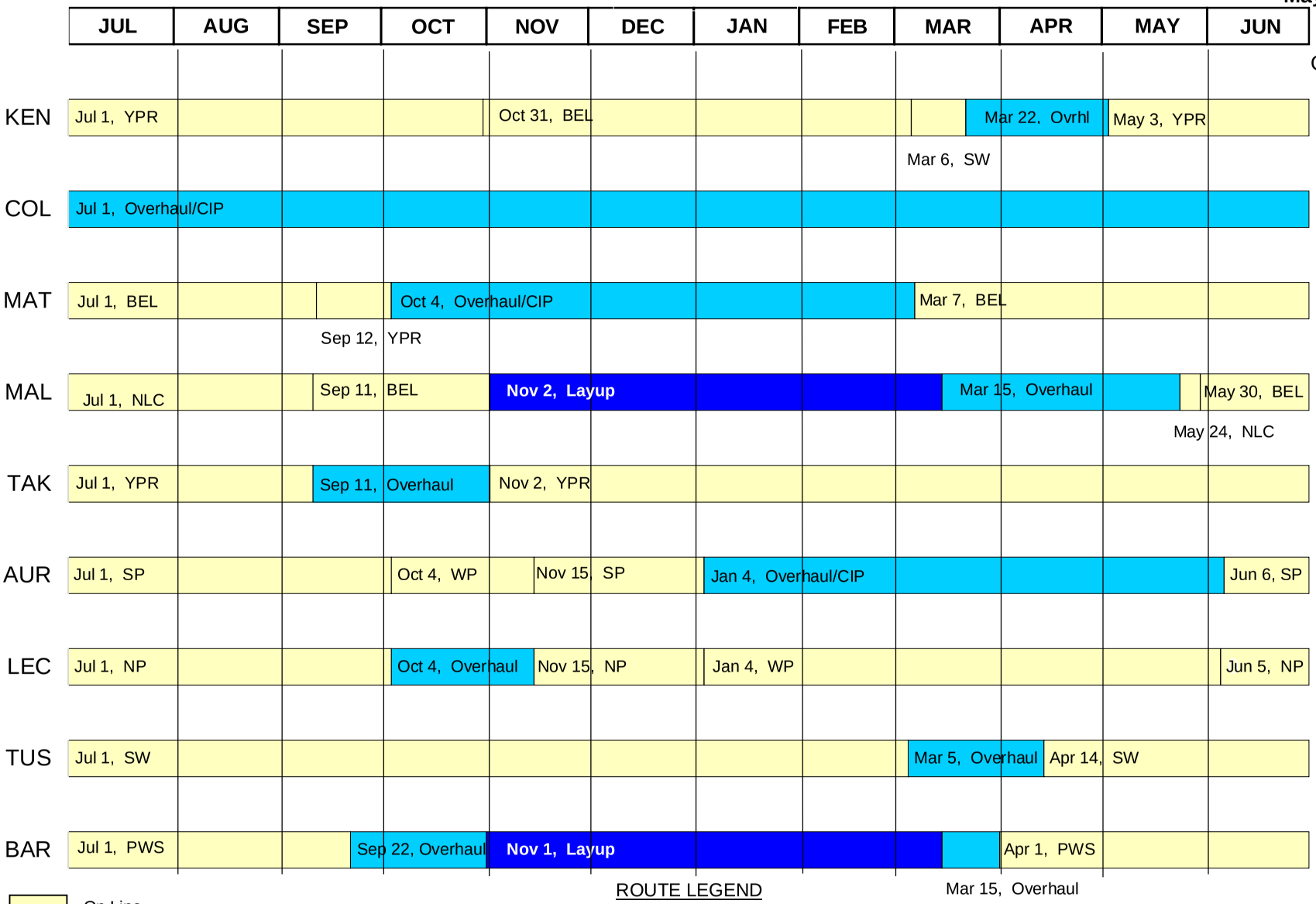


ALASKA MARINE HIGHWAY SYSTEM FUND UNRESTRICTED REVENUES
FOR THE YEAR ENDED JUNE 30, 2002
$39,451 Thousand



Operating Plan
2000-2001

Revision 01.9
May 09, 2001



On Line
Overhaul & Construction (CIP)
Layup

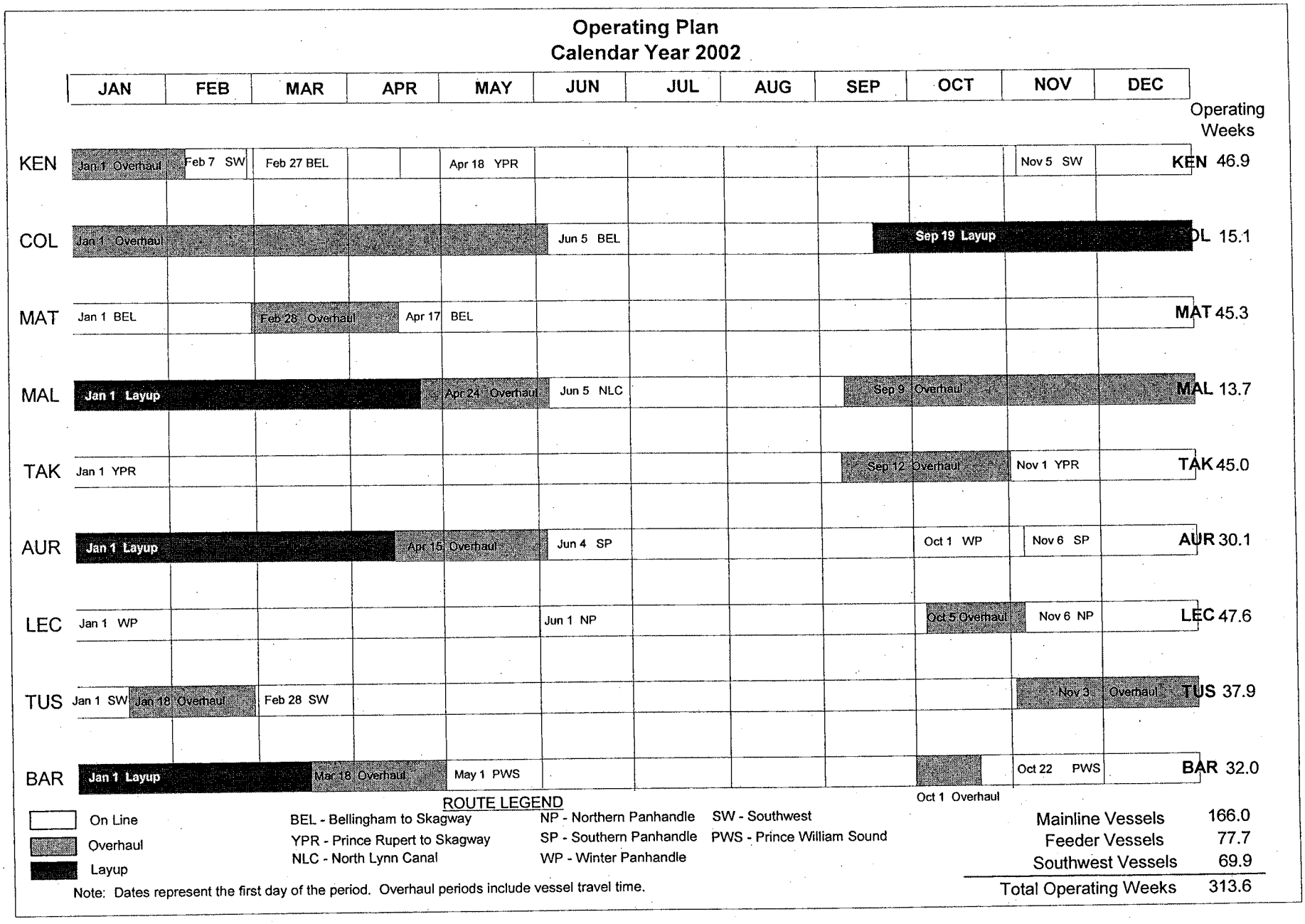
ROUTE LEGEND

BEL - Bellingham to Skagway
YPR - Prince Rupert to Skagway
NLC - Northern Lynn Canal
NP - Northern Panhandle
SP - Southern Panhandle
WP - Winter Panhandle
SW - Southwest
PWS - Prince William Sound

Mainline Vessels	144.0
Feeder Vessels	76.4
Southwest	71.3
Total Operating	291.7

Note: Dates represent the first day of the period. Overhaul and Construction periods include vessel travel time.

APPENDIX I


Operating Plan
Calendar Year 2002
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Operating Weeks
KEN
Jan 1 Overhaul
Feb 7 SW
Feb 27 BEL
Apr 18 YPR
Nov 5 SW
KEN 46.9
COL
Jan 1 Overhaul
Jun 5 BEL
Sep 19 Layup
OL 15.1
MAT
Jan 1 BEL
Feb 28 Overhaul
Apr 17 BEL
MAT 45.3
MAL
Jan 1 Layup
Apr 24 Overhaul
Jun 5 NLC
Sep 9 Overhaul
MAL 13.7
TAK
Jan 1 YPR
Sep 12 Overhaul
Nov 1 YPR
TAK 45.0
AUR
Jan 1 Layup
Apr 15 Overhaul
Jun 4 SP
Oct 1 WP
Nov 6 SP
AUR 30.1
LEC
Jan 1 WP
Jun 1 NP
Oct 5 Overhaul
Nov 6 NP
LEC 47.6
TUS
Jan 1 SW
Jan 18 Overhaul
Feb 28 SW
Nov 3
Overhaul
TUS 37.9
BAR
Jan 1 Layup
Mar 18 Overhaul
May 1 PWS
Oct 22 PWS
BAR 32.0
Oct 1 Overhaul
On Line
Overhaul
Layup
ROUTE LEGEND
BEL - Bellingham to Skagway
YPR - Prince Rupert to Skagway
NLC - North Lynn Canal
NP - Northern Panhandle
SP - Southern Panhandle
WP - Winter Panhandle
SW - Southwest
PWS - Prince William Sound
Mainline Vessels 166.0
Feeder Vessels 77.7
Southwest Vessels 69.9
Total Operating Weeks 313.6
Note: Dates represent the first day of the period. Overhaul periods include vessel travel time.

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APPENDIX D

M/V Aurora Capital Improvement Projects

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M/V Aurora Capital Improvement Projects
April 2004

The M/V Aurora was constructed in 1977. The August 2001 AMHS Fleet Condition Survey identified the CIP Projects necessary through 2010 to extend the M/V Aurora's service life to 2044. These CIP projects were necessary to keep the vessel operating on a 24 hour a day schedule. The project scopes have been reduced to what would be necessary to keep the vessel operating as the Haines/Skagway Shuttle through at least 2038, which is the time period used in the Juneau Access Traffic Forecast. For years 2011 through 2038 the percentages provided in Appendix N of the Juneau Access Marine Segments Report were used. An acquisition cost of $25,000,000 was assumed.

Estimated CIP projects necessary to keep the M/V Aurora operating as the Haines/Skagway Shuttle:

2006	Functional Upgrades	$6,000,000
2010	Mechanical Upgrades	$8,425,000
2027	Hotel Upgrades	$6,250,000
2027	Safety Upgrades	$3,750,000
	Total CIP	$24,425,000