

PRINCE WILLIAM SOUND/COPPER RIVER AREA
TRANSPORTATION PLAN

TRAVEL DEMAND FORECASTS
TECHNICAL MEMORANDUM

REVISED DRAFT

prepared for the

Alaska Department of Transportation and Public Facilities

prepared by

Parsons Brinckerhoff

Northern Economics, Inc.

and

Christopher Beck & Associates

in association with

HDR Alaska, Inc.

The Glostén Associates, Inc.

Ogden Beeman & Associates, Inc.

November 1999



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INTRODUCTION AND BACKGROUND

The purpose of this Technical Memorandum is to document the development of travel demand forecasts for the Prince William Sound/Copper River (PWS/CR) area for the years 2010 and 2020. Travel demand forecasts are developed by mode: large and small certificated air carriers; freight; highways; and the Alaska Marine Highway System (AMHS). The primary objective in developing multi-modal travel forecasts for the PWS/CR area is to have an objective basis upon which to evaluate potential transportation investments. To forecast travel for communities within the PWS/CR area for the years 2010 and 2020, travel demand models were developed. Separate models were used to forecast travel for each mode. The following sections describe the forecasting methodology and process used; the population forecasts that were used in the travel forecasting models; and the low, base, and high forecasts for air passenger travel, freight demand, highway travel, and AMHS travel.

Travel demand forecasts tailored to each proposed AMHS alternative are also provided for the year 2020. Specially tailored forecasts are not provided for modes other than ferries, because the bulk of the alternatives generated for evaluation pertain to AMHS service only. The focus in this plan on marine transport is attributable to several considerations, including the following:

- Compared to aviation, DOT&PF has far more ability to shape marine service than it does air service. With the exception of Essential Air Service, a federal program that subsidizes air service to a small number of relatively isolated communities, private air carriers alone determine the frequency, routing, and price of air travel among the communities they serve. Although most airports are publicly owned, government's ability to shape service patterns, which are determined by market and operational considerations, is extremely limited.
- Meanwhile, in the PWS/CR area, the viability of overland transportation as provided by roads or rail is quite limited by significant topographical, environmental, and political constraints.

For these reasons, the alternatives developed as part of the PWS/CR Area Transportation Plan focus on marine service.

The first section of this report describes the methodologies developed to forecast annual travel demand by mode, under the assumption of no change in service level. These forecasts provide a baseline – one function of which is to provide a benchmark against which the transportation alternatives can be measured. The second section describes how the methodology for forecasting AMHS travel demand developed in the first section was refined to reflect the characteristics of the specific AMHS alternatives. This discussion also includes the results of the application of this refined methodology – that is, monthly travel demand forecasts for both passengers and vehicles – for each marine alternative.

GENERAL FORECASTING METHODOLOGY AND RESULTS

METHODOLOGY

Data Collection

The first step in the development of travel demand forecasting models for the PWS/CR area was to collect appropriate available data. As part of developing the *Prince William Sound/Copper River Area Transportation Plan Existing Conditions Technical Memorandum*, the study team obtained data regarding passenger and cargo travel at airports in the region, highway travel, and travel on the Alaska Marine Highway System (AMHS). Population data for communities in the PWS/CR area were used to develop travel demand forecasts for air travel, freight movement, highway travel, and AMHS travel.

Model Specification and Application

The development of models to forecast travel in the PWS/CR area was constrained by the availability of existing and forecast data. Depending on what data was available, some models were developed using regression analysis techniques, others were developed using linear trend analysis, and still others were developed by applying growth factors. The goal was to develop the most reasonable forecasts possible given available data.

Some of the models developed (i.e., those for forecasts of enplanements and travel on the Alaska Marine Highway System) were based on origin-destination pairs (O–D pairs). As will be described in more detail later in this report, forecasts were made on trip ends rather than O–D pairs. Once trip ends were forecast, these trip ends were allocated to O–D pairs. The trip ends were allocated to O–D pairs by assuming in the first iteration that the proportion of trip ends to each community currently and in the future will remain constant. However, because different communities will experience different rates of growth, the forecasts adjusted total trip ends to communities based on this growth. Therefore, the proportion of trip ends to other communities in the future will differ from current conditions. The initial allocation, then, was adjusted iteratively until the allocation of trips was such that total trip ends at a given community was equal or nearly equal (usually within 1 percent) to the forecast total trip ends.

A number of factors can influence current and future travel demand. For example, several of the most important variables that could be included in models estimating demand for travel include population, employment, and income. However, only existing and future population forecasts were available at the community level. For some modes, models to forecast travel demand were developed using regression analysis techniques. Regression analysis techniques use information about one variable to obtain information about another variable. In the case of the travel demand models for the PWS/CR area, information about population and transportation trends were used to obtain information about travel behavior. The regression analysis determines the relationship between current or historical travel behavior in communities, and current community-level population or other characteristics. The relationship between these variables becomes the regression “model.” This model is then applied to 2010 and 2020 forecasts of population and other variables to predict future travel behavior.

The strength of the models tested were compared based on the coefficient of determination (the R^2 coefficient). The R^2 coefficient, which varies between 0 and 1.0, helps to explain how well the model fits. In general, the higher the R^2 coefficient, the better the fit of the model. Another way of thinking about the R^2 coefficient is that it represents the proportion of the variation in the dependent variable (for example, passenger trips on airlines) which can be “explained” by the model. So, for example, an R^2 coefficient of 0.60 indicates that about 60 percent of the variation in the predicted passenger trip values can be explained by the values of the variables included in the model.

To help improve the accuracy of the models, forecast trips were adjusted based on how well the model predicted current trips. Trips “forecast” by the model for the existing year based on current conditions were compared to the actual number of trips that occurred. The difference between trips “forecast” by the model for the existing year and the actual number of trips that occurred was attributed to factors not captured in the model (either unknown factors or factors for which data was unavailable). These differences or errors are not considered random, so the error “rate” for a given community was assumed to be constant for the future year forecasts. Therefore, the ratio between existing year trips “forecast” and the actual number of trips that occurred were then applied to future forecasts. For instance, if the model indicated that 100 trips would occur in a given community based on existing conditions, and we know that actually 110 trips occurred, we adjusted the future forecasts accordingly. So, if the 2020 forecast indicated that 200 trips occurred, the 2020 forecast was adjusted according to the difference between the model and actual results. Therefore, 200 was multiplied by 110 trips/100 trips and the forecast was adjusted to 220 trips instead of 200 trips.

POPULATION, INCOME, AND EMPLOYMENT FORECASTS

The population forecasts for each community in the Prince William Sound/Copper River area were developed by Northern Economics. These community level population forecasts were developed based on existing population data developed annually by the Alaska Department of Licensing (ADOL), and on area-wide population forecasts that were developed by Dr. Oliver Scott Goldsmith of the Institute of Social and Economic Research (ISER).¹

Table 1 presents existing population and population forecasts for communities in the PWS/CR area. Figure 1 through Figure show the projections of population, employment, total personal income and per capita income for the PWS/CR area as a whole. In general the methods used for the area-wide population forecasts assume that population is driven by economic growth and migration patterns. Actual population estimates from 1990-1996 are shown with black diamonds. Employment and income numbers were not available for the years 1990-1995, so for these figures the timeline runs from 1996-2020. Income estimates are adjusted for inflation to 1996 dollars.

¹ Dr. Goldsmith's forecasts were presented in *Economic / Demographic Projections for Selected Regions in Alaska (EDP)*, prepared for the Alaska Department of Transportation and Public Facilities in August 1997.

Table 1
Existing Population and 2010 and 2020 Forecasts

Community	Existing	2010			2020		
	1996	Low	Base	High	Low	Base	High
Seward	4,169	4,625	4,937	5,726	5,041	5,755	6,935
Chitina	78	100	106	123	114	130	157
Cordova	2,556	2,654	2,832	3,286	2,833	3,234	3,897
Valdez	4,195	4,492	4,795	7,855	4,850	5,536	8,026
Whittier	293	384	618	911	424	772	1,211
Tatitlek	124	117	125	145	125	143	172
Chenegra	93	63	68	79	61	70	85
Other	91	95	101	117	101	115	139
PWS/CR Area	11,599	12,530	13,582	18,242	13,550	15,755	20,621

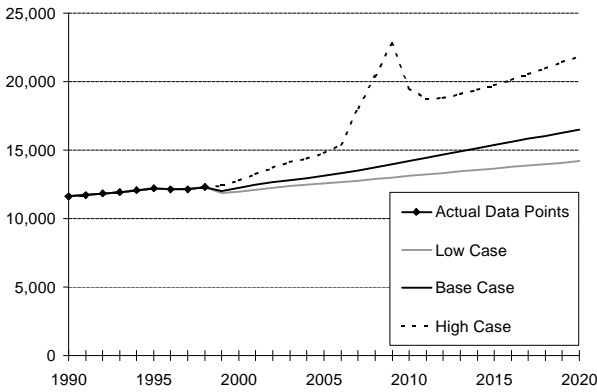
In Figures 1 through 4, low and base cases trends are relatively consistent. Area-wide population increases by about 100 per year in the Low case and by about 200 each year in the Base Case. In the High Case, however, there is a spike in population from about the year 2006 to 2013, driven by two major assumptions: 1) a new oil field is developed in the Alaska National Wildlife Reserve (ANWR), and 2) a natural gas pipeline is constructed from Prudhoe Bay to Valdez. Construction employment peaks at 7,202, with operating employment after the peak at 1,130. Most of these employment gains will be realized in Valdez. Other assumptions in the High Case push population to grow at about 400 per year before the spike in population begins in 2005. After the spike ends, at about year 2013, population in the PWS/CR area continues to increase by about 370 per year. Changes in income and per capita income, both adjusted to 1996 dollars, track with population and employment with consistent trends in the low and base case and a significant spike in the High Case.

From these area-wide population forecasts, community level population forecasts were developed. The community population forecasts were developed to capture the trend within the local community while also, for all communities totaled, adding up to the population forecast for the PWS/CR area projected by ISER. Community-level data used to develop these forecasts included ADOL's annual community level existing population estimates, which are largely based on the Alaska Permanent Fund Dividend Application database and are benchmarked to the 1990 Census.

Projections of the community populations in the High-Case scenario were complicated by the large population changes projected in the area-wide population forecasts for Valdez under the High-Case scenario beginning in the year 2005. It was assumed that all of the extra population growth in the area attributable to the construction and operation of a natural gas pipeline occurs in Valdez. Figures 5 through 11 present community-level population forecasts for selected communities in the PWS/CR area.

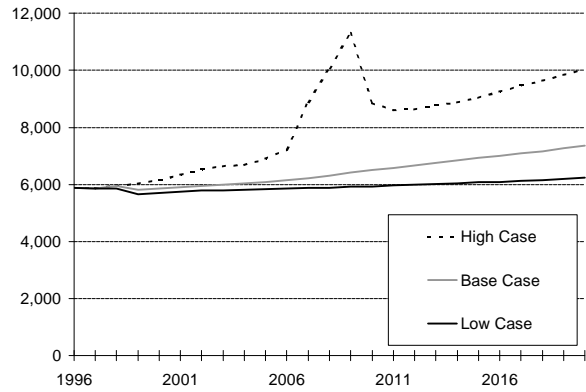
Area-Wide Population, Employment and Income Forecasts

Figure 1
Projected PWS/CR Area
Population



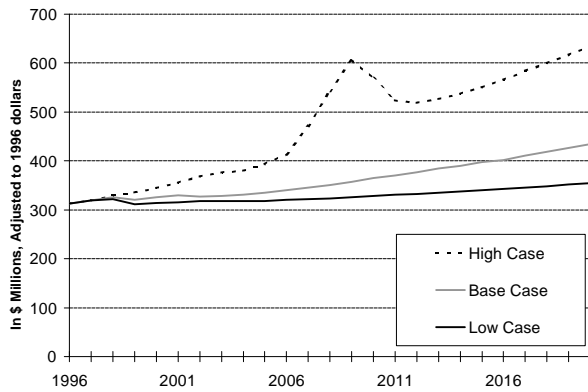
Source: Goldsmith, EDP, ISER, August 1997.

Figure 2
Projected PWS/CR Area
Employment



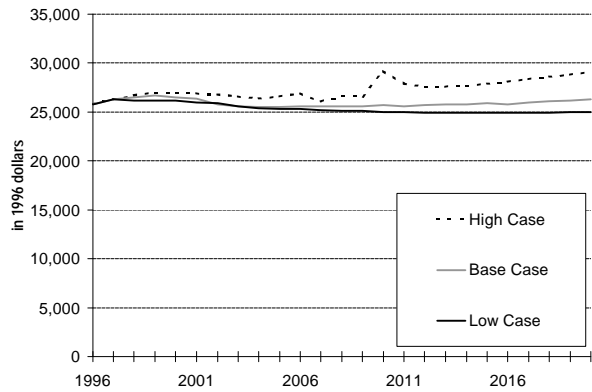
Source: Goldsmith, EDP, ISER, August 1997.

Figure 3
Projected PWS/CR Area
Personal Income



Source: Goldsmith, EDP, ISER, August 1997.

Figure 4
Projected PWS/CR Area
Per Capita Income



Source: Goldsmith, EDP, ISER, August 1997.

Community Level Population Forecasts

Figure 5
Projected Seward Population

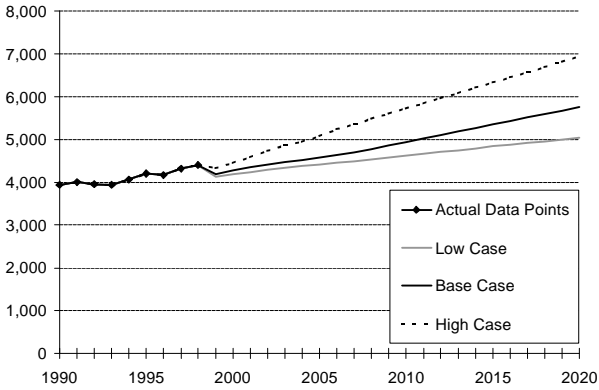


Figure 6
Projected Whittier Population

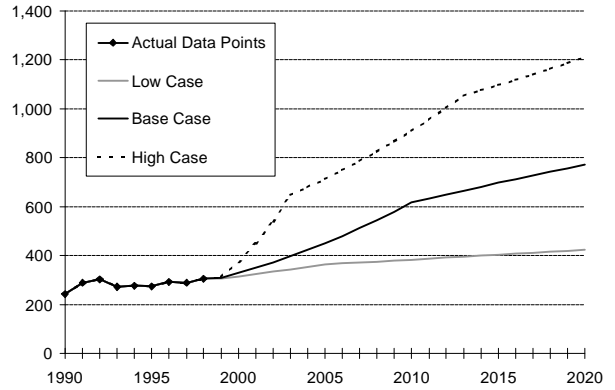


Figure 7
Projected Chenega Population

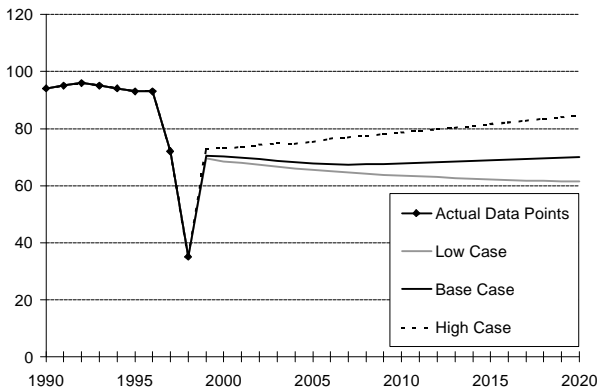


Figure 8
Projected Tatitlek Population

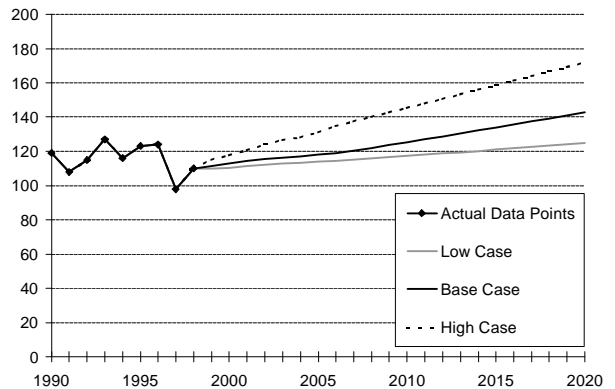


Figure 9
Projected Valdez Population

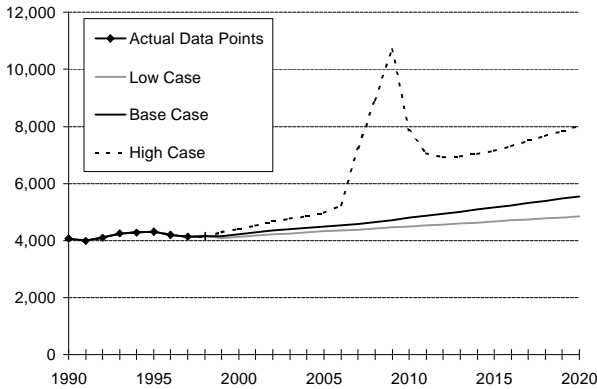


Figure 10
Projected Cordova Population

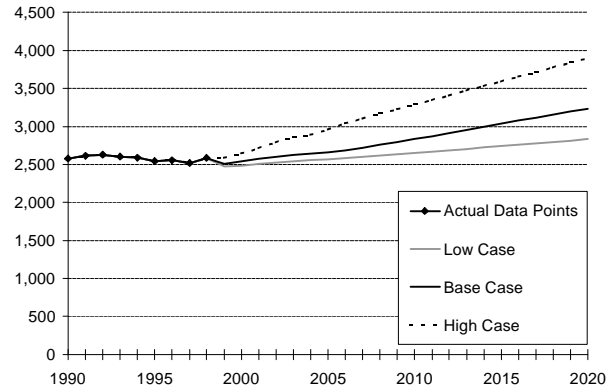
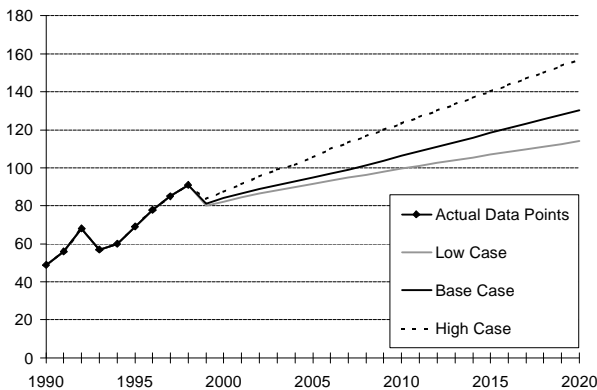


Figure 11
Projected Chitina Population



TRANSPORTATION DEMAND FORECASTS

Enplanement Forecasts

The *Prince William Sound/Copper River Transportation Plan Existing Conditions Technical Memorandum* identified historic trends in passenger enplanements at airports in the Prince William Sound/Copper River area. Total enplanements comprise enplanements by large certificated carriers and small certificated carriers.

Total enplanements were forecast for the years 2010 and 2020 as a function of population. As a function of population, the model that provided the best “fit” with existing conditions data is as follows:

$$\text{Airplane Trip Ends for a Given Community} = (8.476)(\text{Population})$$

The R² coefficient for this model was 0.39, indicating that about 39 percent of variation in enplanements at a trip end can be explained by population. To help improve the accuracy of the model, forecast trips were adjusted as described in the *Model Specification and Application* section of this memorandum.

Airplane trip end forecasts using low, base, and high population, employment, and income forecasts for the years 2010 and 2020 are presented in Tables 2 and 3. As shown, airplane trip ends are forecast to increase for the low, base and high scenarios for all communities in the study area.

Table 2
Current and 2010 Forecast Airplane Trip Ends

Community	Existing	Low 2010 Airplane Trip Ends	Base 2010 Airplane Trip Ends	High 2010 Airplane Trip Ends
Cordova	42,050	43,657	46,598	54,053
Seward	1,466	1,626	1,736	2,014
Valdez	57,018	61,057	65,170	106,766
Total Enplanement Trip Ends in PWS/CR Area	100,534	106,340	113,504	162,832

Table 3
Current and 2020 Forecast Airplane Trip Ends

Community	Existing	Low 2020 Airplane Trip Ends	Base 2020 Airplane Trip Ends	High 2020 Airplane Trip Ends
Cordova	42,050	46,607	53,203	64,116
Seward	1,466	1,773	2,024	2,439
Valdez	57,018	65,919	75,248	109,082
Total Enplanement Trip Ends in PWS/CR Area	100,534	114,299	130,475	175,637

Freight

Freight Forecasts for Petroleum Products

The Institute of Social and Economic Research's (ISER's) 2010 and 2020 forecasts indicate no change in petroleum-related employment. Trends from 1986 to 1999 suggest a decline in the production of oil in Alaska.² From this data, low, base and high freight forecasts for petroleum products were developed for Valdez. The low, base, and high forecasts call for an annual **decrease** in oil production of 5 percent, 2 percent, and 0 percent respectively. For Whittier, Cordova, and Seward the low, base, and high forecasts indicate relatively minor annual changes of

² Source: Energy Information Administration/Short-Term Energy Outlook – July 1999, Table A5. Annual U.S. Petroleum Supply and Demand, <http://www.eia.doe.gov/emeu/steo/pub/a5tab.html> as viewed July 1999. This table indicates an average annual decrease in Alaska production of oil of 4.5 percent between 1986 and 2000.

-1.0 percent, 0 percent, and +1. percent, respectively. Current and forecast petroleum tons shipped for the years 2010 and 2020 are presented in Tables 4 and 5.

Table 4
Current and 2010 Forecast Annual Petroleum Shipped for
Prince William Sound/Copper River Area Communities
(Tons)

Community	Existing	Low 2010	Base 2010	High 2010
Valdez	80,841,000	41,499,100	62,168,500	80,841,000
Whittier	45,000	34,600	45,000	48,000
Cordova	3,000	2,300	3,000	3,200
Seward	835,000	642,100	835,000	890,900

Table 5
Current and 2020 Forecast Annual Petroleum Shipped for
Prince William Sound/Copper River Area Communities
(Tons)

Community	Existing	Low 2020	Base 2020	High 2020
Valdez	80,841,000	24,847,000	50,796,200	80,841,000
Whittier	45,000	28,300	45,000	50,500
Cordova	3,000	1,900	3,000	3,400
Seward	835,000	524,700	835,000	936,500

Freight Forecasts for Fish Products

Existing data for fish tons shipped are average for the last several years during which data was collected from the Waterborne Commerce Statistics Center (WCSC), which operates under the auspices of the U.S. Army Corps of Engineers. The primary sources of WCSC data are the freight shippers themselves. Forecasts of fish tons shipped were developed according to forecasts of fisheries-related employment in the PWS/CR area. The fisheries-related employment forecasts were developed by the Institute of Social and Economic Research (ISER). Most fisheries-related forecasts indicate no change, or very modest change in fisheries-related employment in the future. This scenario of no change is reflected in ISER's 2010 and 2020 base year forecast. From ISER's base forecast of no change in fisheries-related employment, we have developed low and high forecasts. The low and high forecasts indicate only minor changes of -1.0 percent and +0.5 percent, respectively. Therefore, the fish tons shipped for the communities listed were forecast to decrease at an annual rate of 1.0 percent through 2020 for the low scenario, remain constant for the base scenario, and increase at an annual rate of 0.5 percent

through year 2020 for the high scenario. Current and forecast fish tons shipped for the years 2010 and 2020 are presented in Tables 6 and 7.

Table 6
Current and 2010 Forecast Annual Fish Shipped for
Prince William Sound/Copper River Area Communities
(Tons)

Community	Existing	Low 2010	Base 2010	High 2010
Seward	19,800	17,400	19,800	21,100
Whittier	11,300	9,900	11,300	12,100
Cordova	4,300	3,800	4,300	4,600
Valdez	1,700	1,500	1,700	1,800

Table 7
Current and 2020 Forecast Annual Fish Shipped for
Prince William Sound/Copper River Area Communities
(Tons)

Community	Existing	Low 2020	Base 2020	High 2020
Seward	19,800	15,700	19,800	22,200
Whittier	11,300	9,000	11,300	12,700
Cordova	4,300	3,400	4,300	4,800
Valdez	1,700	1,300	1,700	1,900

Freight Forecasts for Other Products including Mail

Freight forecasts for other products including mail were developed as a function of existing population, existing tons freight shipped in and out of communities, marine/railroad connections, road connections, and future population. Whittier provides marine-rail transfer opportunities due to its location on the Alaska Railroad line, which is why the annual tonnage of other cargo shipped is relatively high. The forecasts were adjusted based on how well the function predicted current tons shipped. Tables 8 and 9 present current, 2010 and 2020 forecast cargo tons shipped to/from communities in the PWS/CR area.

Table 8
Current and 2010 Forecast Annual Other Cargo Shipped To/From
Prince William Sound/Copper River Area Communities
(Tons)

Community	Existing	Low 2010	Base 2010	High 2010
Cordova	14,000	14,500	15,500	18,000
Seward	55,100	56,700	57,800	60,700
Valdez	116,400	118,700	121,000	144,200
Whittier	444,400	444,900	446,200	447,800

Table 9
Current and 2020 Forecast Annual Other Cargo Shipped To/From
Prince William Sound/Copper River Area Communities
(Tons)

Community	Existing	Low 2020	Base 2020	High 2020
Cordova	14,000	15,500	17,700	21,300
Seward	55,100	58,200	60,800	65,000
Valdez	116,400	121,400	126,600	145,500
Whittier	444,400	445,100	447,100	449,500

Highways

For the new Whittier Road, travel demand forecasts are presented from the *Whittier Access Project - Viable Alternatives Report*, prepared for the Alaska Department of Transportation and Public Facilities, January, 1994. Forecasts for Seward, Richardson, and Edgerton Highways are based on regression analysis of historical data. Each graph presents historical data (usually 1991 through 1996), a linear trend analysis, and an exponential trend analysis. Linear trend analyses are conducted to represent the base forecasts, and exponential trend analyses are conducted to represent a growth forecasts.

The formula for the linear growth trend is based on the least-squares algorithm:

$y = (m \cdot x) + b$ where

- y = annual vehicle trips for a given year x
- m = coefficient
- x = year
- b = constant

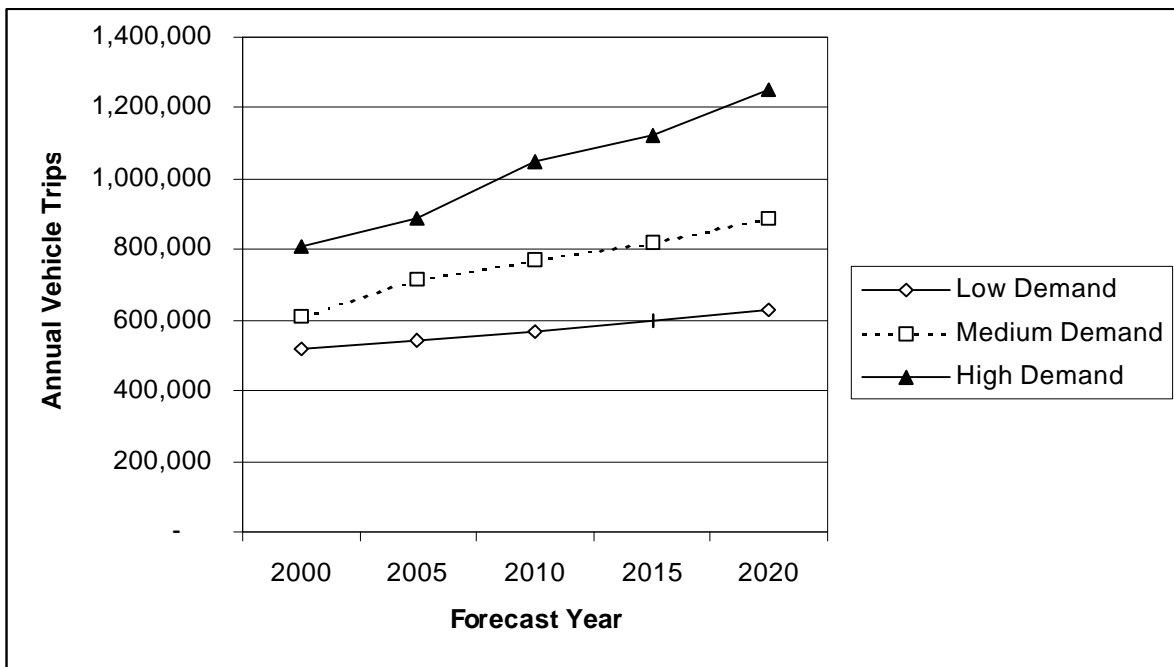
The formula for the exponential growth trend is $y = b \cdot (m^x)$ where

- y = annual vehicle trips for a given year x
- m = coefficient
- x = year
- b = constant

Whittier Road Forecast

For the new Whittier Road, travel demand forecasts are presented from the *Whittier Access Project - Viable Alternatives Report*, prepared for the Alaska Department of Transportation and Public Facilities, January, 1994. Figure 12 presents estimated annual demand for the new Whittier Road to year 2020. As shown, the forecasts for annual demand for the Whittier Road indicate average annual vehicle trips of about 500,000 to 800,000 in year of opening, increasing to 600,000 to 1.2 million by year 2020. However, even assuming the high forecast, the average annual traffic using Whittier Road would be expected to fall well within the facility's capacity.

Figure 12
Estimated Annual Demand for New Whittier Road³



Seward Highway Forecast

The forecast trend for annual vehicle trips for the Seward Highway through year 2020 are presented in Figure 13. As presented, annual vehicle trips on Seward Highway may double between now and year 2020, increasing from less than 700,000 annual vehicle trips to as many as 1.4 million annual vehicle trips by year 2020 for the growth scenario. However, even assuming the growth forecast, the average annual traffic using the Seward Highway would be expected to fall well within the facility's capacity.

³ Source: Chapter 7, *Whittier Access Project - Viable Alternatives Report*, Prepared for the Alaska Department of Transportation and Public Facilities by HDR Engineering, January, 1994. The Whittier Access Project study only evaluated to year 2015, so for this graph values have been interpolated for year 2020.

The formula for the linear growth trend is $y = (m \cdot x) + b$ where:

y = annual vehicle trips for year x
 $m = 20,231$
 x = year
 $b = -4.0E+07$

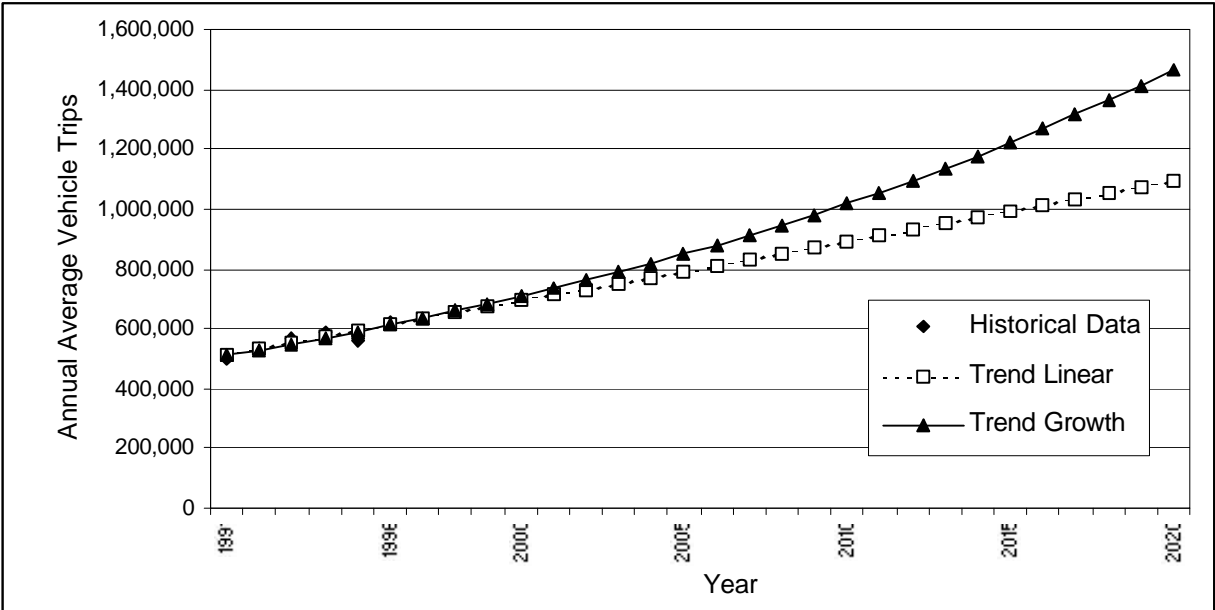
The R^2 for the linear growth trend equation is about 0.81, indicating that about 81 percent of variation in annual vehicle trips can be explained by the model.

The formula for the exponential growth trend is $y = b \cdot (m^x)$ where:

y = annual vehicle trips for year x
 $m = 1.03700$
 x = year
 $b = 2.E-26$

The R^2 for the exponential growth trend equation is about 0.81, indicating that about 81 percent of variation in annual vehicle trips can be explained by the model.

Figure 13
Forecast Trends for
Average Annual Vehicle Trips on Seward Highway



Richardson Highway Forecast

The forecast trend for annual vehicle trips for the Richardson Highway through year 2020 are presented in Figure 14. Annual vehicle trips on Richardson Highway may double between now and year 2020, increasing from less than 350,000 annual vehicle trips to as many as 790,000 annual vehicle trips by year 2020 for the growth scenario. However, even assuming the growth forecast, the average annual traffic using Richardson Highway would be expected to fall well within the facility's capacity.

The formula for the linear growth trend is $y = (m \cdot x) + b$ where:

$$\begin{aligned} y &= \text{annual vehicle trips for year } x \\ m &= 10,689 \\ x &= \text{year} \\ b &= -2.1E+07 \end{aligned}$$

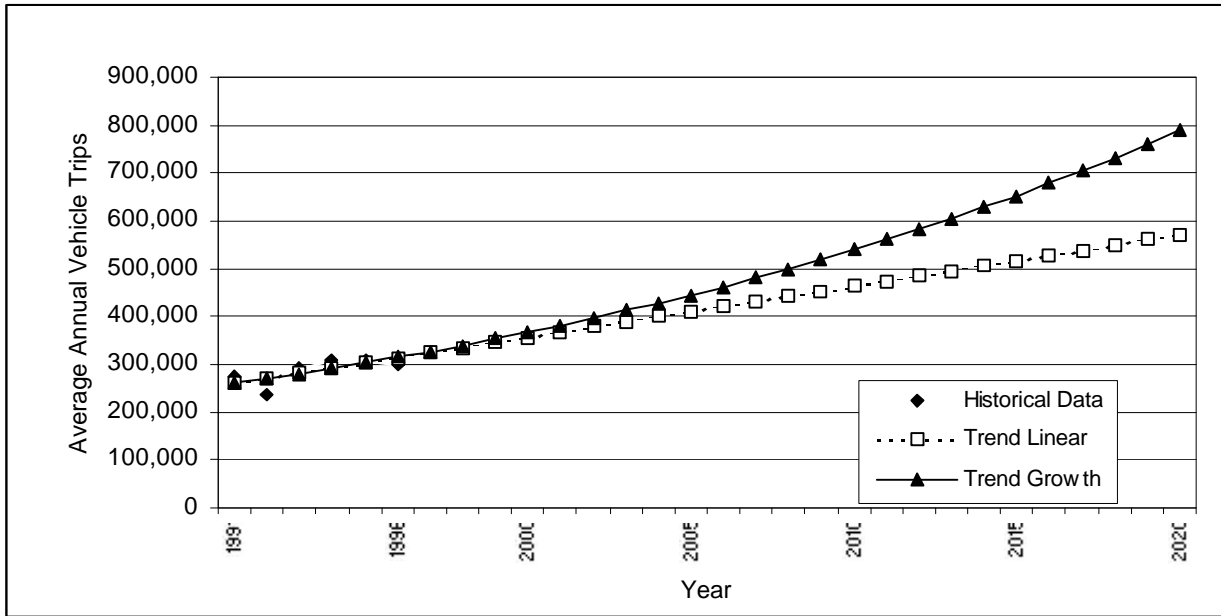
The R^2 for the linear growth trend equation is about 0.51, indicating that about 51 percent of variation in annual vehicle trips can be explained by the model.

The formula for the exponential growth trend is $y = b \cdot (m^x)$ where:

$$\begin{aligned} y &= \text{annual vehicle trips for year } x \\ m &= 1.03909 \\ x &= \text{year} \\ b &= 2.E-28 \end{aligned}$$

The R^2 for the exponential growth trend equation is about 0.48, indicating that about 48 percent of variation in annual vehicle trips can be explained by the model.

Figure 14
Forecast Trends for
Average Annual Vehicle Trips on Richardson Highway



Edgerton Highway Forecast

The forecast trend for annual vehicle trips for the Edgerton Highway through year 2020 are presented in Figure 15. Annual vehicle trips on Edgerton Highway may more than double between now and year 2020, increasing from about 120,000 annual vehicle trips to as many as 350,000 annual vehicle trips by year 2020 for the growth scenario. However, even assuming the growth forecast, the average annual traffic using the Edgerton Highway would be expected to fall well within the facility's capacity.

The formula for the linear growth trend is $y = (m \cdot x) + b$ where:

y = annual vehicle trips for year x

$m = 4,563$

x = year

$b = -9.0E+06$

The R^2 for the linear growth trend equation is about 0.37, indicating that about 37 percent of variation in annual vehicle trips can be explained by the model.

The formula for the exponential growth trend is $y = b \cdot (m^x)$ where:

y = annual vehicle trips for year x

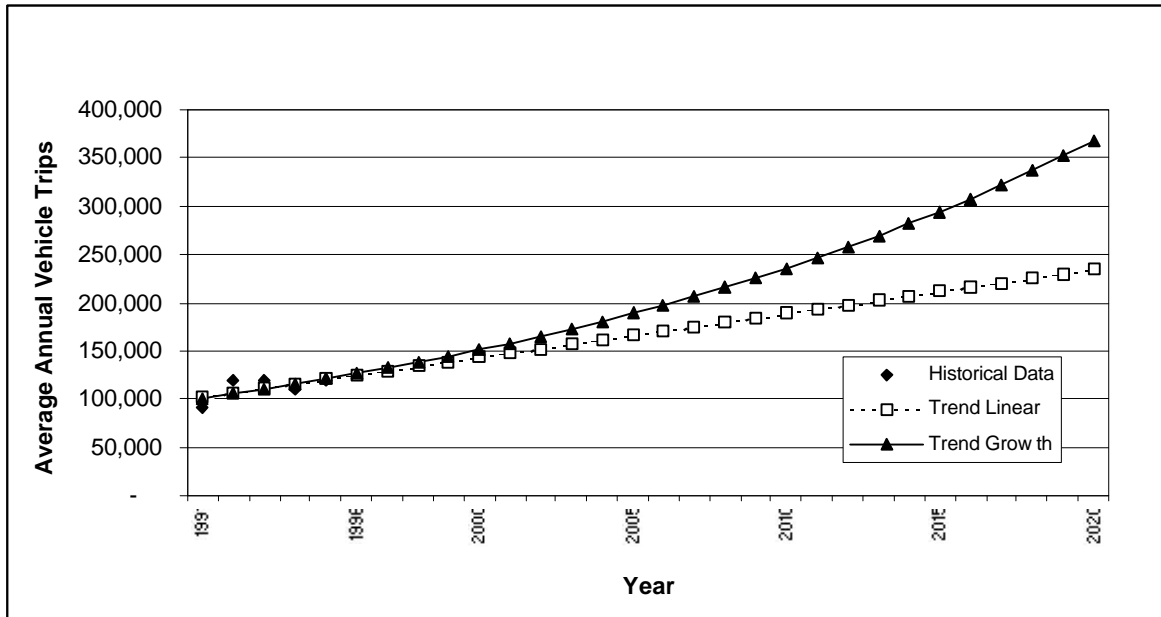
$m = 1.04547$

x = year

$b = 3.E-34$

The R^2 for the exponential growth trend equation is about 0.38, indicating that about 38 percent of variation in annual vehicle trips can be explained by the model.

Figure 15
Forecast Trends for
Average Annual Vehicle Trips on Edgerton Highway



Alaska Marine Highway System (AMHS)

To forecast travel demand for AMHS trips, AMHS users were separated into two categories: residents and visitors. Separate forecasts, based on specific data and assumptions, were developed for each. The rationale for this separation is that demand for AMHS service by visitors is expected to grow at a much faster rate than demand by residents, which is primarily a function of population. To improve the accuracy of the visitor demand forecasts, special research regarding trends and volumes in tourism in the PWS/CR Area was prepared by Chris Beck and Associates. These findings provided the basis of the visitor demand forecasts. This work, entitled *Prince William Sound/Copper River Area Tourism Growth Projections*, is contained in the Appendix to this report.

Resident Forecasts

Total AMHS trip ends for residents were forecast for the years 2010 and 2020 as a function of population and port calls. To improve the strength of the model, AMHS data for several communities in southeast Alaska were included in the calibration. As a function of population and port calls, the model that provided the best “fit” with existing conditions data is as follows:

$$\text{AMHS Trip Ends for a Given Community}^4 = (.97)(\text{Population}) + (27.9)(\text{Port Calls})$$

⁴ Annual Trips Ends for a community are capped at $330 \times \text{Population}^{0.5}$

The R² coefficient for this model was 0.88, indicating that about 88 percent of variation in resident AMHS trip ends can be explained by population and port calls. To improve the model's accuracy, forecast trips were adjusted as described in the *Model Specification and Application* section of this memorandum.

Visitor Forecasts

Visitor demand forecasts were based on Christopher Beck and Associates' estimates of the one-time jumps in demand likely due to the opening of the Whittier Tunnel, followed by varying growth rates thereafter through to the 2010 and 2020 forecast years. The one-time jumps, by community, are provided in Table 10. Tables 11 and 12 present 2010 and 2020 total AMHS trip ends for residents and visitors for communities in the PWS/CR Study Area.

Table 10
Assumed One-Time Jumps in Demand
Assumed due to Opening of the Whittier Tunnel

Community	Low	Base	High
Chenega	None	None	None
Cordova	2,000	6,000	12,000
Seward	None	None	None
Tatitlek	None	None	None
Valdez	10,000	20,000	30,000
Whittier	10,000	20,000	30,000

Table 11
Current and 2010 Forecasts
AMHS Trip Ends for PWS/CR Area Communities

Community	Existing	Low 2010 Total AMHS Trip Ends	Base 2010 Total AMHS Trip Ends	High 2010 Total AMHS Trip Ends
Chenega	112	113	116	125
Cordova	11,811	15,209	22,325	39,316
Seward (PWS Trips Only)	2,230	2,958	3,433	4,667
Tatitlek	205	210	216	231
Valdez	28,186	44,558	65,421	108,339
Whittier	19,405	34,470	54,635	91,134

Table 12
 Current and 2020 Forecasts
 AMHS Trip Ends for PWS/CR Area Communities

Community	Existing	Low 2020 Total AMHS Trip Ends	Base 2020 Total AMHS Trip Ends	High 2020 Total AMHS Trip Ends
Chenega	112	115	122	144
Cordova	11,811	16,671	27,862	64,857
Seward (PWS Trips Only)	2,230	3,354	4,411	7,656
Tatitlek	205	215	228	268
Valdez	28,186	50,777	85,833	186,599
Whittier	19,405	39,707	72,782	161,575

ALTERNATIVE-SPECIFIC FORECASTING: METHODOLOGY AND RESULTS

In addition to forecasting AMHS demand assuming no change in infrastructure or service, as described in the previous section, alternative-specific year 2020 passenger and vehicle demand forecasts were developed for each marine alternative set forth as part of the PWS/CR Area Transportation Plan. These alternative-specific forecasts include not only annual total forecasts, but also specification of demand levels by month of the year and port.

Described in this section is the methodology used to develop the alternative-specific AMHS travel demand forecasts. This methodology is based on the generalized AMHS travel demand model described in the previous section. Summarized in Table 13 are the AMHS Alternatives.

Table 13
Summary of the AMHS Alternatives
Developed as Part of the PWS/CR Area Transportation Plan

Alternative	Summary
1a	Existing Conditions
1b	Replace <i>Bartlett</i> with <i>Aurora</i> (34-week service)
1c	Replace <i>Bartlett</i> with <i>Aurora</i> (45-week service)
2a	Timed Transfer at Valdez (2 new vessels)
2b	Dedicated Port Service by New High-Speed Vessel
2c	Loop Service by New High-Speed Vessel
2d	Dedicated Port Service by Two New Vessels
3a	<i>Aurora</i> or <i>Bartlett</i> Plus New High-Speed Vessel
4a	<i>Tustumena</i> Between Valdez and Seward
4b	Water Taxi Between Whittier and Chenega

METHODOLOGY

As noted in the previous section, separate methodologies were developed to forecast resident and visitor demand for AMHS service. Applied to data reflecting existing conditions, these methodologies provide a baseline estimate of travel demand – assuming no change in the transportation infrastructure or level of service provided.

Resident Demand

To estimate demand under the conditions created by the proposed alternatives, a subsequent modeling task had to be completed. As described in the previous section, the independent variables with the greatest utility in predicting travel demand for residents were determined to be population and the number of port calls. The measurable difference between existing service

and the service proposed under the various alternatives developed as part of this planning effort is in the number of port calls. As such, the number of port calls that would be provided to each community were used in the regression equation developed in the previous section.

$$\text{AMHS Trip Ends for a Given Community} = (.97)(\text{Population}) + (27.9)(\text{Port Calls})$$

Low, base, and high forecasts of service demand were developed by using the same number of port calls per alternative, but the low, base, and high population forecasts provided by ISER.

Visitor Demand

Visitor demand was estimated by assuming one-time jumps in demand attributable to the opening of the Whittier Tunnel, along with average annual growth rates of 1.5%, 3.0%, and 6.0%, for the low, base, and high cases, respectively (Table 14). These values are based on the *Prince William Sound/Copper River Area Tourism Growth Projections*, developed by Christopher Beck & Associates as part of this planning effort. To estimate the annual total, resident and visitor forecasts were combined (Table 15).

Table 14
Visitor Growth Assumptions
Used in Developing Visitor Portion of AMHS Forecasts

Community	Low	Base	High
Chenega	1.5% average annual growth	3.0% average annual growth	6.0% average annual growth
Cordova	2,000 passengers added after year 2000; 1.5% annual growth thereafter	6,000 passengers added after year 2000; 3.0% annual growth thereafter	12,000 passengers added after year 2000; 6.0% annual growth thereafter
Seward	1.5% average annual growth	3.0% average annual growth	6.0% average annual growth
Tatitlek	1.5% average annual growth	3.0% average annual growth	6.0% average annual growth
Valdez	10,000 passengers added after year 2000; 1.5% annual growth thereafter	20,000 passengers added after year 2000; 3.0% annual growth thereafter	30,000 passengers added after year 2000; 6.0% annual growth thereafter
Whittier	10,000 passengers added after year 2000; 1.5% annual growth thereafter	20,000 passengers added after year 2000; 3.0% annual growth thereafter	30,000 passengers added after year 2000; 6.0% annual growth thereafter

Table 15
Alternative-Specific AMHS 2020 Travel Demand Forecasts

ALTERNATIVE	LOW			BASE			HIGH		
	Resident	Visitor	Total	Resident	Visitor	Total	Resident	Visitor	Total
1A Existing Conditions									
Chenega	99	16	115	100	22	122	102	43	144
Cordova	7,324	9,347	16,671	7,701	20,161	27,862	8,325	56,532	64,857
Seward (Prince William Sound Trips Only)	1,042	2,311	3,354	1,172	3,239	4,411	1,386	6,269	7,656
Tatitlek	186	29	215	187	40	228	190	78	268
Valdez	7,536	43,241	50,777	7,990	77,843	85,833	9,637	176,962	186,599
Whittier	2,005	37,702	39,707	2,192	70,590	72,782	2,427	159,148	161,575
1B Replace Bartlett with Aurora (34-Week Service)									
Chenega	99	16	115	100	22	122	102	43	144
Cordova	7,324	9,347	16,671	7,701	20,161	27,862	8,325	56,532	64,857
Seward (Prince William Sound Trips Only)	1,042	2,311	3,354	1,172	3,239	4,411	1,386	6,269	7,656
Tatitlek	186	29	215	187	40	228	190	78	268
Valdez	7,535	43,241	50,776	7,990	77,843	85,833	9,637	176,962	186,599
Whittier	2,005	37,702	39,707	2,192	70,590	72,782	2,427	159,148	161,575
1C Replace Bartlett with Aurora (45-Week Service)									
Cordova	6,240	9,347	15,588	6,617	20,161	26,778	7,242	56,532	63,773
Tatitlek	186	29	215	187	40	228	190	78	268
Valdez	6,716	43,241	49,957	7,170	77,843	85,013	8,818	176,962	185,780
Whittier	2,608	37,702	40,309	2,794	70,590	73,384	3,030	159,148	162,178
2A Timed X-fer at Valdez (2 new vessels)									
Cordova	12,551	9,347	21,899	12,928	20,161	33,089	13,552	56,532	70,083
Valdez	17,120	43,241	60,361	17,574	77,843	95,417	19,222	176,962	196,184
Whittier	5,869	37,702	43,570	6,055	70,590	76,645	6,291	159,148	165,439
2B Dedicated Port Service by New High-Speed Vessel									
Cordova	12,551	9,347	21,899	12,928	20,161	33,089	13,552	56,532	70,083
Valdez	17,120	43,241	60,361	17,574	77,843	95,417	19,222	176,962	196,184
Whittier	5,869	37,702	43,570	6,055	70,590	76,645	6,291	159,148	165,439
2C Loop Service by New High-Speed Vessel									
Cordova	12,551	9,347	21,899	12,928	20,161	33,089	13,552	56,532	70,083
Valdez	10,165	43,241	53,406	10,620	77,843	88,462	12,267	176,962	189,228
Whittier	5,869	37,702	43,570	6,055	70,590	76,645	6,291	159,148	165,439
2D Dedicated Port Service by Two New Vessels									
Cordova	12,551	9,347	21,899	12,928	20,161	33,089	13,552	56,532	70,083
Valdez	22,982	43,241	66,223	24,530	77,843	102,373	26,177	176,962	203,139
Whittier	6,797	37,702	44,499	9,168	70,590	79,758	11,484	159,148	170,632
3A Aurora or Bartlett + New High-Speed Vessel									
Chenega	190	16	206	191	22	213	193	43	236
Cordova	12,524	9,347	21,872	12,901	20,161	33,062	13,525	56,532	70,056
Valdez	16,092	43,241	59,333	16,546	77,843	94,389	18,193	176,962	195,155
Whittier	6,797	37,702	44,499	9,168	70,590	79,758	11,097	159,148	170,245
4A Tustumena Between Valdez and Seward									
Chenega	99	16	115	100	22	122	102	43	144
Cordova	7,324	9,347	16,671	7,701	20,161	27,862	8,325	56,532	64,857
Seward (Prince William Sound Trips Only)	1,042	2,311	3,354	1,172	3,239	4,411	1,386	6,269	7,656
Tatitlek	186	29	215	187	40	228	190	78	268
Valdez	7,535	43,241	50,776	7,990	77,843	85,833	9,637	176,962	186,599
Whittier	2,005	37,702	39,707	2,192	70,590	72,782	2,427	159,148	161,575
4B Water Taxi between Whittier and Chenega									
Chenega	212	16	228	213	22	235	215	43	258

Vehicle Demand Rates

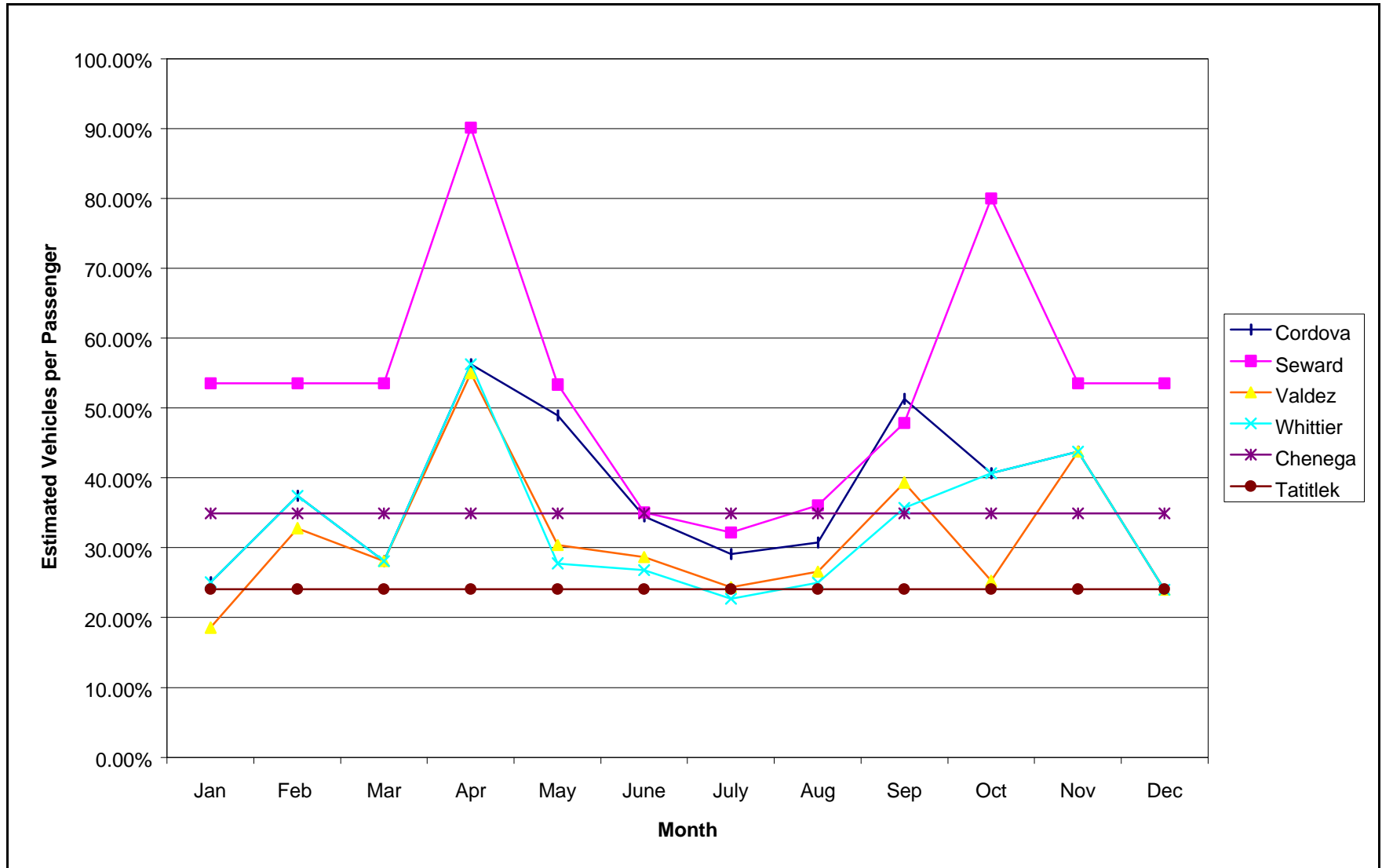
Vehicle demand rates, in vehicles per passenger, were calculated based on data from 1995 and 1996 *Annual Traffic Volume Reports of the Alaska Marine Highway System*. These reports provide summary statistics on the number of passengers – and vehicles – by port and by month. Data from 1995 and 1996 were averaged to develop the per passenger rates, by month and port (Table 16). Variance in vehicle-per-passenger rates is depicted graphically in Figure 16.

Table 16
Per Passenger Vehicle Demand Rates by Month and Port
(vehicles per passenger)

	Chenega	Cordova	Seward	Tatitlek	Valdez	Whittier
Jan	34.92%	22.27%	52.62%	24.03%	19.03%	44.09%
Feb	34.92%	28.98%	52.62%	24.03%	26.68%	44.09%
Mar	34.92%	23.71%	52.62%	24.03%	23.71%	44.09%
Apr	34.92%	47.36%	52.62%	24.03%	46.70%	44.09%
May	34.92%	47.25%	51.95%	24.03%	32.87%	52.65%
June	34.92%	35.93%	37.21%	24.03%	29.25%	36.13%
July	34.92%	31.18%	31.62%	24.03%	25.04%	31.91%
Aug	34.92%	30.90%	34.78%	24.03%	26.91%	35.42%
Sep	34.92%	47.69%	55.68%	24.03%	37.95%	51.76%
Oct	34.92%	37.98%	77.29%	24.03%	28.49%	78.64%
Nov	34.92%	38.99%	72.34%	24.03%	37.10%	36.17%
Dec	34.92%	24.09%	60.09%	24.03%	24.50%	30.04%

Notes: Because the number of passengers and vehicles for Chenega and Tatitlek were so low, rather than attempting to use these data to estimate demand by month, the yearly average was used instead. Because AMHS service is not currently provided to Whittier during winter months, per passenger vehicle rates from Cordova were substituted in the demand estimates, according to the logic that most winter trips to Whittier will be made by Cordovans. Since AMHS service to Seward is also seasonal, the average rate (from months for which data were available) was used.

Figure 16
Per Passenger Vehicle Demand Rates by Month



Demand Estimates by Month

Evaluation of various marine alternatives will require an understanding of not only total annual demand, but the dispersion of that demand over the year. The extent of peaking has implications for both capital and operational decisions.

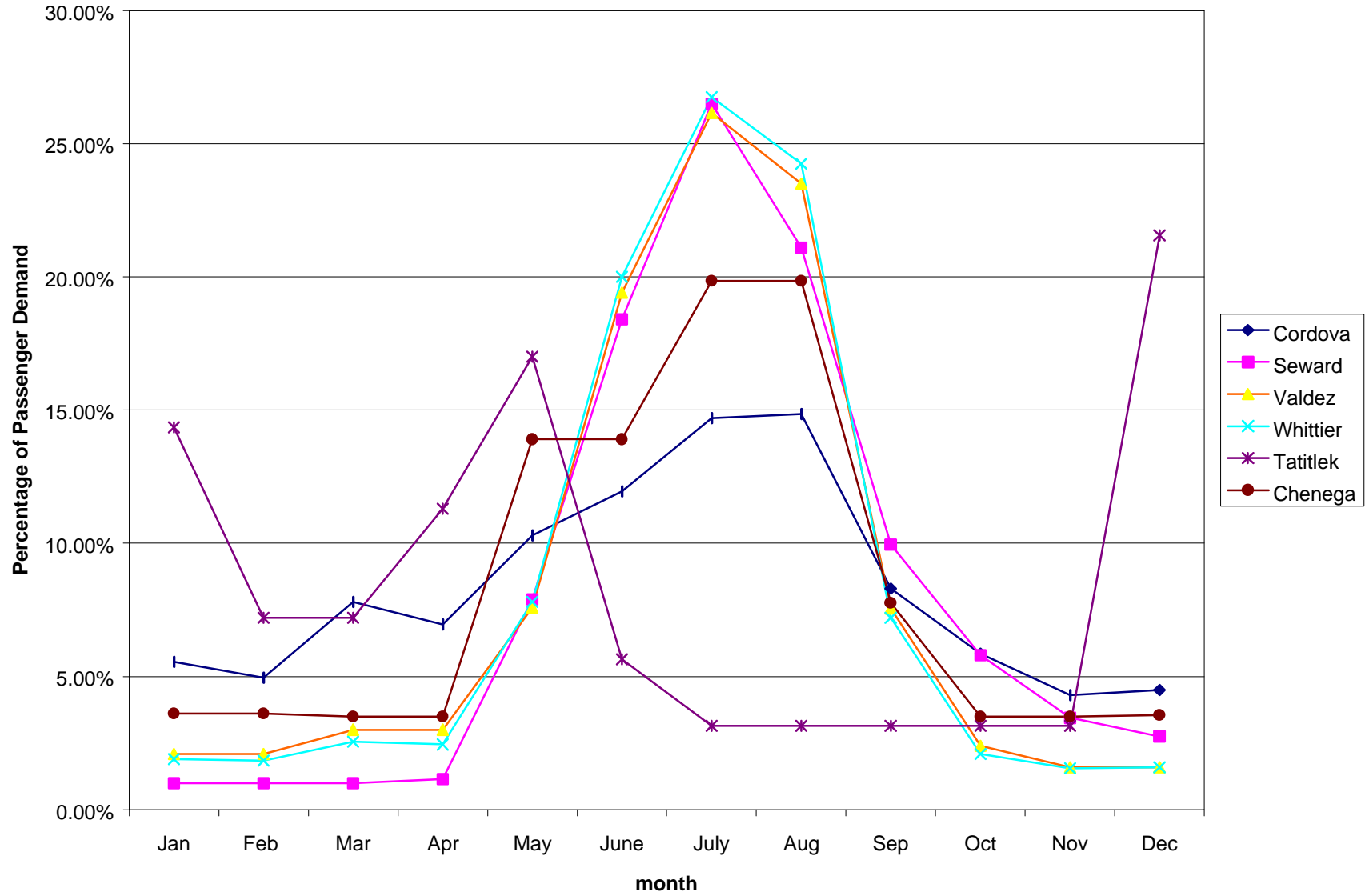
To allocate the demand forecasted on a yearly basis across the months of the year, an additional step was taken. Demand was allocated across the months of the year for each alternative on a community by community basis. This allocation was performed based on data from *Annual Traffic Volume Reports of the Alaska Marine Highway System* for 1994 through 1998. These reports provide a breakdown of demand by month for each community. Values for the various years were averaged to arrive at the percentages depicted in Table 17 and Figure 17, in both of which pronounced summer spikes are obvious. Of the study area's larger communities, Cordova experiences the least intense spiking, which reflects Cordovans' dependence on AMHS as a basic (as opposed to tourist) transportation mode.

Table 17
Passenger Demand Rates by Month
(adjusted to reflect 12-month service)

	Cordova	Seward	Valdez	Whittier	Tatitlek	Chenega
Jan	5.55%	1.00%	2.10%	1.90%	14.35%	3.60%
Feb	4.95%	1.00%	2.10%	1.85%	7.20%	3.60%
Mar	7.80%	1.00%	3.00%	2.55%	7.20%	3.50%
Apr	6.95%	1.15%	3.00%	2.45%	11.30%	3.50%
May	10.30%	7.90%	7.60%	7.80%	17.00%	13.90%
June	11.95%	18.40%	19.40%	20.00%	5.65%	13.90%
July	14.70%	26.50%	26.15%	26.75%	3.15%	19.85%
Aug	14.85%	21.10%	23.50%	24.25%	3.15%	19.85%
Sep	8.30%	9.95%	7.55%	7.20%	3.15%	7.75%
Oct	5.85%	5.80%	2.40%	2.10%	3.15%	3.50%
Nov	4.30%	3.45%	1.60%	1.55%	3.15%	3.50%
Dec	4.50%	2.75%	1.60%	1.60%	21.55%	3.55%

Note: Because AMHS service is currently provided to Whittier for May through September only, demand for months for which data is available was distributed among the remaining months. For Seward data are not available for March; for Chenega data are not available for March or April. Professional judgment was used to distribute demand among these months.

Figure 17
Passenger Demand Rates by Month



FORECASTS

The following sections present year 2020 forecasts of passenger and vehicle trip ends (trip ends are the sum of embarkations and disembarkations and, totaled for the region, equal two times the number of trips) for the Prince William Sound ports served by the various alternatives described in Table 13. Low, base and high forecasts are shown by month.

Appendix B presents graphs which show comparisons of the 2020 base vehicle trip forecasts by month with the monthly vehicle capacity provided by each Group 2 marine alternative.

2020 Forecasts: Alternative 1A: Existing Conditions

The travel demand estimates presented in the section *Alternative-Specific Forecasting: Methodology and Results* constitute the forecasts for Existing Conditions.

2020 Forecasts: Alternative 1B

Table 18
 Alternative 1B:
 Replace *Bartlett* with *Aurora*
 (34-Week Service)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Chenega						
Jan	4	4	5	2	2	2
Feb	4	4	5	2	2	2
Mar	4	4	5	1	2	2
Apr	4	4	5	1	2	2
May	16	17	20	6	6	7
June	16	17	20	6	6	7
July	23	24	29	8	9	11
Aug	23	24	29	8	9	11
Sep	9	9	11	3	4	4
Oct	4	4	5	1	2	2
Nov	4	4	5	1	2	2
Dec	4	4	5	2	2	2
Total	115	122	144	43	45	54
Cordova						
Jan	925	1,546	3,600	206	344	802
Feb	825	1,379	3,210	239	400	930
Mar	1,300	2,173	5,059	308	515	1,199
Apr	1,159	1,936	4,508	549	917	2,135
May	1,717	2,870	6,680	811	1,356	3,156
June	1,992	3,329	7,750	716	1,196	2,785
July	2,451	4,096	9,534	764	1,277	2,973
Aug	2,476	4,137	9,631	765	1,279	2,976
Sep	1,384	2,313	5,383	660	1,103	2,567
Oct	975	1,630	3,794	370	619	1,441
Nov	717	1,198	2,789	280	467	1,087
Dec	750	1,254	2,919	181	302	703
Total	16,671	27,862	64,857	5,849	9,775	22,755

Table 18
Alternative 1B
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Seward						
Jan	34	44	77	18	23	40
Feb	34	44	77	18	23	40
Mar	34	44	77	18	23	40
Apr	39	51	88	20	27	46
May	265	348	605	138	181	314
June	617	812	1,409	230	302	524
July	889	1,169	2,029	281	370	641
Aug	708	931	1,615	246	324	562
Sep	334	439	762	186	244	424
Oct	195	256	444	150	198	343
Nov	116	152	264	84	110	191
Dec	92	121	211	92	73	126
Total	3,354	4,411	7,656	1,480	1,898	3,294
Tatitlek						
Jan	31	33	39	7	8	9
Feb	15	16	19	4	4	5
Mar	15	16	19	4	4	5
Apr	24	26	30	6	6	7
May	36	39	46	9	9	11
June	12	13	15	3	3	4
July	7	7	8	2	2	2
Aug	7	7	8	2	2	2
Sep	7	7	8	2	2	2
Oct	7	7	8	2	2	2
Nov	7	7	8	2	2	2
Dec	46	49	58	11	12	14
Total	215	228	268	52	55	65

Table 18
Alternative 1B
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Valdez						
Jan	1,066	1,802	3,919	203	343	746
Feb	1,066	1,802	3,919	284	481	1,045
Mar	1,523	2,575	5,598	361	610	1,327
Apr	1,523	2,575	5,598	711	1,202	2,614
May	3,859	6,523	14,182	1,269	2,144	4,662
June	9,851	16,652	36,200	2,881	4,870	10,587
July	13,278	22,445	48,796	3,324	5,619	12,216
Aug	11,932	20,171	43,851	3,210	5,427	11,798
Sep	3,834	6,480	14,088	1,455	2,459	5,346
Oct	1,219	2,060	4,478	347	587	1,276
Nov	812	1,373	2,986	301	510	1,108
Dec	812	1,373	2,986	199	336	731
Total	50,776	85,833	186,599	14,546	24,589	53,457
Whittier						
Jan	0	0	0	0	0	0
Feb	0	0	0	0	0	0
Mar	0	0	0	0	0	0
Apr	0	0	0	0	0	0
May	3,375	6,186	13,734	1,777	3,257	7,231
June	9,430	17,286	38,374	3,407	6,244	13,863
July	12,508	22,926	50,896	3,992	7,317	16,243
Aug	11,297	20,706	45,968	4,001	7,334	16,282
Sep	3,097	5,677	12,603	1,603	2,938	6,523
Oct	0	0	0	0	0	0
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Total	39,707	72,782	161,575	14,780	27,091	60,142

2020 Forecasts: Alternative 1C

Table 19
 Alternative 1C:
 Replace *Bartlett* with *Aurora*
 (45-Week Service)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Cordova						
Jan	1,002	1,722	4,101	223	383	913
Feb	909	1,561	3,718	263	452	1,078
Mar	1,353	2,324	5,536	321	551	1,312
Apr	1,221	2,097	4,993	578	993	2,365
May	1,743	2,994	7,130	823	1,415	3,369
June	2,000	3,436	8,182	719	1,235	2,940
July	2,429	4,172	9,936	757	1,301	3,098
Aug	2,452	4,212	10,032	758	1,302	3,100
Sep	1,431	2,458	5,854	682	1,172	2,792
Oct	1,049	1,802	4,292	398	684	1,630
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Total	15,588	26,778	63,773	5,523	9,488	22,597
Tatitlek						
Jan	46	49	58	11	12	14
Feb	31	33	39	7	8	9
Mar	31	33	39	7	8	9
Apr	24	26	30	6	6	7
May	36	39	46	9	9	11
June	12	13	15	3	3	4
July	8	9	11	2	2	3
Aug	8	9	11	2	2	3
Sep	8	9	11	2	2	3
Oct	8	9	11	2	2	3
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Total	215	228	268	52	55	65

Table 19
Alternative 1C
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Valdez						
Jan	1,209	2,057	4,496	230	392	856
Feb	1,209	2,057	4,496	323	549	1,199
Mar	1,659	2,822	6,168	393	669	1,462
Apr	1,659	2,822	6,168	775	1,318	2,880
May	3,957	6,733	14,714	1,301	2,213	4,837
June	9,852	16,765	36,636	2,881	4,903	10,714
July	13,224	22,503	49,176	3,311	5,634	12,312
Aug	11,900	20,250	44,253	3,202	5,448	11,906
Sep	3,932	6,691	14,621	1,492	2,539	5,548
Oct	1,359	2,312	5,053	387	659	1,439
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Total	49,957	85,013	185,780	14,293	24,323	53,154
Whittier						
Jan	893	1,625	3,592	394	717	1,584
Feb	873	1,589	3,511	385	701	1,548
Mar	1,155	2,102	4,646	509	927	2,049
Apr	1,115	2,029	4,484	491	895	1,977
May	3,271	5,955	13,161	1,722	3,136	6,930
June	8,189	14,908	32,947	2,958	5,386	11,902
July	10,910	19,861	43,894	3,482	6,338	14,008
Aug	9,902	18,027	39,839	3,507	6,385	14,111
Sep	3,029	5,515	12,188	1,568	2,854	6,308
Oct	973	1,772	3,917	766	1,394	3,080
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Total	40,309	73,384	162,178	15,782	28,732	63,497

2020 Forecasts: Alternative 2A

Table 20
Alternative 2A:
Timed Transfer at Valdez
(Two New Vessels)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Cordova						
Jan	1,215	1,836	3,890	271	409	866
Feb	1,084	1,638	3,469	314	475	1,005
Mar	1,708	2,581	5,467	405	612	1,296
Apr	1,522	2,300	4,871	721	1,089	2,307
May	2,256	3,408	7,219	1,066	1,610	3,411
June	2,617	3,954	8,375	940	1,421	3,009
July	3,219	4,864	10,302	1,004	1,517	3,212
Aug	3,252	4,914	10,407	1,005	1,518	3,216
Sep	1,818	2,746	5,817	867	1,310	2,774
Oct	1,281	1,936	4,100	487	735	1,557
Nov	942	1,423	3,014	367	555	1,175
Dec	985	1,489	3,154	237	359	760
Total	21,899	33,089	70,083	7,683	11,609	24,589
Valdez						
Jan	1,268	2,004	4,120	241	381	784
Feb	1,268	2,004	4,120	338	535	1,099
Mar	1,811	2,863	5,886	429	679	1,395
Apr	1,811	2,863	5,886	846	1,337	2,748
May	4,587	7,252	14,910	1,508	2,384	4,902
June	11,710	18,511	38,060	3,425	5,414	11,131
July	15,784	24,952	51,302	3,952	6,247	12,844
Aug	14,185	22,423	46,103	3,816	6,033	12,404
Sep	4,557	7,204	14,812	1,729	2,734	5,621
Oct	1,449	2,290	4,708	413	652	1,341
Nov	966	1,527	3,139	358	566	1,165
Dec	966	1,527	3,139	237	374	769
Total	60,361	95,417	196,184	17,292	27,335	56,202

Table 20
 Alternative 2A
 (continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Whittier						
Jan	828	1,456	3,143	365	642	1,386
Feb	806	1,418	3,061	355	625	1,349
Mar	1,111	1,954	4,219	490	862	1,860
Apr	1,067	1,878	4,053	471	828	1,787
May	3,398	5,978	12,904	1,789	3,148	6,795
June	8,714	15,329	33,088	3,148	5,538	11,953
July	11,655	20,503	44,255	3,720	6,543	14,123
Aug	10,566	18,586	40,119	3,742	6,583	14,210
Sep	3,137	5,518	11,912	1,624	2,856	6,165
Oct	915	1,610	3,474	720	1,266	2,732
Nov	675	1,188	2,564	244	430	928
Dec	697	1,226	2,647	209	368	795
Total	43,570	76,645	165,439	16,877	29,689	64,084

2020 Forecasts: Alternative 2B

Table 21
Alternative 2B:
Dedicated Port Service by New High-Speed Vessel

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Cordova						
Jan	1,215	1,836	3,890	271	409	866
Feb	1,084	1,638	3,469	314	475	1,005
Mar	1,708	2,581	5,467	405	612	1,296
Apr	1,522	2,300	4,871	721	1,089	2,307
May	2,256	3,408	7,219	1,066	1,610	3,411
June	2,617	3,954	8,375	940	1,421	3,009
July	3,219	4,864	10,302	1,004	1,517	3,212
Aug	3,252	4,914	10,407	1,005	1,518	3,216
Sep	1,818	2,746	5,817	867	1,310	2,774
Oct	1,281	1,936	4,100	487	735	1,557
Nov	942	1,423	3,014	367	555	1,175
Dec	985	1,489	3,154	237	359	760
Total	21,899	33,089	70,083	7,683	11,609	24,589
Valdez						
Jan	1,268	2,004	4,120	241	381	784
Feb	1,268	2,004	4,120	338	535	1,099
Mar	1,811	2,863	5,886	429	679	1,395
Apr	1,811	2,863	5,886	846	1,337	2,748
May	4,587	7,252	14,910	1,508	2,384	4,902
June	11,710	18,511	38,060	3,425	5,414	11,131
July	15,784	24,952	51,302	3,952	6,247	12,844
Aug	14,185	22,423	46,103	3,816	6,033	12,404
Sep	4,557	7,204	14,812	1,729	2,734	5,621
Oct	1,449	2,290	4,708	413	652	1,341
Nov	966	1,527	3,139	358	566	1,165
Dec	966	1,527	3,139	237	374	769
Total	60,361	95,417	196,184	17,292	27,335	56,202

Table 21
 Alternative 2B
 (continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Whittier						
Jan	828	1,456	3,143	365	642	1,386
Feb	806	1,418	3,061	355	625	1,349
Mar	1,111	1,954	4,219	490	862	1,860
Apr	1,067	1,878	4,053	471	828	1,787
May	3,398	5,978	12,904	1,789	3,148	6,795
June	8,714	15,329	33,088	3,148	5,538	11,953
July	11,655	20,503	44,255	3,720	6,543	14,123
Aug	10,566	18,586	40,119	3,742	6,583	14,210
Sep	3,137	5,518	11,912	1,624	2,856	6,165
Oct	915	1,610	3,474	720	1,266	2,732
Nov	675	1,188	2,564	244	430	928
Dec	697	1,226	2,647	209	368	795
Total	43,570	76,645	165,439	16,877	29,689	64,084

2020 Forecasts: Alternative 2C

Table 22
Alternative 2C:
Loop Service by New High-Speed Vessel

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Cordova						
Jan	1,215	1,836	3,890	271	409	866
Feb	1,084	1,638	3,469	314	475	1,005
Mar	1,708	2,581	5,467	405	612	1,296
Apr	1,522	2,300	4,871	721	1,089	2,307
May	2,256	3,408	7,219	1,066	1,610	3,411
June	2,617	3,954	8,375	940	1,421	3,009
July	3,219	4,864	10,302	1,004	1,517	3,212
Aug	3,252	4,914	10,407	1,005	1,518	3,216
Sep	1,818	2,746	5,817	867	1,310	2,774
Oct	1,281	1,936	4,100	487	735	1,557
Nov	942	1,423	3,014	367	555	1,175
Dec	985	1,489	3,154	237	359	760
Total	21,899	33,089	70,083	7,683	11,609	24,589
Valdez						
Jan	1,122	1,858	3,974	213	354	756
Feb	1,122	1,858	3,974	299	496	1,060
Mar	1,602	2,654	5,677	380	629	1,346
Apr	1,602	2,654	5,677	748	1,239	2,651
May	4,059	6,723	14,381	1,334	2,210	4,728
June	10,361	17,162	36,710	3,030	5,019	10,736
July	13,966	23,133	49,483	3,496	5,791	12,388
Aug	12,550	20,789	44,469	3,377	5,593	11,964
Sep	4,032	6,679	14,287	1,530	2,534	5,421
Oct	1,282	2,123	4,541	365	605	1,294
Nov	854	1,415	3,028	317	525	1,123
Dec	854	1,415	3,028	209	347	742
Total	53,406	88,462	189,228	15,300	25,343	54,210

Table 22
Alternative 2C
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Whittier						
Jan	828	1,456	3,143	365	642	1,386
Feb	806	1,418	3,061	355	625	1,349
Mar	1,111	1,954	4,219	490	862	1,860
Apr	1,067	1,878	4,053	471	828	1,787
May	3,398	5,978	12,904	1,789	3,148	6,795
June	8,714	15,329	33,088	3,148	5,538	11,953
July	11,655	20,503	44,255	3,720	6,543	14,123
Aug	10,566	18,586	40,119	3,742	6,583	14,210
Sep	3,137	5,518	11,912	1,624	2,856	6,165
Oct	915	1,610	3,474	720	1,266	2,732
Nov	675	1,188	2,564	244	430	928
Dec	697	1,226	2,647	209	368	795
Total	43,570	76,645	165,439	16,877	29,689	64,084

2020 Forecasts: Alternative 2D

Table 23
Alternative 2D:
Dedicated Port Service by Two New Vessels

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Cordova						
Jan	1,215	1,836	3,890	271	409	866
Feb	1,084	1,638	3,469	314	475	1,005
Mar	1,708	2,581	5,467	405	612	1,296
Apr	1,522	2,300	4,871	721	1,089	2,307
May	2,256	3,408	7,219	1,066	1,610	3,411
June	2,617	3,954	8,375	940	1,421	3,009
July	3,219	4,864	10,302	1,004	1,517	3,212
Aug	3,252	4,914	10,407	1,005	1,518	3,216
Sep	1,818	2,746	5,817	867	1,310	2,774
Oct	1,281	1,936	4,100	487	735	1,557
Nov	942	1,423	3,014	367	555	1,175
Dec	985	1,489	3,154	237	359	760
Total	21,899	33,089	70,083	7,683	11,609	24,589
Valdez						
Jan	1,391	2,150	4,266	265	409	812
Feb	1,391	2,150	4,266	371	574	1,138
Mar	1,987	3,071	6,094	471	728	1,445
Apr	1,987	3,071	6,094	928	1,434	2,846
May	5,033	7,780	15,439	1,655	2,558	5,075
June	12,847	19,860	39,409	3,757	5,808	11,525
July	17,317	26,771	53,121	4,335	6,702	13,299
Aug	15,562	24,058	47,738	4,187	6,473	12,844
Sep	5,000	7,729	15,337	1,897	2,933	5,820
Oct	1,589	2,457	4,875	453	700	1,389
Nov	1,060	1,638	3,250	393	608	1,206
Dec	1,060	1,638	3,250	260	401	796
Total	66,223	102,373	203,139	18,971	29,328	58,195

Table 23
Alternative 2D
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Whittier						
Jan	845	1,515	3,242	373	668	1,429
Feb	823	1,476	3,157	363	651	1,392
Mar	1,135	2,034	4,351	500	897	1,918
Apr	1,090	1,954	4,180	481	862	1,843
May	3,471	6,221	13,309	1,828	3,276	7,008
June	8,900	15,952	34,126	3,215	5,763	12,328
July	11,903	21,335	45,644	3,799	6,809	14,567
Aug	10,791	19,341	41,378	3,822	6,851	14,656
Sep	3,204	5,743	12,286	1,658	2,972	6,359
Oct	934	1,675	3,583	735	1,317	2,818
Nov	690	1,236	2,645	249	447	957
Dec	712	1,276	2,730	214	383	820
Total	44,499	79,758	170,632	17,237	30,895	66,095

2020 Forecasts: Alternative 3A

Table 24
 Alternative 3A:
 Aurora or Bartlett Plus New High-Speed Vessel

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Chenega						
Jan	7	8	8	3	3	3
Feb	7	8	8	3	3	3
Mar	7	7	8	3	3	3
Apr	7	7	8	3	3	3
May	29	30	33	11	11	12
June	29	30	33	11	11	12
July	41	42	47	15	16	17
Aug	41	42	47	15	16	17
Sep	16	17	18	6	6	7
Oct	7	7	8	3	3	3
Nov	7	7	8	3	3	3
Dec	7	8	8	3	3	3
Total	206	213	236	76	79	88
Cordova						
Jan	1,214	1,835	3,888	270	409	866
Feb	1,083	1,637	3,468	314	474	1,005
Mar	1,706	2,579	5,464	404	611	1,295
Apr	1,520	2,298	4,869	720	1,088	2,306
May	2,253	3,405	7,216	1,064	1,609	3,409
June	2,614	3,951	8,372	939	1,420	3,008
July	3,215	4,860	10,298	1,003	1,515	3,211
Aug	3,248	4,910	10,403	1,004	1,517	3,215
Sep	1,815	2,744	5,815	866	1,309	2,773
Oct	1,279	1,934	4,098	486	735	1,556
Nov	940	1,422	3,012	367	554	1,175
Dec	984	1,488	3,153	237	358	760
Total	21,872	33,062	70,056	7,674	11,600	24,579

Table 24
Alternative 3A
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Valdez						
Jan	1,246	1,982	4,098	237	377	780
Feb	1,246	1,982	4,098	332	529	1,093
Mar	1,780	2,832	5,855	422	671	1,388
Apr	1,780	2,832	5,855	831	1,322	2,734
May	4,509	7,174	14,832	1,482	2,358	4,876
June	11,511	18,311	37,860	3,366	5,355	11,072
July	15,515	24,683	51,033	3,884	6,179	12,776
Aug	13,943	22,181	45,861	3,751	5,968	12,339
Sep	4,480	7,126	14,734	1,700	2,704	5,591
Oct	1,424	2,265	4,684	406	645	1,334
Nov	949	1,510	3,122	352	560	1,158
Dec	949	1,510	3,122	233	370	765
Total	59,333	94,389	195,155	16,997	27,040	55,908
Whittier						
Jan	845	1,515	3,235	373	668	1,426
Feb	823	1,476	3,150	363	651	1,389
Mar	1,135	2,034	4,341	500	897	1,914
Apr	1,090	1,954	4,171	481	862	1,839
May	3,471	6,221	13,279	1,828	3,276	6,992
June	8,900	15,952	34,049	3,215	5,763	12,300
July	11,903	21,335	45,541	3,799	6,809	14,534
Aug	10,791	19,341	41,285	3,822	6,851	14,623
Sep	3,204	5,743	12,258	1,658	2,972	6,344
Oct	934	1,675	3,575	735	1,317	2,812
Nov	690	1,236	2,639	249	447	954
Dec	712	1,276	2,724	214	383	818
Total	44,499	79,758	170,245	17,237	30,895	65,945

2020 Forecasts: Alternative 4A

Table 25
 Alternative 4A:
Tustumena Between Valdez and Seward

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Chenega						
Jan	4	4	5	2	2	2
Feb	4	4	5	2	2	2
Mar	4	4	5	1	2	2
Apr	4	4	5	1	2	2
May	16	17	20	6	6	7
June	16	17	20	6	6	7
July	23	24	29	8	9	11
Aug	23	24	29	8	9	11
Sep	9	9	11	3	4	4
Oct	4	4	5	1	2	2
Nov	4	4	5	1	2	2
Dec	4	4	5	2	2	2
Total	115	122	144	43	45	54
Cordova						
Jan	925	1,546	3,600	206	344	802
Feb	825	1,379	3,210	239	400	930
Mar	1,300	2,173	5,059	308	515	1,199
Apr	1,159	1,936	4,508	549	917	2,135
May	1,717	2,870	6,680	811	1,356	3,156
June	1,992	3,329	7,750	716	1,196	2,785
July	2,451	4,096	9,534	764	1,277	2,973
Aug	2,476	4,137	9,631	765	1,279	2,976
Sep	1,384	2,313	5,383	660	1,103	2,567
Oct	975	1,630	3,794	370	619	1,441
Nov	717	1,198	2,789	280	467	1,087
Dec	750	1,254	2,919	181	302	703
Total	16,671	27,862	64,857	5,849	9,775	22,755

Table 25
Alternative 4A
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Seward						
Jan	34	44	77	18	23	40
Feb	34	44	77	18	23	40
Mar	34	44	77	18	23	40
Apr	39	51	88	20	27	46
May	265	348	605	138	181	314
June	617	812	1,409	230	302	524
July	889	1,169	2,029	281	370	641
Aug	708	931	1,615	246	324	562
Sep	334	439	762	186	244	424
Oct	195	256	444	150	198	343
Nov	116	152	264	84	110	191
Dec	92	121	211	55	73	126
Total	3,354	4,411	7,656	1,443	1,898	3,294
Tatitlek						
Jan	31	33	39	7	8	9
Feb	15	16	19	4	4	5
Mar	15	16	19	4	4	5
Apr	24	26	30	6	6	7
May	36	39	46	9	9	11
June	12	13	15	3	3	4
July	7	7	8	2	2	2
Aug	7	7	8	2	2	2
Sep	7	7	8	2	2	2
Oct	7	7	8	2	2	2
Nov	7	7	8	2	2	2
Dec	46	49	58	11	12	14
Total	215	228	268	52	55	65

Table 25
Alternative 4A
(continued)

	Passenger Demand			Vehicle Demand		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Valdez						
Jan	1,066	1,802	3,919	203	343	746
Feb	1,066	1,802	3,919	284	481	1,045
Mar	1,523	2,575	5,598	361	610	1,327
Apr	1,523	2,575	5,598	711	1,202	2,614
May	3,859	6,523	14,182	1,269	2,144	4,662
June	9,851	16,652	36,200	2,881	4,870	10,587
July	13,278	22,445	48,796	3,324	5,619	12,216
Aug	11,932	20,171	43,851	3,210	5,427	11,798
Sep	3,834	6,480	14,088	1,455	2,459	5,346
Oct	1,219	2,060	4,478	347	587	1,276
Nov	812	1,373	2,986	301	510	1,108
Dec	812	1,373	2,986	199	336	731
Total	50,776	85,833	186,599	14,546	24,589	53,457
Whittier						
Jan	0	0	0	0	0	0
Feb	0	0	0	0	0	0
Mar	0	0	0	0	0	0
Apr	0	0	0	0	0	0
May	3,375	6,186	13,734	1,777	3,257	7,231
June	9,430	17,286	38,374	3,407	6,244	13,863
July	12,508	22,926	50,896	3,992	7,317	16,243
Aug	11,297	20,706	45,968	4,001	7,334	16,282
Sep	3,097	5,677	12,603	1,603	2,938	6,523
Oct	0	0	0	0	0	0
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Total	39,707	72,782	161,575	14,780	27,091	60,142

2020 Forecasts: Alternative 4B

Table 26
 Alternative 4B:
 Water Taxi Between Whittier and Chenega

	Passenger Demand			Vehicle Demand*		
	LOW	BASE	HIGH	LOW	BASE	HIGH
Chenega						
Jan	8	8	9	NA	NA	NA
Feb	8	8	9	NA	NA	NA
Mar	8	8	9	NA	NA	NA
Apr	8	8	9	NA	NA	NA
May	32	33	36	NA	NA	NA
June	32	33	36	NA	NA	NA
July	45	47	51	NA	NA	NA
Aug	45	47	51	NA	NA	NA
Sep	18	18	20	NA	NA	NA
Oct	8	8	9	NA	NA	NA
Nov	8	8	9	NA	NA	NA
Dec	8	8	9	NA	NA	NA
Total	228	235	258			

*Vehicle demand is not applicable to this alternative since the alternative as proposed would provide a passenger-only vessel.

APPENDIX A – PRINCE WILLIAM SOUND/COPPER RIVER AREA TOURISM GROWTH PROJECTIONS

INTRODUCTION

This report presents tourism growth projections for major communities within the Prince William Sound project area. Because of the many variables affecting tourism growth, as well as limitations in tourism data, low, moderate and high growth scenarios are presented. These projections are best seen as informed judgments about the consequences of three sets of explicit assumptions, rather than a direct attempt to “predict” the future.

Definition of “Tourism”

The projections aim to include all travel into the study area communities by people from outside the study area, including both Alaskan and out-of-state travelers. Also included is travel for all trip purposes - recreation, vacation/pleasure, visiting friends and relatives, and business. For example, the projections include Alaskans who go to Valdez to a conference and out-of-state travelers who go to Seward to take a day cruise or to Cordova to see shorebirds.

Organization of this Report

- Introduction (this section)
- Variations in Travel by Season
- Summary of Statewide Travel Trends
- Overview of Three Future Tourism Scenarios
- Projections by Community: Whittier, Seward, Cordova, Valdez

VARIATIONS IN TRAVEL BY SEASON

Projections are presented for total annual visitation. Decisions regarding transportation infrastructure, however, such as the size of a new ferry, will require focus on the summer season when most travel takes place. The table on the next page shows that during the May to September peak Alaska travel season, average out-of-state visits per month are 7 times greater than travel during the other months of the year. In the peak travel months of June, July and August, travel volumes are 10 times or greater the volumes of off-season months. For example, in 1996, persons traveling by highway into Alaska averaged 2244 per month in Nov, Dec, Jan and Feb, but rose to 26,884 in June and 28,975 in July. In 1996 visitors to the Portage/Begich-Boggs visitor center jumped from about 1,400 people monthly during the 5 winter months, to 30,000 in July.

While Alaska travel continues to concentrate during summer, travel businesses and travel organizations are doing all they can to increase activity in fall, winter and spring, with some success. Anchorage’s aggressive Convention and Visitor’s Bureau has attracted growing numbers of conference travelers in the “shoulder seasons” of March-early May and late September through November. Hotel occupancy in Anchorage during these months has steadily increased over the last 5 years.

Table 27
Seasonal Change in Out-of-State Visitor Travel to Alaska

Entry Mode	<i>Fall Winter</i> Oct 96-Apr 97		<i>Summer</i> May - Sept 1997		<i>Full Year</i> May 96-Sept 97 Number of Visitors
	Number of Visitors	% of full year visitors	Number of Visitors	% of full year visitors	
Domestic Air	202,900	28%	560,800	73%	736,700
Cruise Ship	1,500	.4%	392,100	99.6%	393,600
Highway	10,100	9%	100,300	91%	110,400
AMHS	3,200	14%	18,900	86%	22,100
Int'l Air	5,200	20%	21,000	80%	26,200
Other	7,600	22%	27,500	78%	35,100
Total	230,500	18%	1,120,600	83%	1,351,100
Avg. Visitors per Month	32,928		224,120		

Source - AVSP III Alaska Visitor Arrivals, Fall/Winter 1996/97, p v; AVSP III Alaska Visitor Arrivals, Summer 1997, page iii; Christopher Beck & Associates

STATEWIDE GROWTH TRENDS

Tourism growth in Prince William Sound is linked to statewide trends of tourism and recreation. Information on historic growth rates statewide, used in portions of the PWS projections, are presented in the tables below. Total annual growth has averaged about 6% a year since 1990; growth during the 5 month summer season (as shown on the table on the next page), has averaged 8% per year.

Table 28
Total Out-of-State Visitors to Alaska 1980-1997
(based on 12 month period, ending in September of the year indicated)

Year	Visitors	Growth over Previous Year
1980	500,000	
1985	725,000	85-89 avg. 4%/year
1989	808,600	
1990	880,000	
1991	925,300	5%
1992	900,000	-3%
1993	1,047,000	16%
1994	1,121,000	7%
1995	1,166,000	4%
1997	1,351,000	95-97: avg. 7.5%/year
1998		summer only: 6.5%

Source: Summer Arrivals 1997, Fall Winter Arrivals 1996-97 Alaska Visitor Statistics Program, State Division of Tourism; AVA Overview of the Visitor Industry, second edition, 1997. Based on 12 month season, ending in September of the year indicated.

Table 29
Summer Out-of-State Visitors by Entry Mode

Entry Mode	summer 1989	(% of '89 total)	Summer 1991	summer 1993	summer 1995	summer 1996	summer 1997	(% of '97 total)	Avg. Annual Change 89-97
Domestic Air	312,700	(51%)	386,300	443,600	508,300	547,900	560,800	(50%)	+7.6%
Int'l Air	18,400	(3%)	18,800	14,500	13,300	22,500	21,000	(2%)	+1.7
Cruise Ship	152,200	(25%)	194,000	247,000	283,500	336,500	392,100	(35%)	+12.6
AMHS	27,000	(4%)	29,600	29,100	27,000	24,000	18,900	(2%)	-3.3%
Highway*	82,600	(14%)	83,100	91,900	108,100	103,400	100,200	(9%)	+2.5%
Other	15,800	(3%)	14,700	20,100	26,900	30,000	27,500	(2%)	+7.2%
Total	608,700		726,500	846,200	967,100	1,064,300	1,120,500		+7.9%
% Increase			5.3%	8.2%	3.8%	10.1%	5.3%		

Source: State of Alaska, Dept of Tourism, AVSP III - Summer 1997; Alaska Visitors Assoc. - A Comprehensive Overview of Alaska's Visitor Industry, 1997; CBA. Notes: . Summer 1998 estimated to have grown 6.5% - Eberhardt & McDowell estimate *AMHS use affected by Canadian blockade. ** Other refers to domestic arrivals at locations other than the 4 sampling points, private vessels & aircraft.

Travel Trends by Entry Mode⁵

Domestic Air – Domestic air (along with cruise) are the two access modes that have experienced sustained growth in the 90's, averaging nearly 8% annually. Domestic air accounts for half of travelers coming to Alaska. Growth in domestic air has been driven by improved service (new companies entering market, improved frequency of service, lower fares, bargain fares), increasing demand for shorter trips, and the air link to the rapidly growing cruise market (over half of all cruise trips have one air leg). Domestic air is estimated to have continued it's steady growth in 1998.

Cruise Ship Tourism – Cruise visitation is the fastest growing component of the market, increasing from 25% to 35% of all visitors over the last decade (up to 45% of all vacation-pleasure travelers). Between 1990 and 1997 Alaska cruise boat capacity grew from 16,222 to 31,202 berths, and number of passengers increased by nearly 13% annually. Between 1996 and 97, five new cruise boats with a combined capacity of 7,290 passengers began operations in Alaska, and the number of passengers coming to Alaska increased by 16%. Total cruise capacity grew an additional 8-10% in 1998. Increases are driven by sustained high profile marketing, growing interest in cruising by the aging baby boom, increasing investment in capacity by large cruise companies, crowding in established cruise ports and reduced prices.

Cruise ship passengers increased from 522,000 in 1997 to 548,000 in 1998, an increase of 5%, well below the dramatic increases of previous years. Early indications for 1999 suggest that cruise passengers will again grow, but at this less rapid rate.

⁵ Summary in formation based on Alaska Visitors Statistics Program, McDowell Presentation to the AVA 1988 Annual Conference, and CBA interviews with a variety of tourism industry sources.

International Air – International air has been stable to declining in the last decade as changes in refueling needs and politics have reduced the need for international stops in Anchorage. More recent declines may reflect reduction in travel to the Russian Far East, and the problems in economies of Asian countries. International air accounts for 2% of all out-of-state visitors, down from 3% in 1989.

Alaska Marine Highway – Ferry travel has declined by half as a percentage of all visitors, from 4% to 2%. This drop over the last decade is due to improved service and fares by commercial air carriers, and lack of equivalent changes to the Marine Highway system. In summer 1998, however, there was evidence that ferry use was on the upswing. One piece of anecdotal evidence supporting this conclusion was a report from the AMHS that passenger spending was up in the first 6 months of the year by \$600,000 over the previous year. The State Division of Tourism believes that much of this increase was due to improved marketing focused on highway and ferry markets.

Highway (“Rubber Tire”) Visitors – The percentage of travelers coming to Alaska by car is small (14%). As a percentage of all entry modes. Highway visits grew during the first half of the 90’s, peaked in 1995, and declined in 1996 and 97. Possible reasons for this decline include often mediocre roadside services within Alaska relative to Canada and other competing destinations, and the national trend towards shorter trips. In summer 1998, highway crossings at the Alaska Canada border increased over 1997. Possible reasons for this uptick include a recent marketing initiative targeting prospective highway users. Meanwhile in-state motorhome and auto rental companies - who rent vehicles to visitors who fly in and then explore the state’s highway system - continue to grow rapidly.

OVERVIEW OF THREE FUTURE TOURISM SCENARIOS

The three scenarios below give a general framework for the assumptions driving growth projections in individual communities. Projections for each community are developed within this framework, but build from each community’s unique circumstances. For example, the growth scenarios for Whittier all include completion of the Whittier road, with a resulting, immediate increase in visitation. Because of linkages between communities, certain scenarios are mutually exclusive. For example, the high growth scenario for Whittier presumes 1/2 of existing Seward cruise passengers shift to Whittier; Seward’s high scenario presumes that only 10% of cruise passengers shift to Whittier.

Low Growth

This scenario presumes that tourism will grow statewide and within the study area at an average of 1-2% annually, a much less rapid rate than what took place earlier in the decade. Possible reasons for this slower growth scenario include:

- slowdowns in economic growth in Alaska, the lower 48 and globally, leading to reductions in travel from out-of-state visitors and Alaskans
- continued changes in national travel trends, such as the shift towards vacations closer to home and of shorter duration, that work against travel to Alaska
- stable state population
- continued improvements to competing destinations

- few changes in tourism “infrastructure”, such as new attractions in communities, new access, new accommodations, other than those currently near or under construction, e.g. the Whittier road, handful of trail projects
- declines in the relative quality of Alaska attractions, for example due to crowding
- continued reductions in statewide marketing

Medium Growth

This scenario presumes that tourism will continue to grow statewide at a pace between the low and high growth scenarios, an average of 3-4% annually⁶. This is a pace of growth similar to what occurred in Alaska during the last half of the 1980’s, when annual growth averaged 4%. This scenario assumes that economic and population growth and improvements to tourism infrastructure in the study area (attractions, access, marketing) are midway between the high and low scenarios.

High Growth

This scenario presumes that tourism will continue to grow at a pace near the rapid growth experienced by Alaska during much of the 1990’s, between 6-8% annually statewide². Assumptions of this scenario include:

- sustained economic growth in Alaska and the world
- steady population growth in Alaska
- expansion of statewide and regional cooperative marketing programs

A key part of this scenario are assumptions about the development of new/improved tourism infrastructure, for example:

- major new attractions in study area communities, such as natural or cultural history centers, chairlifts/trams; commensurate increases in accommodations
- new overnight and day use destinations outside of communities, such as lodges on Native and public land in PWS
- improved ferry access within PWS, creating quick convenient daily service linking Whittier, Valdez and Cordova.
- steady growth in visitors to the Copper River Basin and Wrangell St. Elias National Park (from current visitation of approximately 35,000 people per year to 100,000 to 150,000 per year. Denali National Park - 335,000 annual visitors.)
- completion of a tourism plan as part of the USFS Chugach Plan revision, so that the Chugach Forest/PWS area can accommodate substantial increases in tourism in some areas, without significantly disrupting the area’s natural attractions (wildlife, scenery, sense of wilderness) and without displacing wilderness-oriented commercial and private users.

⁶ While overall US travel for pleasure was increasing at a brisk 4% annually, Alaska was averaging a remarkable 8% annual rate, recently adding as many as 100,000 new out-of-state visitors each year. For some categories of tourism growth, in the moderate and high growth scenarios, the rate of annual increase is at the lower end of this range, as a simple way of capturing normal tourism growth trajectories, which tend to fall as total number of visitors becomes larger. Use of a single lower rate is a simple way of approximating this more complex pattern, where initial rates would be higher (e.g. 8%) and gradually level off (e.g. to 5%).

WHITTIER

Tourism Profile

Whittier is the gateway to western Prince William Sound. Located 47 road plus 12 rail miles from Anchorage, Whittier is the most direct access point to saltwater boating, sightseeing, kayaking and fishing for the Anchorage/Mat-Su Borough area. During World War II Whittier was chosen as a staging area for moving troops and supplies into Anchorage⁷. The military built the infrastructure that defines Whittier and few visitors go there for the town's built environment. Whittier's most important tourism facility is its boat harbor, with docking areas for day cruise and charter boats, the state ferry MV *Bartlett*, boat launching facilities, and 332 small boat slips filled with vessels owned mostly by Anchorage residents. Over 800 people are on the waiting list to get a slip in the harbor. In the late 1980s Whittier was an important embarkation/disembarkation point for large cruise ships. In the early 1990s the cruise ships moved their operations from Whittier to Seward, due to concerns regarding taxation and problems related to the logistics of the rail/bus access system.

Whittier is currently linked to the road system by way of a 30 minute rail ride through two tunnels from Portage. Construction is now underway to widen the tunnels to create a road link between Whittier and the Seward Highway, to be opened in 2000. This road will be one way, and charge a toll. According to the project EIS, over time the road will lead visitor numbers to jump dramatically, to as high as 1.7 million visits each year. Cruise ship operations, day tour operators, local businesses, the City of Whittier and the Alaska Railroad are working to be ready for the inevitable change as the town becomes linked to the road system and tourism opportunities sharply increase. It is anticipated that once the road is complete Whittier will become the number one gateway for visitors to Prince William Sound, and a major cruise boat destination.

Attractions/Tours

In town attractions are very limited. The Whittier Visitor Center is located in a railroad car near the boat harbor; there is a one-room museum on the ground floor of Begich Towers and Log Cabin Gifts has a live reindeer. Hiking trails lead from town to the west back to Portage, and a nearly completed trail goes east to Shotgun Cove. A collection of small gift stores, restaurants, espresso shops and guide outfitters has grown up over the last 5 years at the harbor's edge.

Out-of town tours and excursions include popular sightseeing day cruises (including Major Marine, Phillips 26 Glacier), a daily scenic tour between Whittier and Valdez (Stan Stephens Cruises) & approximately a dozen day fishing charter boats. Whittier is an increasingly popular sea kayaking center, with several companies renting kayaks, and three companies that specialize in kayak drop off/pick up services. Tours that pass through or focus on Whittier include a day trip to the harbor from Anchorage⁸, over a dozen companies offering guided kayak tours in the western sound; and a handful of overnight small cruise boats (from 6 to 100 passenger boats) offering scheduled and custom tours. The USFS operates 6 wilderness public use cabins within a day boat trip from Whittier.

⁷ Whittier receives an annual average of 174 inches of precipitation. One of Whittier's advantages as a military port is its cloudy, rainy weather, which, coupled with mountainous terrain, makes air raids difficult.

⁸ The AK Railroad's Turnagain Arm Railtour from May to September featuring "breathtaking scenery that can only be seen by rail". \$49.00 per person, round trip. Departs from Anchorage for Whittier with same day return.

Accommodations/Restaurants

Rooms and suites are available in the Begich Towers and at the Anchor Inn. There are at least two bed and breakfasts as well as cabin and boat rentals. A camper park offers spaces for self contained RV's and tents for \$5 a night. There are two restaurants and two bars.

Events

Annual events include the Three Headed Fish Derby, and a 4th of July celebration. In the past, the PWS Tourism Coalition has sponsored the Prince William Sound Regatta in early May.

Tourism Projects – Under Construction/Under Discussion:

- Whittier Road - (see description above)
- New cruise ship dock/upgrade to existing railroad dock (project under discussion)
- Planned new boat mooring/storage facilities:
 - Additional 189 small boat slips
 - A dozen 80-100 foot slips to accommodate large tour boat needs
 - Dry stacking storage facility for up to 300 boats
- The State's new ferry, the 500 passenger M/V *Kennicott* will begin irregular service to Whittier in summer 98.
- Proposed RV Park
- Shotgun Cove Development – Chugach Corporation owns land in this area, and has investigated development including a cruise ship landing area, additional small boat dock, accommodations, and condominiums. The project is currently on hold, largely due to the high cost and environmental issues associated with access road from Whittier to Shotgun.
- Private Cruise Boat/Day Boat/Parking project – a group of private investors is working with the City of Whittier to gain a lease and city approvals to develop facilities for small boat storage (500 vessels, 300 in dry stack building, 200 in outside slips), plus docking space for 6-8 excursion vessels, plus a parking lot for 500 vehicles. This facility would be located immediately west the existing small boat harbor. The project sponsors hope to have the project complete when the Whittier Road opens in 2000.
- State Division of Parks Projects – State Parks has management authority over 14 State Marine Parks in the Prince William Sound area. State Parks is spending the last of a one-time capital improvements fund to develop new recreation facilities in the western sound. Parks strategy is to “harden” regularly used sites to help reduce impacts on fragile ground and improve the recreation experience. Most of these projects are located within a day's boat ride of Whittier. Projects include:
 - Walking trail to Whittier Overlook platform (completed in 97)
 - Walking trail to Shotgun Cove and Blackstone Bay overlook (to be completed in 98)
 - Tent platforms, bear-proof lockers, and a latrine at Shotgun Cove, Squirrel Cove, Emerald Cove, Surprise Cove, and South Esther Island; all are popular, heavily used destinations for kayakers and boaters a day or two out of Whittier.

- Contact/information person to be stationed at Decision Point; trail between Squirrel Cove and Decision Point (improves access to scarce camping areas).
- New interpretive information, and perhaps a new ranger in Whittier (and Valdez)
- Mooring Buoys – USFS has recently eliminated mooring buoys at several sites around PWS and Resurrection Bay, due to liability issues. State Parks may replace and maintain several of these buoys.

Number of Visitors

No comprehensive data is available on total visits to Whittier. The best single indicator of total visitation are records of annual railroad passengers, which suggest that the total number of resident and non-resident “tourists” traveling to Whittier each year is about 100,000 (194,000 round way trips on the railroad, or 95,000 travelers). Brad Phillips, one day cruise operator, estimates that Whittier receives as many as 200,000 annual visitors.

Out-of-State Visitors

As measured by the Alaska Visitor Statistics Program, out-of-state summer vacation pleasure visitors to Whittier declined from 86,800 visitors in 1989, to 83,600 visitors in summer 1993. This decline occurred after several cross gulf cruise ship companies shifted their operations from Whittier to Seward (until 1992, more than half the annual cruise boats coming to Southcentral AK ended or began their trips in Whittier.) The State has not updated visitor information to individual communities since 1993. If the percentage of total out-of-state visitors who traveled to Whittier from Oct 1992-Sept 1993 has remained constant (5% - adjusted for relocation of 17 cruise boats that still docked in Whittier in 1993), for the year ending in Sept 1997, Whittier would have been visited by about 70,000 non-resident tourists. (.05 x 1.35 million total visitors).

Whittier-Portage Rail Shuttle Traffic Volumes

The Portage-Whittier Shuttle offers a 35-minute ride from Portage to Whittier. The shuttle carries double-decker gallery passenger coaches, as well as buses, recreational vehicles, boats on trailers, and automobiles. The shuttle offers daily service from May 3- September 21, with several trips per day. As the figure below shows, numbers of vehicles on the shuttle has grown steadily, increasing approximately 10,000 annual vehicles since 1979. Passengers grew steadily until the mid 1980's, and since that time have fluctuated between 143-166,000. According to AK railroad staff, the system typically operates well below capacity. The most intense use occurs where weekend peaks overlap with the coming or going of the ferry.

Average monthly passenger and vehicle loads on the Whittier shuttle drops dramatically with the changing seasons. In 1994, for example, average monthly ridership May to September was over 25,000 people; between October and April this fell to less than 1000 per month.

Table 30
Alaska Railroad Annual Traffic – Portage–Whittier
(1 Way Trips – round trip passengers counted twice)

Year	Passengers	Vehicles	Year	Passengers	Vehicles
1979	84,730	16,309	1990	177,279	27,650
1981	90,150	17,217	1991	192,875	29,819
1983	115,834	19,156	1992	191,747	18,454
1985	147,559	21,992	1993	187,267	24,454
1987	135,193	23,186	1994	171,872	26,431
1989	143,277	23,371	1995	188,058	25,362
			1996	194,997	28,070

Source: 1979-1991: Whittier Access Improvements - Economic Assessment, Northern Economics Dec 1993. 1993-1996: Alaska Railroad, Jan 1998. Passenger totals do not include cruise passengers carried on charter trains. Chartered train passengers exceeded 50,000 in 1992, but are have fallen to very small numbers (< 1000) since large cruise boats quit coming to Whittier. Passenger totals include one person per vehicle. Actual occupancy of vehicles is likely at least 1.3 times higher.

M/V Bartlett – Passengers to and from Whittier

The Alaska Railroad, via the Whittier Shuttle provides connections with the Alaska Marine Highway ferry to Valdez and Cordova. Figures below show summer season ferry use in 1997 and 1998. Use fell slightly, an average of approximately 5%, between 97 and 98. Ferry use grew rapidly until 1992; since then use has been stable or slightly declining.

Table 31
M/V Bartlett – Passenger & Vehicle Embarking/Disembarking at Whittier Summer 1997–98

MONTH	1997 PASSENGERS		1998 PASSENGERS	
	EMBARKING	DISEMBARKING	EMBARKING	DISEMBARKING
MAY	862	778	959	764
JUNE	2,385	1,921	2,389	1,432
JULY	3,222	2,990	2,978	2,920
AUGUST	2,625	2,861	2,488	2,855
SEPTEMBER	543	842	579	720
TOTAL	9,637	9,392	9,393	8,691

Source: AMHS

MONTH	1997 VEHICLES		1998 VEHICLES	
	EMBARKING	DISEMBARKING	EMBARKING	DISEMBARKING
MAY	268	225	317	236
JUNE	641	594	613	663
JULY	752	761	748	726
AUGUST	690	738	648	766
SEPTEMBER	197	261	161	252
TOTALS	2,548	2,579	2487	2643

Kayaking in Western Prince William Sound – Alaska Pacific University

Sea kayaking is a small but rapidly growing component of tourism in Prince William Sound. Almost all the kayaking in western PWS originates in Whittier, so information on this topic is included in this section. Hard data on kayaking is very limited. People familiar with the area, such as operators with the National Outdoor Leadership School, report steady increases in use. This is supported by the growing number of guide services operating out of Whittier serving kayakers. One of the few sources of quantified kayaking information is collected by the Environmental Science/Outdoor Studies Program at APU. Adjusted for a source of data missing in 1996 which typically would add 1000 user days, these figures show an increase of approximately 1000 user days between 1993 and 1996.

Table 32
Kayakers – Western Prince William Sound

Type of Operator	1993	1994	1995	1996
Guide Outfitter	2713	2835	2808	2501
Charter Service	948	1490	1535	1294
Total	5654	6319	6338	5791*

Source: Alaska Pacific University/Paul Twardock; * 1996 data does not include on data source that accounts for approximately 1000 user days. If this is added in, the 1996 total use number would be approximately 4,700. Data misses users who do not use either guide outfitters or charter service.

Another way of documenting increased use is by tracking changes in businesses catering to the kayak market. This is done below:

Type of Business Based in Whittier/Operating in Western PWS	Numbers in 1990 (estimate)	Numbers in 1998
Commercial kayak guide companies	3	14
Pick up/drop off services (boats)	1	3
Kayak rental services (in Whittier)	1	2

Source: CBA, NOLS estimates

Day Sightseeing Tour Boats

Three large companies offer summer day cruises out of Whittier. Records of increasing boat capacity of Phillips 26-Glacier Cruise give an indication of the steady growth in day tour passengers. Between 1987 and 1992 Phillips carried passengers in the 165 passenger Klondike. In 1993, capacity increased to 275 people on the new Klondike. In 1998, the day tour company had capacity for 300-315 people on two boats (one carrying 165, a second 135 up to perhaps 149). This excludes outside seating. In 1999, Phillips Cruises will operate with a new craft, the Klondike Express, with capacity of 420 people. Phillips is projecting the company will be carrying 40,000 passengers annually by 2000 - with the option to grow further by running the boat twice/day. (*telephone conversation with Barrie Swanberg of Phillips Tours, March 1998*). In 1999, two large, new operators plan to begin daily scenic boat tours out of Whittier.

Cruise Ships

Whittier was an established cruise ship destination through the 1980's. More recently no larger cruise ships have operated out of Whittier. With the opening of the Whittier Road, Whittier may

once again be an embarkation/disembarkation point for larger cruise boats. Small cruise ships are increasing their operations in PWS. Alaska Sightseeing Cruise/West successfully operated two small ships (the 52 and 78 passengers) beginning in summer 1998. Other established small cruise companies are considering expanding into PWS. Several small custom cruises (less than 20 passengers) currently operate out of Whittier.

Forest Service Visitor Information

Use of the 6 public use cabins operated by the USFS in the Whittier area is up 8%, from 621 to 673 paid nights, between 1997 and 1998. USFS estimates 2223 "cabin nights" in 1998, based on multiplying average party size by paid nights. Cabin nights exceeds users due to parties staying multiple days.

Sportfishing

Mirroring statewide and regional trends, sportfishing participation in the Whittier area increased in 1997. In 1996 there were 4,677 anglers in the Passage Canal and the Esther Island area; in 1997 there were 6,541. ADF&G statistics show the angler days of effort from 1983 to 1994 fluctuated, but have averaged 13% annual growth. Angler days in Whittier area freshwater fisheries declined significantly over that period. (Sources: Hoffman, Andrew 1996. *Area Management Report for Recreational Fisheries on the Central Gulf Management Area, 1995*. ADF&G, Fishery Management Report No 96-4, Anchorage. Howe, A.L., et al. *Harvest, Catch and Participation in Alaska Sport Fisheries During 1996*. Alaska Department of Fish and Game, Fishery Data Series No. 97-29, Anchorage. Howe, A.L., et al. *Harvest, Catch and Participation in Alaska Sport Fisheries During 1997*. Alaska Department of Fish and Game Fishery Data Series No. 98-25.)

Table 33
Summary of Existing Use Information (Whittier)

<i>Category/Information Source</i>	<i>Estimated Number of Visitors - 1998</i>
Estimated Total Visitors - resident, non-resident	120,000
Alaska Visitor Statistics Program	Decline in out-of-state, summer visitors from 86,800 in 1989, to 83,600 visitors in summer 1993, estimated 110,00 in 1997.
Out of State <u>Summer</u> visitors	
Rail passengers (one way)	194,000 (in 1997) <i>overall trend</i> - stable
AMHS Total Embarking & Disembarking Passengers (residents & visitors)	1998: 36,000 passengers <i>overall trend</i> - rapid growth from mid 80's to 1992, thereafter, stable to slightly declining (due to summer capacity limitations)
Large Cruise Boat (over 200 passengers)	None <i>overall trend</i> - no boats currently scheduled to stop in Whittier in 1999. Road opening may change situation.
Small Cruise Boat	Approximately 2000 (same as Cordova) <i>overall trend</i> - recently developed business in PWS, established in last several years.
Day Sightseeing Passengers	50,000? <i>overall trend</i> - steady increase, two new companies beginning operations in summer 99.
Sportfishing	6571 anglers in 1997, est. increase 13% to 7425 in 1998 <i>overall trend</i> - steady, strong growth
USFS cabin/recreational use	772 cabin nights rented <i>overall trend</i> - steady growth, limited by constrained capacity

Whittier Projections Summary

See the section *Overview of Three Future Tourism Scenarios* in this Appendix for information on general background to the assumptions behind the three growth scenarios. Details specific to Whittier are listed below.

LOW – completion of the Whittier Road, minimal improvements in tourism facilities and services in Whittier.

MODERATE – completion of the Whittier Road, improvements in Whittier tourism infrastructure, including major improvements to cruise ship docking facilities, leading to relocation of 1/4 of cross-gulf cruise ships from Seward.

HIGH – completion of the Whittier Road, large-scale improvements to tourism infrastructure within Whittier including major improvements to cruise ship docking facilities, leading to relocation of 1/2 of cross-gulf cruise ships from Seward. Also assumes new tourism facilities outside of Whittier, such as lodges, day boat facilities, at locations such as Shotgun Cove, Esther Island, and on property held by Chenega.

Table 34
Whittier Annual Visitors
Past, Current Year (base case), Assumptions for Projections

Primary Access Mode	1990	1998 base case	LOW	MODERATE	HIGH
Large Cruise Ships (disembark/embark passengers)	75,000 (est.)	0	10% of 240,000 cross-gulf cruise pax relocate to Whittier from Seward; thereafter 2% annual growth	1/4 of 240,000 cross-gulf cruise pax relocate to Whittier from Seward; thereafter 4% annual growth	1/2 of 240,000 cross-gulf cruise pax relocate to Whittier from Seward; thereafter 8% annual growth
Small Cruise Ships (disembarking round-trip pax)	approx. 100	2,000	growth at 5% annually	growth at 15% annually	growth at 35% annually for 10 years, dropping to 15% in year 11
Ferry (disembarking passengers)	9,500	18,000	initial 10,000 increase, 1.5% annual growth thereafter	initial 20,000 increase, 3% annual growth thereafter	initial 30,000 increase, 6% annual growth thereafter
Other (highway, air, and rail)	45,000	130,000	600,000 first year road opens; falling to 400,000 in yr. 2, 1.5% annual growth thereafter	680,000 first year road opens; 3% annual growth thereafter	760,000 first year road opens; 4.5% annual growth thereafter
Totals	130,000	130,000			

Notes on Assumptions

Large Cruise Ship – Many have speculated about how the opening of the Whittier Road will change cruise ship stops in Whittier and Seward. Variables affecting this decision include the comparative quality of docks and associated loading facilities, the ease of moving passengers

from dockside to and from Anchorage, fees assessed, amenities and attractions of the host community, relationship to on-shore cruise line facilities such as Princess' Cruises Kenai Princess Lodge, and impacts on the character and quality of the cruise experience as judged by passengers and cruise line companies. An additional variable is the strategy of the Alaska Railroad, which owns land and docks in both locations and obviously will seek to maximize profit and efficient movement of freight and passengers.

In light of these many uncertainties, these projections pick three plausible base case scenarios: *low case* – 10% of current cross-gulf travel shifts from Seward to Whittier; *moderate case* - 1/4 shift, *high case* – 1/2 shift. These estimates are based on historic use of Whittier by cruise ships, where, in the early 90's, two thirds of all cruise ships coming to SC Alaska embarked/disembarked in Whittier (in 1991 there were 62 ships to Whittier, 31 ships to Seward). Also considered were the conclusions presented in the Whittier Road EIS (Northern Economics, 1993) and studies of the markets for the Seward SeaLife Center (Fox Practical Marketing, 1994) which concluded that 1/3 to 1/2 of cruise ships would shift to Whittier once the new road opened. All three of these scenarios assume necessary planning and physical improvements have been made to meet needs of cruiseline companies.

Annual growth after the adjustments between communities are at the higher end of the three growth rates set out in the section *Overview of Three Future Tourism Scenarios* in this Appendix (2%, 4%, 8%). These higher rates reflect the fact that the cruise lines have grown at an average of over 12% annually for last 10 years, and are well positioned in their demographics, products and resources for continued growth.

Small Cruise Ship – Small ship overnight cruising in PWS has a short history, and consequently predictions about the future are uncertain⁹. Small overnight cruise ships operating in PWS are currently limited to two ships (carrying approximately 60 passengers) and a handful of ships carrying 4–12 passengers. These ships make roughly two round trip journeys per week through the Sound. As was done for larger cruise ships, these scenarios assume growth as a steady percentage of existing use, recognizing that in reality growth occurs in ship-sized increments.

Low Scenario – Growth at 5% annually, comparable to the small cruise industry adding one new 12-passenger ship every three years (In one year, a 12 person boat, making two trips per week, over 12 week season, equates to about 300 passengers.) A similar growth rate could result from existing cruise operators working at higher occupancies.

Moderate Scenario – Growth at 15% annually, comparable to the small cruise industry adding one new 12-passenger ship each year, which equates to about 300 passengers (12 person boat, two trips per week, 12 week season)

High Scenario – Growth at 35% annually for 10 years, then dropping to 15%. This growth rate is comparable (during the first 10 years) to the small cruise industry adding a new 60-passenger ships every two years. (In one year, a 60 person boat, making two trips per week, over a 12 week season, equates to 1440 passengers).

⁹ Small-small boat cruising has been taking place in the Sound for many years. What is new are the 50-70 person sized boats now in their second year of operations in the area. This size of boat is quite successful in Southeast Alaska. A number of companies in addition to those currently operating are considering entering the PWS market.

Ferry – Projecting ferry demand is challenging because past and current use of the existing ferry system offers little indication of likely future demand. One reason is that “supply side” constraints - chiefly capacity to carry vehicles - puts a ceiling on current use. In 1997, for example, the *Bartlett’s* vehicles-to-capacity ratio on the Valdez-Whittier run was 86% east to west, and 79% west to east (1997 AMHS Traffic Volume Report p 71). Based on this high yearly vehicles-carried-to-capacity ratio it is likely the ferry ran close vehicle capacity for the summer months. Passengers-to-capacity ratio for the year averaged 51%, below vehicle capacity ratio but still quite high for a full year ratio (for comparison, Sitka-Juneau ratio was 66.7%) Constraints on access to Whittier further limit use. The second problem with using past use to project future demand is that, in the future, the PWS ferry system could be very different from today’s system, with faster boats, more convenient day boats linking communities, and good prices.

The three future growth scenarios use a combination of supply and demand considerations, recognizing that the actual amount of use will most likely be controlled by the summer time ship capacity. All three projections assume completion of the Whittier road. This effects demand for ferry service in three main ways: increases annual visitors to Whittier by a factor of 5 to 10 - exposing the attractions of the Sound and ferry to a much larger audience, considerably simplifies the process of using the ferry, and makes using the ferry slightly more affordable by reducing or eliminating the present tunnel fare (Northern Economics, 1993).

The basis for thinking about the demand-side of the projections is a “comparable towns model.” This is an admittedly subjective attempt to estimate the rough magnitude of latent demand for tourist travel to Valdez and Cordova, based on assumptions about the level of visitation to communities with comparable attractions. The goal of this approach is to allow the question to be asked, “given the differences in time/cost to travel by ferry from Anchorage to Valdez vs. competing destinations, the differences in attractions, and removal of ferry capacity constraints, how might the numbers of visitors compare?” For reference, the table below shows level of visits to comparable Southcentral Alaska communities.

Table 35
Bases for Tourism Estimation Methodology

Community	Attraction Rating 1 high - 5 low	Driving Time from Anchorage	Access Time by Ferry from Anchor- age	Discretionary (Non Cruise) Annual Vis- its
Homer	2	4-5 hrs	NA	200,000
Seward	2	2 hrs	NA	250,000
Valdez	3	5-7 hrs	7 hrs	80,000
Cordova	3	no road	12 hrs	<10,000

Reminder: current Whittier base case is 18,000 embark, 18,000 disembark, in a community with roughly 150,000 annual visitors (about 1 in 10 are riding the ferry), visitors will soon jump to 500,000 plus per year.

Low Scenario – Character of service continues more or less as currently available, with some increase in capacity. (e.g. exchange of *Aurora* for *Bartlett*), leading to one time jump of 10,000 tourist passengers (approximately 40 % over existing base case), 1.5% growth annual thereafter.

Moderate Scenario – Service improves, capacity increases (bigger, faster boat and/or multiple trips per day of smaller boat). Assume one time jump of 20,000 tourist passengers (100 over existing base case %), 3% growth annual thereafter.

High Scenario – Service substantially improves, capacity increases (bigger, faster boat and/or multiple trips per day of smaller boat). Attractions in Valdez and Cordova increase, ferry system provides convenient day boat service, option to cross Sound by ferry becomes a convenient, moderate-priced way for state residents and visitors to visit two interesting coastal communities, and enjoy their attractions. Assume one time jump of 30,000 tourist passengers (200% over existing base case), 6% growth annual thereafter.

Other (Rail/Road/Air) – This category covers those travelers who come into Whittier by rail today, and by road or rail in the future. This includes visitors coming just to see Whittier, as well as those who will go fishing, kayaking, take a day cruise or engage in other recreational pursuits. Growth scenarios in this category are dominated by the consequences of the completion of the Whittier Road.

Projections for the first year following the opening of the road rely on a report by Northern Economics, *Whittier Access Improvements – Economic Assessment*, completed in 1993 as part of the Whittier Road EIS.

Low Scenario – The new road attracts 600,000 visitors in the first year¹⁰. After the first wave visitation, year two drops to 400,000, with 1.5% annual growth thereafter.

*Moderate Scenario*¹ – The new road attracts 680,000 visitors in the first year, with 3% average annual growth thereafter.

*High Growth*¹ – The new road attracts 760,000 visitors in the first year of completion, with 5% annual growth thereafter.

General Note: Scenarios above all assume that by the time the Whittier Road is complete a related set of improvements will also have taken place, including improvements to docking facilities for large cruise ships, improvements in parking and other facilities to accommodate day visitors. This set of assumptions sets the stage for at least 700,000 new annual visits to Whittier by car and transfer of 10 to 50% of cruise line traffic to Whittier. In fact, while the road is scheduled to be complete by summer 2000, associated changes in Whittier are moving more slowly. As a result, the large scale increase of day visits and cruise ship transfers will likely be delayed.

¹⁰ Calculations for first year road trips to Whittier are based on Northern Economics low, moderate and high case total user trips, less shopping & commuting, other trips, cruise ships and ferry, divided by two, rounded to the closest 10,000 visitors. See *Whittier Access Improvements Economic Assessment*, December 1993 for original projections.

SEWARD

Tourism Profile

Seward has a well-developed tourist industry, catering to cruise passengers and independent visitors, and travelers from both in and out-of-state. In fact, Seward is distinct from many other small coastal Alaskan towns in that tourism is clearly the main industry, with commercial fishing and freight-loading taking on lesser importance. It is the embarking/disembarking point for many Inside Passage cruises, making it one of Alaska's most-visited towns. The Kenai Peninsula Economic Development District reports that in 1997 there were 50 charter or fishing operations and 14 adventure tour companies registered with the city of Seward. This number is likely to increase with the planned harbor expansion (see below). Seward is also accessible by rail, air and bus. Only 127 miles from Anchorage along the Seward Highway, the town fields considerable RV and car traffic. In addition to a wide range of in-town activities and sights, Seward serves as a gateway to the popular Kenai Fjords National Park, Harding Ice Field, and other wilderness destinations. Overall, the tourism industry in Seward is diverse, with outdoor and adventure tourism opportunities co-existing with more sedate options. Changes in Seward's tourism industry may occur with the completion of a road to Whittier- making Whittier a more attractive destination for cruise ships and independent visitors. The nature and extent of these adjustments remain to be seen.

Attractions/Tours

In town attractions have multiplied in recent years with the addition of the Alaska SeaLife Center (a research and visitor facility) and the adjacent Chugach Heritage Center, both on the edge of downtown. The downtown area also offers numerous shops and restaurants, as well as several upscale galleries. Visitors may take a self-guided tour of the city, published in the Visitor's Guide. A trolley runs from the Chamber of Commerce through downtown. The Seward Convention and Visitors Bureau has a main office on Mile 2 of the Seward highway and a booth at the cruise ship dock and the small boat harbor. Kenai Fjords National Park also operates an information station at the harbor.

Out of town options include scenic day cruises, freshwater and ocean fishing, hiking, kayaking, sightseeing, flightseeing, or mountain bike tours. At least a dozen fishing and scenic-viewing charter operations, offering trips ranging from 2.5-hour tours to 7-day excursions, originate from the small boat harbor. A few companies offer sailing tours, and recently two tour boat companies have begun operating large catamarans for wildlife viewing tours. Small boat rentals are also available. Exit glacier, thirteen miles by road from town, is a popular day destination with interpretive information and well-maintained trails. The Chugach National Forest Seward Ranger District office in downtown Seward provides maps and advice for these and other hiking routes. The Forest Service maintains 6 campgrounds along the highway as well as 18 back country cabins. The State of Alaska also offers public use cabins in Resurrection Bay. Kayak trips are an increasingly popular way to use these cabins.

Accommodations/Restaurants

There are ten sit-down restaurants, plus fast food (Burger King and Subway) and a few bars with menu service. Lodgings include 44 Bed & Breakfasts (up from 17 in the mid 90's), 18 cabins/cottages, 10 motel/hotels (three of which have 75-100 rooms), 12 lodges/inns, and 5 RV

parks (up from 2 in the mid 90's). Two of the large hotels have been completed within the last two years.

Events

Major events include the Silver Salmon Derby (August), and Halibut tournament (May 15-Aug 1). The Mount Marathon Race and 4th of July Celebration including a parade and other festivities attracts upwards of 30,000 weekend visitors.

Tourism Projects - Under Construction/Planned/Under Discussion

Improvements to the Alaska Railroad dock are in the planning stages. These changes would create separate freight and passenger docks, possibly allowing up to 3 passenger vessels (cruise ships or the ferry) to dock at the same time. Currently passenger vessels must accommodate freight vessel needs at a single dock. The goal of the improvements is to improve service, not necessarily capacity, although the new passenger dock would likely be built to allow for future additions.

A plan for the enlargement of the small boat harbor is currently out for review. There are now 660 slips. The expansion would add 380, effectively eliminating the current 400-boat waiting list. The harbormaster estimates that 75% of the boats now in the harbor and on the waiting list are "commercial" and that many of those are tour boats. Therefore, the enlargement would likely lead to substantial increases in the number of tour boats operating out of Seward.

Preliminary steps have been taken to develop a multi-agency visitor information center that will include the Chamber of Commerce's Convention and Visitor's Bureau, the National Park Service, the US Forest Service, and perhaps other small organizations. Currently organizers hope to complete the project by 2001.

A consortium of Native groups is now working to develop a cultural artifact repository and exhibit space, funded in part by the Exxon Valdez Oil Spill Restoration Council. Other projects that have been discussed include a downhill ski area and/or summer tram (similar to the Goldbelt Corporation tram in Juneau) or a large scale recreational "slide".

Marine Tourism Facilities

The ferry *M/V Tustumena* stops in Seward twice a week in the summer. The new ferry *M/V Kennicott* will visit once a month, year round.

Numbers of Visitors

No single entity maintains records of the number of visitors to Seward. Seward has seen large and rapid growth through the 90's, with a notable slow down and in some cases even a decline in visitors in 1997-98. Total numbers of visitors is difficult to estimate. Residents familiar with Seward estimate total visitors - resident and non-resident - is close to 500,000. This is plausible or perhaps even low given cruise ship passengers at approximately 250,000, and an estimated 180,000 non-resident, non-cruise visitors (*SeaLife Center Market Demand Analysis*, FPMM, Aug 1994 -in 1993, an estimated 150,000 non-cruise, non resident visitors visited Seward. 1997 estimate assumes 5% annual growth)

Out-of-State Summer Visitors

As measured by the State's Alaska Visitor Statistics Program, the most recent tallies of out-of-state summer vacation pleasure visitors to Seward (May-Sept.) reported an increase from 89,800 out-of-state visitors in 1989, to 208,300 visitors in summer 1993. For all travel types, summer visitors increased from 122,700 to 248,100 over this period. The State has not updated visitor information to individual communities since 1993. If the percentage of total out-of-state visitors who traveled to Seward from Oct 1992-Sept 1993 (25%) has remained constant, for the year ending in Sept 1997, Seward would have been visited by 337,500 non-resident tourists. (.25 x 1.35 million total visitors).

Cruise Ship Dockings

The number of cruise ships docking in Seward has increased considerably since 1990, and the average size of the ships has increased as well. This trend reflects general growth in cruise travel in Alaska and world-wide. In 1997 number of passengers peaked, with 105 cruise ships and approximately 260,000 passengers coming to Seward. In 1998 numbers of passengers declined to 238, 237. The Seward Convention and Visitors Bureau anticipates cruise passengers generally matching 1998 levels.

Table 36
Seward Cruise Ship Dockings

Year	Number of Dockings	Year	Number of Dockings
1990	25	1995	106
1991	28	1996	105
1992	37	1997	105 (260,889 pax, 2489 avg. pax/ship)
1993	61	1998	110 (238,237 pax, 2165 avg. pax/ship)
1994	94 (172,599 pax, 1836 avg. pax/ship)	1999	95 (currently scheduled)

Source - Anchorage Dept of Community Planning & Development, Anchorage Indicators, 1997. Seward Convention and Visitors Bureau for 1998, 99 information.

Table 37
Cruise Ship Passengers - 1994-98

Type of Passenger	1994	1995	1996	1997	1998
In-transit	8,116	9,749	9,890	12,076	8,279
Embarking	83,227	91,933	109,380	123,912	114,875
Disembarking	81,256	91,749	110,612	124,901	115,083
TOTAL	172,599	193,431	229,882	260,889	238,237
Percentage change		12%	19%	13%	(-9%)

Source - Anchorage Dept of Community Planning & Development, Anchorage Indicators, 1997; 1997-98 information from Alaska Cruise Line Agencies, Anchorage Office - Scott Brown

Table 38
Cruise Ship Passengers by Month - 1997

Type of Passenger	May	June	July	Aug	Sept	Oct
In-transit	2,248	1,172	593	3,335	1,148	1,124
Embarking	10,523	27,317	28,263	29,116	14,160	1 (!?)
Disembarking	10,628	28,171	28,327	29,093	14,385	8
TOTAL	23,399	56,660	57,183	61,544	29,693	8

Source - Anchorage Dept of Community Planning & Development, Anchorage Indicators, 1997

Sportfishing

Number of anglers and angler days have increased in the entire Prince William Sound region, as well as the areas traditionally fished by vessels originating in Seward (e.g. Resurrection Bay, see tables below). The number of charter boat anglers rose in 1997, although the number of shoreline anglers declined.

Table 39
Saltwater Angler Days in Resurrection Bay

Year	Angler Days	Year	Angler Days
1983	42,150	1990	72,181
1984	46,678	1991	73,683
1985	55,759	1992	83,568
1986	55,372	1993	90,274
1987	44,299	1994	87,796
1988	53,029	1996	108,155
1989	50,546	1997	109,462

Table 40
Number of Anglers in Resurrection Bay

	1996 number of anglers	1997 number of anglers
Anglers-Charter	22,139	23,176
Trips-Charter	19,442	18,378
Angler Days-Charter	31,704	30,370
Anglers-Private Boat	16,457	19,779
Trips-Private Boat	25,058	31,498
Angler Days-Private Boat	47,328	50,253
Anglers-Shoreline	12,572	11,518
Trips-Shoreline	17,449	19,231
Angler Days-Shoreline	29,123	28,830

Source: ADF&G

Kenai Fjords National Park Visitors

The annual number of visitors to Kenai Fjords National Park, many of whom likely passed through or lodged in Seward, has increased steadily since 1982 (see chart below). In contrast, between 1997 when 307,419 people visited the park, and 1998 with 265,748 visitors, visitors fell by 41,000 people. Park visitors most often enter the park at Exit Glacier (visiting by road) or by day tour boat. The rapid growth in visitation largely reflects the growing popularity of affordable day boat tours into the park, both by out-of-state visitors and in-state residents. The large majority of this use (approximately 95%) is focused on trips to Exit Glacier.

Table 41
Visitors to Kenai Fjords National Park

Year	Number of Visitors (approx.)	Year	Number of Visitors (approx.)
1983	24,000	1991	105,000
1984	27,000	1992	105,000
1985	35,000	1993	190,000
1986	55,000	1994	210,000
1987	59,000	1995	230,000
1988	57,000	1996	275,000
1989	75,000	1997	307,419
1990	65,000	1998	265,748

Source: Kenai Fjords National Park

Day Sightseeing Tour Boats

Several companies offer regular summer day cruises out of Seward. Day boat tours viewing wildlife, glaciers and other features of Resurrection Bay and adjacent Kenai Fjords National Park have grown steadily and dramatically over the last 10 years. The largest company is Kenai Fjords Tours, founded in 1974. A summary of this company's expansion gives a picture of the growth of day cruising out of Seward.

- *M/V Wildlife Explorer* - 95 feet, 149 passengers, 1999.
- *M/V Coastal Explorer*- 95 feet, 149 passengers, 1998
- *M/V Glacier Explorer* - 95 feet, 149 passengers, 1996.
- *M/V Alaskan Explorer* - 95 feet, 149 passengers, 1995.
- *M/V Kenai Explorer* - 90 feet, 149 passengers, 1993.
- *M/V Greatland* - 90 feet, 149 passengers, 1992.
- *M/V Fjordland* - 90 feet, 149 passengers, 1990.
- *M/V Kenai Fjords* - 75 feet, 90 passengers, 1986.
- *M/V Northland*- 80 feet, 120 passengers, 1983.
- *M/V Alaska Sunrise*- 43 feet, 22 passengers, 1980.
- *M/V Misty* - 43 feet, 22 passengers.
- *M/V Mariah*- 43 feet, 22 passengers.

Seward Museum/Alaska SeaLife Center/Visitors Center

The Seward Museum also experienced a decline in visitors from more than 9000 in 1997 to 8000+ in 1998. Museum staff contend that foot traffic was much reduced in the area because the downtown branch of the Visitor's Center was closed, which also affected the dissemination of promotional information. The Museum is instituting a more aggressive marketing strategy (and hopes for highway signage) which is expected to bring more visitors. The Alaska SeaLife Center had 193,083 visitors in its first months of operation, from May 2, 1998 to Dec. 31, 1998. The center anticipates a 10% increase in visitors in 1999 due to a new interactive video exhibit, although this rate of growth will not likely be sustained. The Convention and Visitors Bureau began keeping count of Visitor's Center users in April of 1998. From April to December 1998, 17,436 people visited the main office. Center employees estimate that the number of Visitor's Center users has been steadily increasing over the last few years. (Karen Perlberg Executive Director Seward Chamber of Commerce Convention & Visitors Bureau)

Alaska Marine Highway System

The Alaska Marine Highway System reports that embarking ferry passenger traffic grew almost 11% in 1997. Although the annual number of embarking passengers from 1988 to 1997 has fluctuated (see table below), traffic increased in 1996 and 1997.

Table 42
Annual Embarking AMHS Passengers in Seward

Year	Number of Passengers	Year	Number of Passengers
1988	3,840	1993	3,317
1989	3,547	1994	2,574
1990	3,171	1995	2,492
1991	791	1996	2,545
1992	2,939	1997	2,819

(Source: Brown Colleen C. 1998. Annual Traffic Volume Report, Alaska Marine Highway System. ADOT&PF)

Table 43
Railroad Passengers - Trips to Seward

Year	Number of Passengers
1990	13,708
1991	14,555
1992	15,827
1993	17,076
1994	18,558
1995	21,621
1996	21,223
1997	24,351

Kenai Peninsula Economic Development District

Air Traffic

Seward has a small airport, with regular flights by only one commercial carrier. FS Air flies into Seward three times a week in the off-season, and 18 times a week during the summer. FS Air declined to give passenger numbers. DOT/PF records show total enplanements in Seward averaging about 1000 annually through the 90's, with a generally downward trend. ERA Aviation tested the Seward market in summer 1997 and 1998, but found that business was not sufficient to justify continuing the service.

USFS Cabin Use

The US Forest Service maintains 18 backcountry cabins in the Seward area. Occupancy rates (number of nights paid) increased 4.4% from 1997 to 1998 (Table).

Table 44
Occupancy Rates at USFS Backcountry Cabins
Seward Area

Year	Number of Reservations	Number of Nights Paid
1997	599	757
1998	640	836

(Source: US Forest Service, Department of Commerce)

Table 45
Summary of Existing Use Information (Seward)

Category/Information Source	Estimated Number of Visitors
Estimated Total Visitors - resident, non-resident Alaska Visitor Statistics Program Out of State <u>Summer</u> visitors	500,000 overall trend - steady growth through the 90's, slowing in 1997, 98. Increase in out-of-state, summer visitors from 122,700 in 1989, to 248,100 visitors in summer 1993, estimated 337,500 in 1997.
Cruise Ship Passengers	1998 - 238,237 passengers, drop of 9% from previous year. <i>Overall trend</i> - dramatic growth, flattening in late 90's.
Sportfishing	54,473 total anglers in Resurrection Bay in 1997, increase over previous year in charter and private boat anglers, decrease in shoreline anglers. <i>overall trend</i> - sustained growth through 90's
Kenai Fjords National Park	<i>overall trend</i> dramatic growth through 90's, from 65,000 to 307,419 annual visits in 1997; 14% decrease in 1998 to 265,748 visitors.
SeaLife Center	193,083 - 1st season of operation (may-dec 1998)
Day Boat Tours	Rapid growth through the 90's
AMHS arriving passengers (residents and visitors)	1997 embarking passengers 2,819, disembarking passengers 2,750 <i>overall trend</i> stable to slightly declining since 92
AMHS estimated number of "tourist" arrivals	Average monthly embarking passengers in the off-season (no service in March) is 94, average May-September is 411 for a gain of 2055 total "tourist" passengers in the summer.
USFS cabin/recreational use	836 nights paid in 1998 at 18 cabins <i>overall trend</i> - steady growth, limited by constrained capacity

Seward Projections Summary

See the section *Overview of Three Future Tourism Scenarios* in this Appendix for more information on general background to the assumptions behind the 3 growth scenarios. Details specific to Seward are below:

LOW - Assumes completion of in town tourism infrastructure projects currently in progress; assumes completion of the Whittier Road and major upgrade of Whittier cruise dock and associated facilities, leading to a shift of one half of current cross-gulf Seward-bound cruise passengers to Whittier.

MODERATE - Assumes completion of several of the tourism projects currently under discussion for Seward. Also assumes completion of the Whittier Road and associated dock improvements, resulting in a shift of one quarter of current cross-gulf cruise Seward-bound passengers to Whittier.

HIGH - Assumes completion of the majority of tourism projects currently under discussion for Seward (dock, artifact repository, small boat harbor, etc.). Also assumes completion of the Whittier Road but that essentially all cross-gulf cruise boats continue to stop in Seward.

Table 46
Annual Visitors
Past, Current Year (base case), Assumptions for Projections

Primary Access Mode	1990	1998 (base case)	Low	Medium	High
Large Cruise Ships (embarking & disembarking passengers)	50,000 (est.)	240,000	1/2 cross-gulf traffic (base case) remains in Seward, remainder relocates to Whittier; thereafter 1.5% annual growth	3/4 cross-gulf traffic (base case) remains in Seward, remainder relocates to Whittier; thereafter 3% annual growth	90% of cross gulf traffic remains in Seward, thereafter 6% annual growth
Small Cruise Ships (overnight)	minimal	minimal	minimal	500, 3% annual growth	1000, 6% annual growth
Ferry (embarking & disembarking passengers)	6,250	5,500	1.5% average annual growth	3% average annual growth	6% average annual growth
Other (highway, air, and rail)		250,000	1.5% average annual growth	3% average annual growth	6% average annual growth
Past Totals		500,000			

Notes on Assumptions

Large Cruise Ship - See Whittier section

Small Cruise Ship - Currently there are minimal small overnight cruise boats operating out of or stopping in Seward. This is explained in large part by the challenges of operation in the unprotected waters of the outer Kenai coast. Over time, however, the same attractions that support the community's major day boat business may lead to some overnight small cruise lines establishing themselves in the area, for example, offering trips that might connect PWS, the Kenai Coast and Resurrection Bay. The high and moderate scenarios reflect this possibility, with 500 passengers in the moderate, and 1000 passengers in the high.

Ferry - incremental growth, reflecting improvements in service and general interest in Alaska, without any major incremental jumps in passengers.

Other (Rail/Road/Air) - incremental growth, reflecting improvements in service and general interest in Alaska, without any major incremental jumps in visitors.

CORDOVA

Tourism Profile

A recent magazine article called Cordova one of "Alaska's last unspoiled small towns" - a place where "the pace of life is still based on the seasons and salmon runs rather than the work week"(Alaska Magazine, Feb 98). Unlike just about any other small, attractive coastal Alaskan town, relatively few tourists visit Cordova. Annual visitation is a magnitude below typical coastal communities: less than 10,000 annual visitors vs. 100,000 or more in road accessible destinations like Valdez, Seward, Haines and Homer. Most locals believe visitation has grown in Cordova in recent years, although firm figures are not available. After 5 years of tours, Stan Stephens Cruises of Valdez stopped sending tour boats to Cordova in 1997. In contrast, in 1998 for the first time, a major cruise line - Norwegian Cruise Lines 800 passenger boat - will be making 12 five hour stops in town. A smaller Alaska Sightseeing/Cruise West boat will also be making weekly stops. The town currently is wrestling with questions of the amount and type of tourism it would like to support in the future.

Cordova offers the unusual combination of the pleasures of a sophisticated small town (shops, restaurants, little league, history, a collection of superb artists) and right-out-the-door access to a spectacular wilderness. The town's rich history and vital current life are readily seen: the town overlooks its large commercial fishing fleet, and many buildings remain from the town's boom days as a port for copper coming by rail from *Kennicott*. Cordova is a gateway into eastern Prince William Sound, the Copper River Delta, the narrow, wild stretch of land running along the Gulf of Alaska, and the rugged Chugach/St. Elias Mountains. The town provides visitors a base for a variety of outdoor activities. Fresh and saltwater fishing are primary draws, along with hiking, birdwatching, river floating. Relative to other Alaskan towns, Cordova has done minimal marketing. Recently the City of Cordova and Chamber of Commerce have begun renewed efforts to plan for and market tourism.

Attractions/Tours

Major in town attractions include the Cordova museum, Chamber of Commerce visitor information center, a walking tour, the PWS Science Center and the US Coast Guard cutter *Sweetbriar*. The town invites exploration on foot, with a collection of attractive historic houses, stores, restaurants, a book store, galleries, library, pool and great views. Near town attractions include: a good system of USFS trails, including several boardwalks and interpretive displays on the delta, Mt. Eccles ski hill, Eyak Lake. Out of town tours and excursions include the popular bus tour through the delta to the Million Dollar Bridge and Childs Glacier, approximately 15 charter fishing/sightseeing boats; two flightseeing companies; and kayak, bike and raft rentals and tours. The USFS operates 8 public use cabins in the area. Cordova currently is not a destination of many package tours. Several companies float the Copper River and spend a day or night in town at the end of their trip. Several fly-out fishing/hunting companies offer multi-day trips to nearby private camps, cabins and houseboats, such as the fishing and hunting areas on the Tsiu River east of the Copper River.

Accommodations/Restaurants

1 relatively large hotel (50 rooms) plus 3 other small hotels for a total of less than 100 hotel rooms; approx. a dozen B&Bs; 1 small RV park; approximately 10 restaurants - less than half of which stay open year round.

Events

Major events include annual shorebird festival in May, winter Iceworm Festival, several salmon derbies, and the Copper River Marathon.

Tourism Projects - Under Construction/Planned/Under Discussion

- *Copper River Trail* - Bike and hiking trail proposed by the State Division of Parks, to follow the railroad ROW from Chitina to Cordova. State Parks has done preliminary field work and held public workshops to test the desirability and feasibility of this proposed "world class trail". The Governor will make a decision on whether to proceed with this project in Spring 98. Thereafter, funding for this \$27 million project would be pursued through the state's standard capital improvements review process.
- *Multi-purpose facility* - City recently hired consultants to investigate public interest, feasibility and options for a multi-purpose community building. The specific program for the facility is to be determined through this process; preliminary ideas focus on local needs such as space for community gatherings, performing arts, cultural and historical information, and conference space.
- *Shepard Point Road/Deep Water Port* - Cordova currently lacks a deep water port. Eyak Corporation, the City of Cordova and the State are making plans to build a road from town north to a potential port site at Shepard Point. \$8 million is currently available to build this approximately \$13 million project. Most of these funds came from the Exxon Valdez oil spill legal settlements. An additional \$5 million is currently included in the State's FY99 Transportation Improvement Plan. Preliminary engineering could begin in summer 99.
- *Bering River Timber/Road Access* - Chugach Corporation, working with Koncor Forest Products, is actively working to build a road into timber holdings in the Bering River area east of the Copper River. Environmental work is nearing completion. Road construction

could begin in Summer 1998. This project would open road access to a large wilderness area with many recreation and tourism attractions.

- *Copper River Road/Ferry improvements* - long discussed projects will be investigated as part of the DOT/PF Prince William Sound/Copper River regional transportation study.
- *In-town Attractions* - proposal for an array of small projects: trails, information, visitor information, signage, shelters, shuttle bus, etc.

Marine Tourism Facilities

Cordova has a small boat harbor with slips for 840 boats, up to 70 feet in length. Unlike the other three study area communities the harbor is not full. About 660-700 slips are assigned, with 80% of these taken by commercial fishing boats. Transient dock space is available, which is used by smaller cruise boats and the lightering craft. During the summer, Cordova has three stops per week by the State Ferry MV *Bartlett*.

Numbers of Visitors

No current, reliable data is available on total visits to Cordova. Local residents believe tourism is growing, but total numbers remain relatively small - best estimate is about 15,000 visitors (in and out-of-state) annually. AVSP data show a total of 11,100 out-of-state visitors in summer 1989, rising to 17,200 in 1993. However, data from air and ferry arrivals, and anecdotal judgments of residents suggest that these numbers substantially overestimate visitor numbers¹¹.

Air Visitors

The table below shows that total enplanements at the Cordova airport - including residents, visitors, and travelers coming for business. Enplanements have grown slowly over the last 25 years. Summer enplanements average about 1000 people more than typical winter months. If all of this additional increment was due to tourism - which is unlikely - total summer visitation by commercial air would be about 4000 people.

Table 47
Cordova "Mudhole" Smith Airport - Annual Enplanements

Year	Air Carrier	Air Taxi	Commuter	Total
1976	10,628	0	3,897	14,525
1980	15,084	1215	285	15,369
1985	13,078	0	2,188	15,266
1990	17,962	1760	4,155	22,117
1992	13,305	0	5,785	19,090
1994	10,366	0	8,653	19,019
1995	12,548	0	10,894	23,442
1996	12,233	0	9,518	21,751
1997	11,228	3	9,465	20,696
1998	*12,150			

Source: FAA, Terminal Area Forecast (APO-TAF data). *1998 data - estimated by Cordova District Airport manager

¹¹ The reliability of Alaska Visitor Statistics Program data drops for lightly visited destinations, due to small sample sizes.

Table 48
Cordova "Mudhole" Smith Airport - Enplanements by Month

	1996	1997
January	1,418	
February	1,337	
March	1,522	
April	1,498	
May	2,169	
June	2,151	
July	2,296	
August	2,718	
September	2,284	
October	1,743	
November	1,477	754 in/863 out
December	1,190	871 in/804 out
TOTAL	23,799	

Source: 1996 data: Eyak Native Corporation Tourism Analysis, 1997 Todd Haley, 424-3278

Cordova Historical Museum

Visitation to the Cordova Historical Museum has grown steadily over the last 10 years, nearly doubling between 1986-96. These numbers include both out-of-town and resident visits.

Table 49
Visitors to Cordova Museum

YEAR	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL
1986	221	682	1004	209	2116
1988	262	645	1326	345	2578
1990	411	765	1534	415	3125
1992	443	509	1857	705	3514
1994	608	1255	1726	452	4041
1995	458	882	2067	548	3955
1996	905	1897	2358	741	5901
1997	634	1216	2896	936	5682
1998	1047	4330	6502	906	12785

Source: City of Cordova Historical Museum - Cathy Sherman. Note: cruise ships arrived in 1998.

AMHS Ferry Visits

Ferry visits have dropped in the last 10 years. Between 1988 and 1994, disembarking passengers remained steady in the 6000-6600 person range, but fell by approximately 1500 visitors in 1995 and 1996. Locals credit this decline to inconvenient ferry schedules.

Seasonal ferry use patterns are similar to air passenger arrivals. In the peak months of May through August, there are twice the number of average numbers of ferry passengers as come in winter (average passengers in Sept, Nov, Dec, Feb, March, April are 282; average passengers May - August are 653). Even if all this summer increase was due to tourists, this would total to only about 1500 travelers. An AMHS study (1992) found that on the Valdez Cordova link, 70%

of ferry passengers are Cordovans, 10% seasonal workers, and 20% visitors from out of state (Eyak Corporation Report).

Table 50
AMHS Passenger Demand to Cordova

1995 Ferry	Passengers Embarking	Passengers Disembarking
January	0	0
February	208	187
March	319	347
April	150	399
May	413	677
June	769	868
July	1072	940
August	911	784
September	372	231
October	0	0
November	225	209
December	298	323
TOTAL	4737	4965

Source: Annual Traffic Volume Report – 1995, AMHS

Sportfishing

Sportfishing in the Cordova area has grown at the same steady rate as sportfishing throughout the Prince William Sound area. In 1994, fishing areas along the Cordova road system and in the Eastern PWS area had approximately the same percentage of all PWS angler days as they did in the 80's. Total numbers of angler days are up by about 100%. This increase is driven by a combination of increasing saltwater charters, road-side fishing, and fly-out fishing tied to the community's several fishing tour operators.

Table 51
Angler Days in Prince William Sound and the Cordova Area

Year	Outer Islands	% of total PWS	Cordova Road Sys	% of total PWS	Copper R. Delta	Eastern PWS	% of total PWS	Total PWS
1984	417	1%	8196	14%	401	0	0%	57548
1986	997	2%	8394	13%	571	2568	4%	64215
1988	1277	2%	6994	8%	453	1249	1%	84971
1990	2143	2%	9107	9%	352	1852	2%	105739
1991	1610	1%	16070	14%	1515	1886	2%	113062
1992	4043	4%	19222	17%	1215	2414	2%	113418
1993	3637	3%	14943	14%	616	1509	1%	104577
1994	4247	3%	19401	16%	529	2616	2%	121944

Source: ADF&G - Area Mgt. Report - Central Gulf Coast Mgt. Area 1995. (see alternative chart - following page)

Childs Glacier Visitor Statistics

The USFS maintains records on visitation to its viewing area/campground at Childs Glacier at the end of the road system east of Cordova. Visitation is estimated by the volunteers who staff this facility for the Forest Service. Figures show a modest increase in people, driven by growing numbers of bus tourists.

Table 52
USFS Records of Visitors to Childs Glacier

Year	Bike	Hike	Raft (people)	Buses (people)	RV's (people)	Cars (People)	Total People
1991							3618
1992	34	1	44	25 (287)	60 (135)	1887 (5661)	6272
1993	38	2	22	29 (330)	89 (273)	1658 (5484)	7018
1994	111	65	44	52 (645)	102 (242)	2538 (4764)	6701
1995	37	10	128	73 (1089)	92 (208)	2467 (6958)	8337
1997	77	6	94	40 (537)	51 (134)	1122 (3595)	4521*
1998	26	33	126		88 (194)	2489 (6646)	9,105

Source: USFS, Cordova District. Record keeping is done by volunteer campground hosts and consequently can be somewhat unreliable. 1996 records are incomplete. *Total people in 1997 is based on a register count only.

Information on the numbers of rafters floating the Copper River is sketchy at best. Unlike the Asek/Tatshenshini River system further east, the Copper River is not wholly within a National Park or National Forest. As a result, commercial operators and private parties do not register with these agencies, and no regular counts are kept. People familiar with the river guess that there may be an average of 3 to 5 parties floating the river per week, totaling to 200-500 people floating the river each season. Use includes private parties and guided commercial trips.

Table 53
Prince William Sound Area Sport Fish Catch and Effort,
1995-1997

	1996 Anglers	1996 Trips	1996 Days Fished	1997 Anglers	1997 Trips	1997 Days Fished
Valdez Bay (boat)	17,171	22,913	38,320	19,694	20,825	39,459
Valdez Road System (shoreline)	6,252	8,416	15,569	5,357	8,195	11,877
Remainder of Valdez Arm (shoreline)	5,393	5,940	10,716	5,596	6,054	10,306
Orca Inlet (boat)	1,989	4,543	6,439	2,842	4,829	7,296
Orca Inlet (shoreline)	861	2,581	3,312	930	2,254	3,049
Montague Is (boat)	1,650	1,194	2,111	3,087	2,570	4,366
Hinchinbrook (boat)	541	425	761	640	456	741
Passage Canal (boat)	2,934	3,037	6,532	4,228	4,729	8,599
Esther Island (boat)	1,743	2,062	5,072	2,253	3,299	6,344
Other (boat)	7,717	9,570	17,982	8,478	11,089	20,315
Other (shoreline)	1,390	1,614	3,858	1,095	1,785	3,180
SALTWATER TOTAL	38,369	62,295	110,672	42,647	66,085	115,532
Eyak River	1,107	4,136	5,291	1,063	2,037	2,587
Robe River Drainage	322	1,263	1,540	345	377	925
Alaganik Slough	992	1,399	1,937	738	1,257	1,695
Coghill River	318	390	561	391	284	501
Clear Creek	1,350	2,576	3,562	921	1,607	2,140
Other Streams	1,962	3,376	5,856	2187	3,535	5,067
Other Lakes	1,272	1,296	2,109	1,055	1,149	1,843
Other Systems	147	177	353	N/A	N/A	N/A
FRESHWATER TOTAL	5,240	14,613	21,209	4,775	10,699	14,758
GRAND TOTAL	41,128	76,908	131,181	44,928	76,784	130,290

Source: ADF&G

Cruise Ship Passengers

- *Large Ships (Norwegian Cruise Lines)* - 13 stops at about 450 per stop equals approximately 6000 total visitors.
- *Small Ships (AK Sightseeing/Cruise West)* 30 stops (2 ships), at full capacity equals maximum of 1898; actual passengers 1410 (Spirit of Glacier Bay: 533, Spirit of Alaska: 877). Virtually all get off. Other small cruise companies, such as the 12 person *Discovery* stop occasionally in Cordova, adding approximately 500 additional visits per summer. Total small cruise - 2000.
- *Total cruise visitors* - approximately 8,000.

Table 54
Summary of Existing Use Information (Cordova)

<i>Category/Information Source</i>	<i>Estimated Number of Visitors</i>
Estimated Total Visitors - resident, non-resident	15,000? <i>overall trend</i> - stable through the 90's with recent jump due to summer 98 cruise ship arrivals
Alaska Visitor Statistics Program	11,100 in 1989, rising to 17,200 in 1993 (includes all visitor trip purposes). AVSP estimates likely incorrect (too high) due to small sample size.
Out of State <u>Summer</u> visitors	since 1985 rose slowly to peak at 23,442 in 95, since dropped to 20,696 - <i>overall trend</i> - stable to slow decline
Annual Enplanements (residents & visitors)	Enplanements grows by about 1000 people per month during the summer (may-Sept 96). If all of this increase was due to tourists (not the case), the total tourist numbers of summer season visitors would be at most 4000. <i>overall trend</i> - stable to slow decline
Estimated number of "tourists" arriving by commercial air carrier	Enplanements grows by about 1000 people per month during the summer (may-Sept 96). If all of this increase was due to tourists (not the case), the total tourist numbers of summer season visitors would be at most 4000. <i>overall trend</i> - stable to slow decline
Arriving by ferry (residents & visitors)	Disembarking ferry passengers grows by about 400 people per month during the summer tourist season. If all of this increase was due to tourists (not the case) the total numbers of summer season visitors would be at most 1600.
Estimated number of "tourists" arriving by ferry	Disembarking ferry passengers grows by about 400 people per month during the summer tourist season. If all of this increase was due to tourists (not the case) the total numbers of summer season visitors would be at most 1600.
Arriving by Large Cruise Boat	None until 1998; summer 1998 approximately 6000 people
Arriving by Small Cruise Boat	Rough estimate: mid 1990s - 100 per week or 1000 people; summer 1998 - approximately 2000 people
Visiting Museum	growing from 2116 to about 4000 in 1994, stable 1995-97, growing again in 1998 to 12,785
Sportfishing	steady growth in angler days, anglers

Table 55
Calculating Existing (1998) Visitors (Cordova)

<i>Air</i> - estimate 75% of summer additional increment of air enplanements are visitors (either from in or out of state, including seasonal workers). The rest are residents who travel more often in the summer.	3000 (data not available - so repeat 1997)
Ferry Arrivals - estimate 50% of additional increment of ferry disembarkations are travelers (either from in or out of state)	1000 (data not available - so repeat 1997)
<i>Cruise Ship Arrivals - Smaller</i> (AK Sightseeing & others)	2000
<i>Cruise Ship Arrivals - Larger</i> (Norwegian)	6000
Other (private plane, private boat, Copper river rafters)	3000
Total	15,000

Cordova Projections Summary

See the section *Overview of Three Future Tourism Scenarios* in this Appendix for information on general background to the assumptions behind the three growth scenarios. Details specific to Cordova are listed below. In all scenarios, completion of Whittier Road increases activity throughout the Sound.

LOW - Minimal improvements in tourism facilities and services in Cordova.

MODERATE - Modest improvements to Cordova area tourism infrastructure: improved trail system, development of natural/cultural history programs and facilities, better marketing, summer-time operation of the ski hill, improved access to Sheridan Glacier, etc. Modest increase in facilities for and passengers associated with large and small cruise ships.

HIGH - Large-scale improvements to tourism infrastructure including large cruise ship docking facilities, new visitor attractions (large scale indoor attractions, major restoration of Copper Mining history). Development of a much expanded set of shore excursions, rafting, fishing, boating, flightseeing, natural and cultural history tours, etc. Also new tourism facilities around eastern PWS such as lodges, day boat facilities, development of Native Corporation tourism facilities including expansion of Hinchinbrook Island Spirit Camp, development of coastal properties held Eyak.

Table 56
Cordova Annual Visitors
Past, Current Year (base case), Assumptions for Projections

Primary Access Mode	1990	1998 base case	LOW	MODERATE	HIGH
Large Cruise Ships (disembark/embark passengers)	0 (est.)	6000	2% annual growth	18,000 passengers added to existing base case, thereafter 4% annual growth	43,000 passengers added to existing base case,; thereafter 8% annual growth
Small Cruise Ships (disembarking round-trip pax)	approx. 100	2,000	growth at 5% annually	growth at 15% annually	growth at 35% annually for 10 years, dropping to 15% in year 11
Ferry (disembarking passengers)		1000	2,000 passengers added to existing base case, 1.5% annual growth thereafter	6,000 passengers added to existing base case, 3% annual growth thereafter	12,000 passengers to existing base, 6% annual growth thereafter
Other (highway, air, and rail)		5000	1.5% annual growth	3% annual growth	6% annual growth
Totals	10,000	15,000			

Notes on Assumptions

Large Cruise Ship

Low scenario - Assumes no new cruise lines travel to Cordova, but that the percentage of travelers getting off the ship increases and/or a larger ship is sent supporting slow growth.

Moderate Scenario - Base case is two additional cruise ships at about 800 passengers per ship add Cordova as a Port of Call, increasing annual visitors to 18,000 per year.

High Scenario - Base case is three cruise boats per week at an average of 1200 embarking passengers per ship (3 x 1200 x 12 weeks equals 43,000 passengers)

Annual growth after the base case is established are at the higher end of the three growth rates set out in the section *Overview of Three Future Tourism Scenarios* in this Appendix (2%, 4%, 8%). These higher rates reflect the fact that the cruise lines have grown at an average of over 12% annually for last 10 years, and are well positioned in their demographics, products and resources for continued growth.

Small Cruise Ship - see Whittier section

Ferry - see Whittier section for general background. Ferry projections build from the assumes about increased ridership associated with the Whittier Road, and in some scenarios, improvement to the ferry service. Cordova currently has roughly 40% the ferry ridership of Valdez and Seward.

Low Scenario - Cordova receives 20% of the one time jump of 10,000 tourist passengers riding the ferry between Whittier and Valdez, for an increase of 2000 passengers to existing base; 1.5% growth annual thereafter.

Moderate Scenario - Cordova receives 30% of one time jump of 20,000 tourist passengers riding between Whittier and Valdez, for an increase of 6,000 passengers to existing base; 3% growth annual thereafter.

High Scenario - Cordova receives 40% of one time jump of 30,000 tourist passengers riding between Whittier and Valdez, for an increase of 12,000 passengers to existing base; 6% growth annual thereafter.

Other (Rail/Road/Air) - This category covers those travelers who come into Cordova by air.

VALDEZ

Tourism Profile

Valdez is currently the only road-accessible community on Prince William Sound, and is one anchor on the popular loop road-ferry trip from Anchorage up the Glenn Highway, over Thompson Pass, and back across the Sound to Whittier. Valdez is a major salmon and halibut sport-fishing destination, particularly for residents of interior Alaska, and a destination for growing numbers of RV's. Package and independent adventure tourism is also on the rise, including

ocean and freshwater kayaking and rafting, mountain biking, hiking, and ice climbing. In the last 4 years, cruise traffic has grown significantly. The town serves as base camp for internationally known extreme skiing, snowboarding, dog sledding, ice-climbing and snow machining. The March 1999 issues of 7 national winter recreation/adventure magazines all included stories or pictures of skiing in the Valdez area, and the VCVB estimates 10-15,000 people come to ski/snowboard each year. Overall, the community is transforming itself from a sleepy town at the end of the pipeline, into a established, diversified visitor destination.

Valdez has an active Convention and Visitors Bureau and engages a wide range of marketing activities. Recently the town's fishing charter companies formed an association for coordinated marketing. A new ordinance regulates harbor activities to better coordinate fishing charters, sightseeing and private boats. The Valdez Bed & Breakfast Association developed during the oil spill, became inactive during the mid 90's, and is now back in full force. There is also a small business development group in town.

Attractions/Tours

Major in town attractions include Valdez museum (featuring gold rush history), the Whitney collection of Native artifacts and animal mounts, visitor information center, musical history show, collection of shops and restaurants, walking tour, Natural History Center and PWS Community College. While the town itself is nondescript, Valdez has a spectacular setting, surrounded by jagged mountain peaks, and attractive views out over the water. Near town attractions include: Alyeska Oil Terminal and Solomon Creek salmon hatchery tours, river rafting past Keystone Canyon waterfalls, Worthington Glacier, hiking trails, "duck flats" wildlife observation area. Tours and excursions include over 40 charter fishing boats, day and overnight PWS boat tours including trips to Columbia Glacier, flightseeing, kayak and raft rentals and tours, sailboat charters, helicopter/fixed wing and sno-cat skiing, city tours by bus, and snowmobile tours. Valdez is a destination on a number of 1-2 day package tours originating in Anchorage, offered by businesses including Stan Stephens Cruises, Grayline and Era.

Accommodations/Restaurants

4 large hotels (+/- 100 rooms), 4 other smaller hotels/inns totaling approx. 600 rooms; approx. 40 B&Bs; 8 RV parks/campsites with about 600 sites; and over a dozen restaurants.

Events

Major events include World Extreme Skiing Championships, King of the Hill Extreme Snowboard Tournament, Ice Climbing Festival, Quest for Gold Sled Dog Race, PWSCC Edward Albee Theater Conference, two Chamber of Commerce sponsored fishing derbies, 4th of July Celebration, Mayor's Cup Snowmobile Race, Mountain Man Hill Climb Snowmobile compassion, Eureka to Valdez Snowmobile Safari, and the Snowman Festival.

Tourism Projects - In Development/Planned/Under Discussion

- New trail system - state is completing trail to Shoup Bay. Valdez Trails Assoc. is restoring gold rush trails towards Keystone Canyon, ultimately to connect Thompson pass & Shoup Bay.
- Marine and Cultural Center (under discussion)

- Upgrade to downtown dock, so cruise boats can stop within walking distance of downtown, construction summer 98, done 99
- City beautification plan, improving downtown roads, sidewalks, pocket plazas, mini-parks
- Using Exxon Valdez oil spill and other funds, land was recently acquired for a new State Park about a mile off the trail head of the new Shoup Bay trail.

Marine Tourism Facilities

Daily summer service by AMHS. Cruise ship dock (no size limits for cruise ships currently active in Alaska, some requirements to juggle arrivals for cargo and oil, but no significant limits on use). 500 plus slips for small boats, with long waiting list (5-7 years). Project being discussed to reconfigure/expand small boat facilities.

Numbers of Visitors

Valdez Convention and Visitors Bureau (VCVB) estimates total visitors to be about 150,000 to 170,000, split about evenly between cruise ship visitors and visitors arriving by RV/car/bus. This estimate seems plausible in light of other indications of travel volume. VCVB reports that in 1997 cruise ship passengers dropped (see below), but that overall city visitation was up, led by increasing use by motorhomes, sport fishing, adventure travel tours and winter tourism. In 1998 both cruise ship traffic and total city visitation increased. Overall, Valdez tourism - both package and independent travelers, and the number and type of visitor-serving businesses - has grown rapidly over the last 10 years.

Out-of-State Visitors

As measured by the State's Visitor Statistics Program, the most recent tallies of out-of-state summer vacation pleasure visitors to Valdez reported an increase from 97,100 out-of-state visitors in 1989, to 124,300 visitors in summer 1993. The State has not updated visitor information to individual communities since 1993. If the percentage of total out-of-state visitors who traveled to Valdez from Oct 1992-Sept 1993 has remained constant (12% of 1,047), for the year ending in Sept 1997, Valdez would have been visited by about 160,000 non-resident tourists. (.12 x 1.35 million total visitors). Because other areas of the state - Seward, Juneau, Anchorage, Skagway, for example- have been recipients of a disproportionate share of the cruise company related growth that has pushed visitor numbers so high, it is possible that Valdez is not receiving a the same 12% share of the market that visited the community in '93.

Convention Market

Valdez has a 20,000 SF conference and meeting facility, including a theater, ballroom and commercial kitchen. The facility is currently booked for 5 conferences/conventions in 1999, including 3 statewide associations.

Cruise Ships

Visits by large cruise ships to Valdez grew rapidly from roughly 30,000 annual passengers in the late 80's and early 90's, to approximately 60-70,000 passengers in the mid 90's. In 1998,

82,098 cruise passengers stopped in Valdez. Most cruise stops in Valdez are from 4 to 6 hours with one line - World Explorer Cruises - spending 10 hours.

Table 57
Valdez Large Cruise Ship Dockings and Passengers

year	passengers	landings*	cruise ship companies
1988	30,266	37	Princess, World Explorer, Cunard, 4 others
1989	39,935		
1990	23,566	31	
1991	26,962	31	Holland America, Cunard, World Explorer
1992	28,008		Holland America, Cunard, World Explorer
1993	28,362		Holland America, Cunard, World Explorer
1994	56,896		Holland America, Cunard, World Explorer Regency,
1995	61,445	67	Holland America, Carnival, World Explorer
1996	72,311	57	Holland America, Carnival, World Explorer Celebrity, Crystal, Transocean, Princess
1997	59,856	57	Holland America (3), Carnival, Celebrity, World Explorer (+ Alaska Sightseeing Cruise West)
1998	82,098	65	Holland America, Carnival, Crystal, Celebrity, World Explorer (+ AK Sightseeing Cruise West)

Source: Valdez Port Authority. *landings exclude small cruise ships, boats using small boat harbor.

Alaska Marine Highway System

Valdez is served by the M/V *Bartlett* from March to September and by the M/V *Tustumena* year round. Passenger and vehicle embarking/disembarking numbers for both ferries are shown below. Ferry use has been generally stable at about 14,000 passengers in and out of Valdez since 1990.

Table 58
Valdez 1997 Ferry Traffic

Month	Passengers		Vehicles	
	Embarking	Disembarking	Embarking	Disembarking
January	274	303	56	48
February	335	230	62	71
March	420	417	137	77
April	628	489	168	98
May	1159	1085	437	349
June	2908	2737	835	765
July	3477	3745	917	977
August	3447	3261	977	930
September	952	988	333	387
October	212	183	55	48
November	288	352	66	71
December	156	154	46	45
TOTAL	14256	13944	4089	3866

Alyeska Pipeline Terminal Tour

Until 1995, pipeline terminal tours were offered without cost by Alyeska. Visitation dropped off once the tour was no longer free. 15,000 people visited in '96, 18,000 in 1997, 20,500 in 1998.

Table 59
Valdez Information Center – Number of Visitors

MONTH	1993	1994	1995	1996	1997	1998
May	2247	2404	3518	3388	2292	4288
June	10227	13641	12853	10981	9131	12160
July	17812	18755	15602	12144	12674	14490
August	14283	13865	14031	11678	12746	13958
September	4103	4521	4291	4735	2532	5064
	48672	53186	50295	42926	39375	49960

Source: Valdez Convention and Visitors Bureau. After 1995, many cruise passengers would not be included in these numbers due to off site showing locations which did not bring them to the visitors center. Also, many were greeted dockside and provided with Valdez information; these were not included in the above figures. In 1997 there were 12 fewer cruise ship dockings.

Table 60
Entries to Alaska By Personal Vehicle – Total Visitors
(non-residents)

Entry Point	1990	1991	1992	1993	1994	1995	1996	1997
Alcan/Poker	52500	49600	53900	55300	58600	66500	61600	53600
Skagway	28900	29300	42600	33100	33400	38400	38300	39000
<i>Total Highway</i>	81400	78900	96500	88400	92000	104900	99900	92600

Source: Valdez Convention and Visitors Bureau. Note: while highway entries have declined, visits to the Tok Visitor information center are up, perhaps reflecting growth in the drive-rent visitor market. Tok visitors: 1997 - 44,099; 1996 - 41,684; 1995 - 36,376. Growth in travelers to the Tok visitor center is at least in part driven by improvements in the appearance, size and information available in the facility. DOT/PF avg. daily vehicles counts at the Lowe River Bridge 10 miles north of Valdez were 428 in 1991, 487 in 1993, and 509 in 1996.

Valdez Area Sportfishing

The number of angler days in the Valdez area has rose through the 80's, peaked in 1990, and has been relatively stable since. Most recently the number of anglers fishing in saltwater areas near Valdez increased slightly from 28,816 in 1996 to 30,647 in 1997. Area-wide numbers fell 5% in 1997 to 61,6421 angler days. In 1996, 60% of anglers fished from boats (as opposed to shoreline fishing); in 1997, 65% fished from boats. This gain perhaps reflects more aggressive marketing associated with the recently established charter fishing business association.

Table 61
Valdez Area Angler Days

Year	Angler Days	Year	Angler Days
1983	16,052	1990	71909
1984	23605	1991	68794
1985	51862	1992	60952
1986	32051	1993	53658
1987	48174	1994	56329
1988	52108	1996	64605
1989	49500	1997	61642

Sources: Hoffman, Andrew 1996. Area Management Report for Recreational Fisheries on the Central Gulf Management Area, 1995. ADF&G, Fishery Management Report No 96-4, Anchorage. Howe, A.L., et al. Harvest, Catch and Participation in Alaska Sport Fisheries During 1996. ADF&G, Fishery Data Series No. 97-29, Anchorage. Howe, A.L. et al. Harvest, Catch and Participation in Alaska Sport Fisheries During 1997. ADF&G Fishery Data Series No. 98-25.)

Table 62
Summary of Existing Use Information (Valdez)

Category/Information Source	Estimated Number of Visitors
Convention & Visitors Bureau estimate of total visitors	1998 - 150,000 to 170,000 (in & out of state). Use 170,000 as base case.
Alaska Visitor Statistics Program - Out of State Summer visitors AMHS ferry passenger arrivals 1997 (residents and visitors)	increase from 97,100 out-of-state visitors in 1989, to 124,300 visitors in summer 1993 14,256 embarking passengers, 13,944 disembarking passengers <i>overall trend</i> - generally stable since about 1991
AMHS ferry "tourist" arrivals	Number of embarking passengers grows by about 3500 per peak summer months compared to winter travel, an increase of nearly 12,000 passengers between May and Sept relative to the 6 month winter average of 300 passengers.
Cruise ship passengers	82,098 in 1998, up 12,000 since 1997 <i>overall trend</i> - stable through mid 90's, up 35% in 1998.
Visitor Center numbers	Numbers dip after 1995 due to cruise ships docking off-site, but grow significantly to 49,960 in 1998. <i>overall trend</i> - stable, recent growth
Alyeska Pipeline tour visitors	Increasing by about 3,000 visitors per year to 20,500 in 1998 <i>overall trend</i> - steady growth
Personal vehicle entries	Decline at Canada border crossing from 104,900 visitors in 1995 to 92,600 visitors in 1997. Increase in 1998. DOT/PF avg. daily vehicles counts at the Lowe River Bridge 10 miles north of Valdez were 428 in 1991, 487 in 93, and 509 in 96. <i>Overall trend</i> - steady growth
Air	Air embarkations (visitors and residents) have grown from 23,607 in 1990 to 51,261 in 1996. No more than 1/2 are travelers. <i>Overall trend</i> - steady growth
Sportfishing	Area-wide numbers fell 5% in 1997 to 61,6421 angler days. <i>Overall trend</i> - flat to slow decline since 1990.

Valdez - Projection Assumptions

See the section *Overview of Three Future Tourism Scenarios* in this Appendix for information on general background to the assumptions behind the three growth scenarios. Details specific to Valdez are listed below. All three scenarios assume completion of the Whittier Road and resulting influx of visitors to PWS.

LOW - no new attractions beyond those already planned (e.g. several new trails, continuing improvements in appearance of town).

MODERATE - minor new attractions beyond those in the low scenario. Continuing expansion of visitors to Copper Basin. Improved ferry service

HIGH - major new attraction(s) e.g. marine & cultural center beyond those in the moderate scenario. Significant growth in visitors to Wrangell St. Elias National Park and the upper Copper River Basin. Construction of Copper River Trail. Continued growth of winter tourism related to skiing/snowboarding. New day ferry service out of Whittier to Valdez and Cordova.

Table 63
Valdez Annual Visitors

Past, Current Year (base case), Assumptions for Projections

Primary Access Mode	1990	1998 Base Case	LOW	MODERATE	HIGH
Large Cruise Ships (Port of Call Passengers)	23,566	82,098	passenger base of 1996-1998 avg.; growth at 2%	passenger base of 1996-1998 avg.; growth at 4%	increase passenger base to 110,000; growth at 8%
Small Cruise Ships (Port of Call Passengers)	approx. 100	2,000	start at current base case, growth at 5% annually	growth at 15% annually	growth at 35% annually for 10 years, dropping to 15% in year 11
Ferry (disembarking passengers)	14,000	14,000	initial 10,000 increase, 1.5% annual growth thereafter	initial 20,000 increase, 3% annual growth thereafter	initial 30,000 increase, 6% annual growth thereafter
Other (highway, air, and rail)	40,000 to 60,000	50,000 to 70,000	1.5% annual growth	3% annual growth	6% annual growth
Totals	80,000 to 100,000	150,000 to 170,000			

Notes on Assumptions

Large Cruise Ship - Growth scenarios assume continued growth of cruise ship travel in Alaska generally with growth in Valdez. Scenarios differ in terms of rate of growth statewide, and ability of Valdez to attract a growing percentage of cross-gulf traffic. Approximately 30% of cross-gulf passengers currently stop in Valdez. The first two scenarios presume this percentage remains constant; the high scenario assumes Valdez can increase stops to 40%, for example, through attracting a cruise line such as Princess that currently is not stopping in the community.

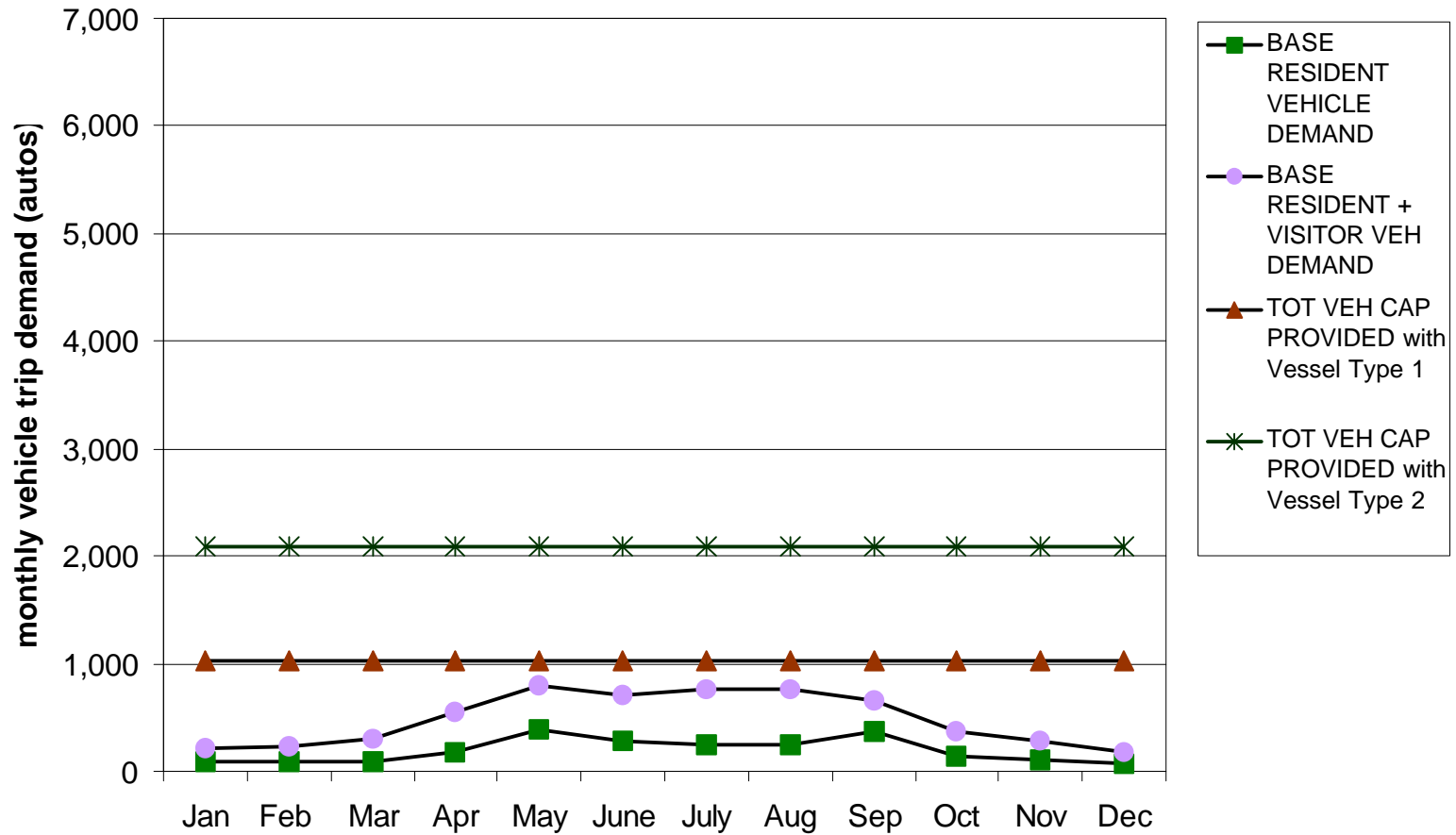
Small Cruise Ship - see Whittier section

Ferry - see Whittier section

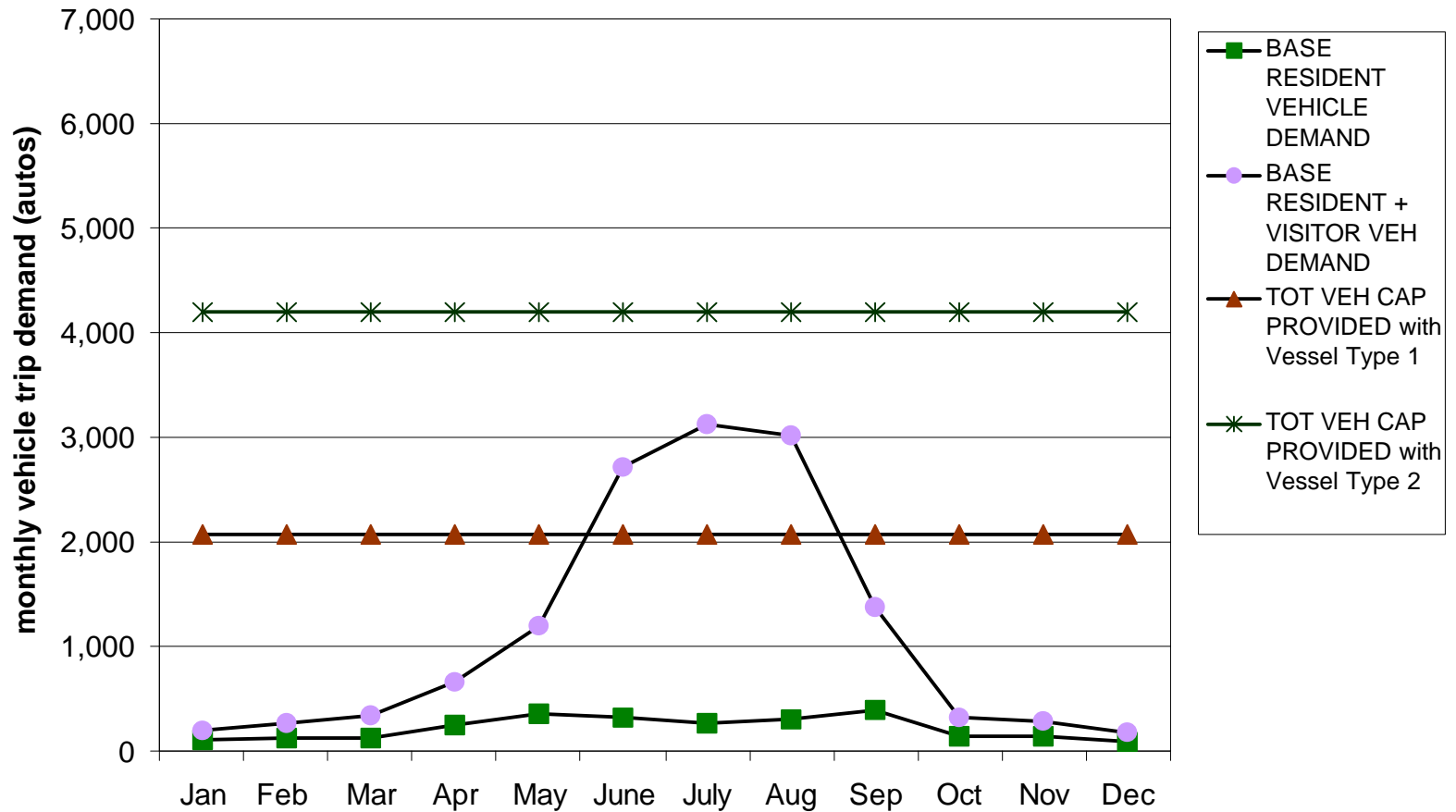
Other (Rail/Road/Air) - This category covers those travelers who will come into Valdez by road or air in the future. This includes visitors coming just to see the town, as well as those who will go fishing, kayaking, take a day cruise or engage in other recreational pursuits.

APPENDIX B – COMPARISON OF 2020 FORECAST
MONTHLY VEHICLE TRIP DEMAND VS. CAPACITY
FOR MARINE GROUP 3 ALTERNATIVES

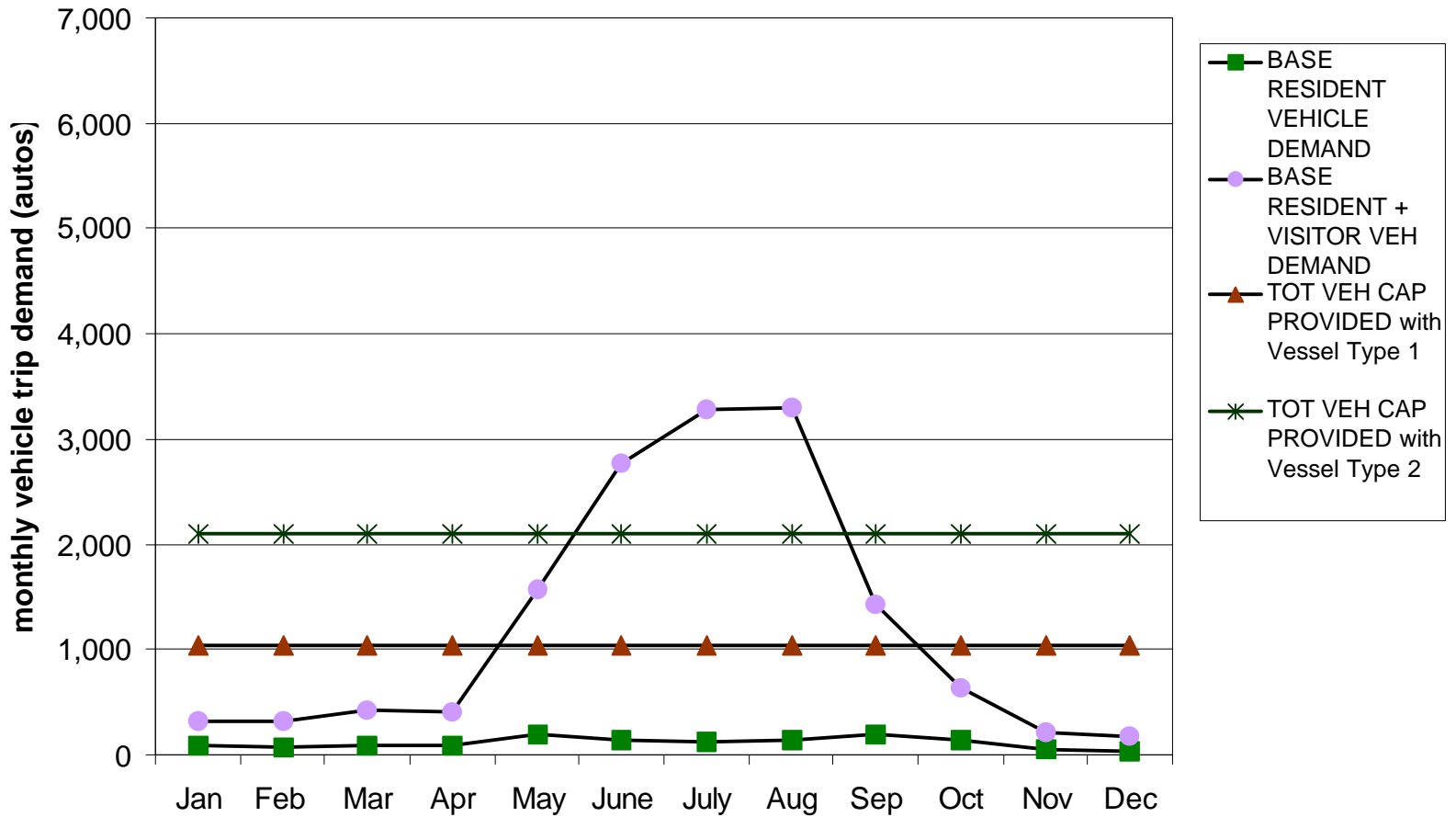
Alternative 2A: 2020 Vehicle Demand vs. Capacity Cordova



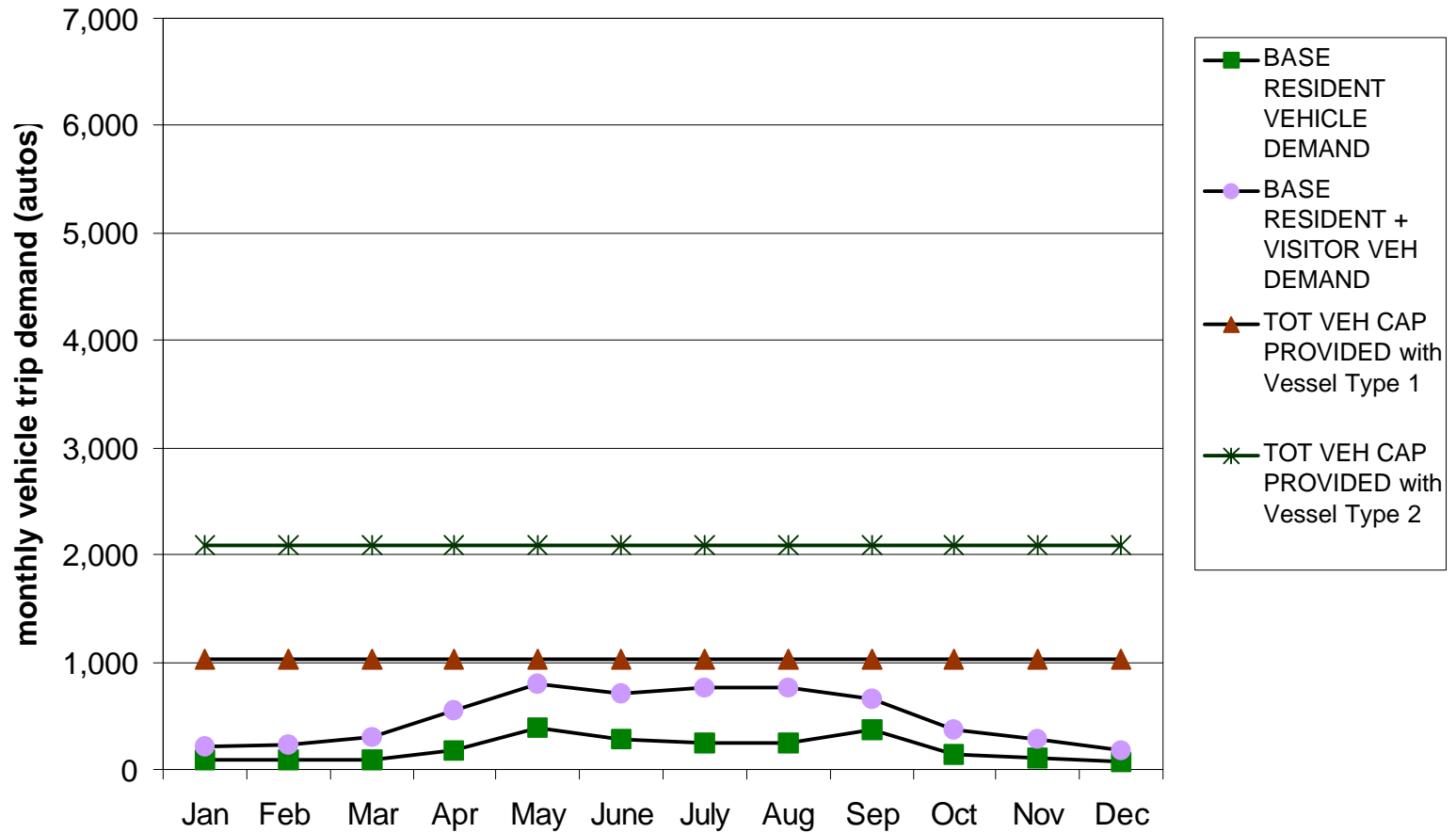
Alternative 2A: 2020 Vehicle Demand vs. Capacity Valdez



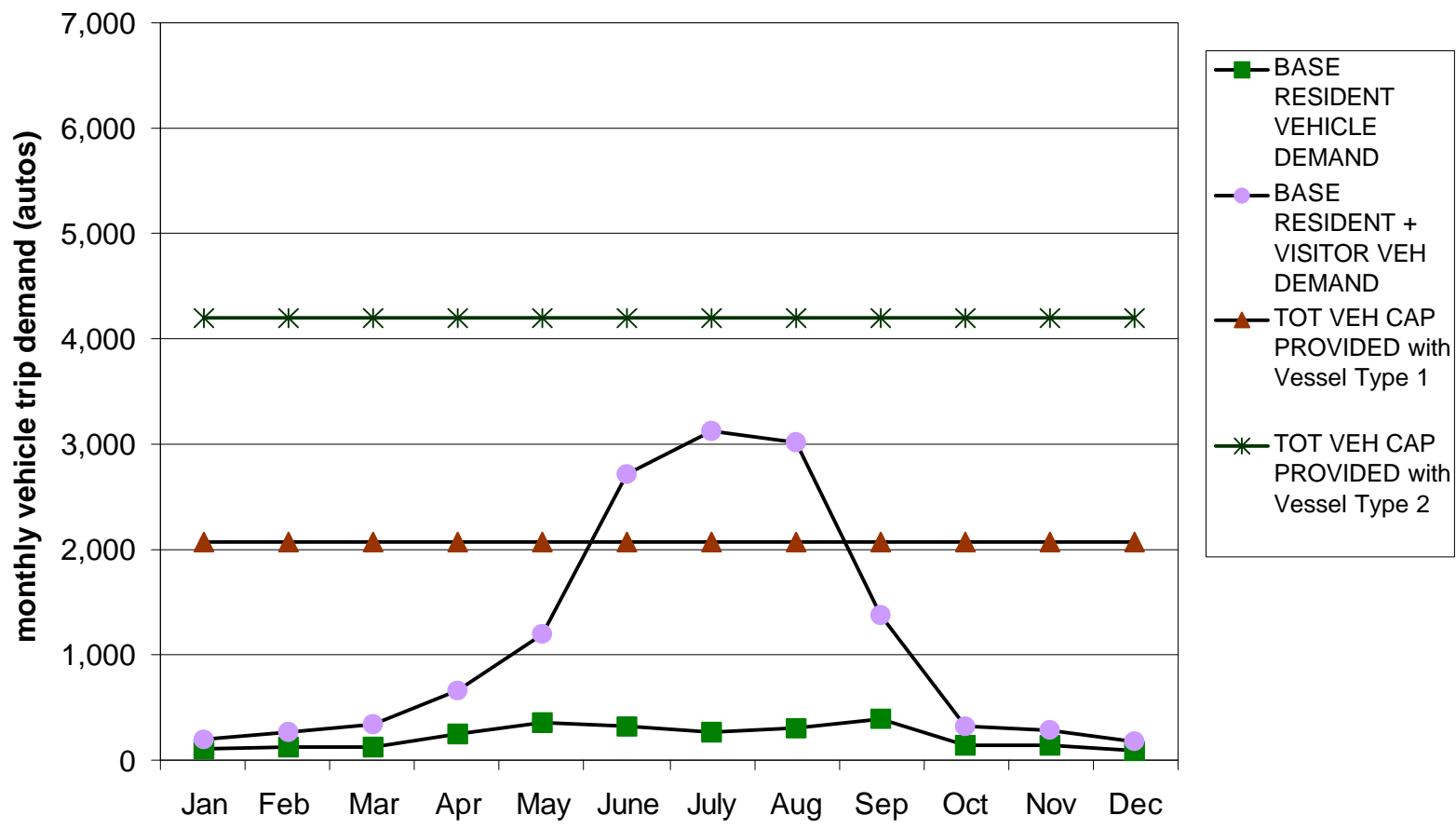
Alternative 2A: 2020 Vehicle Demand vs. Capacity Whittier



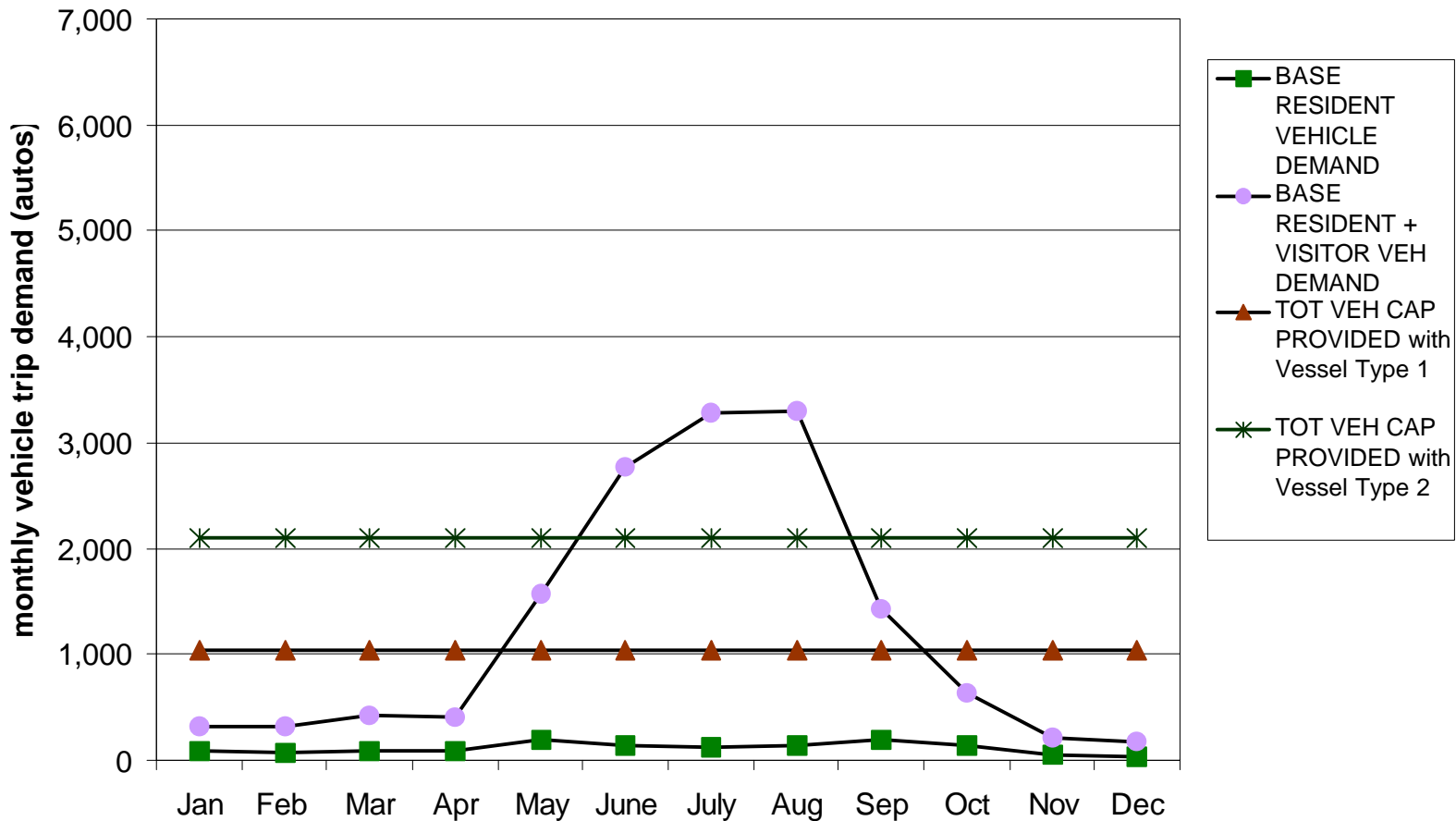
Alternative 2B: 2020 Vehicle Demand vs. Capacity Cordova



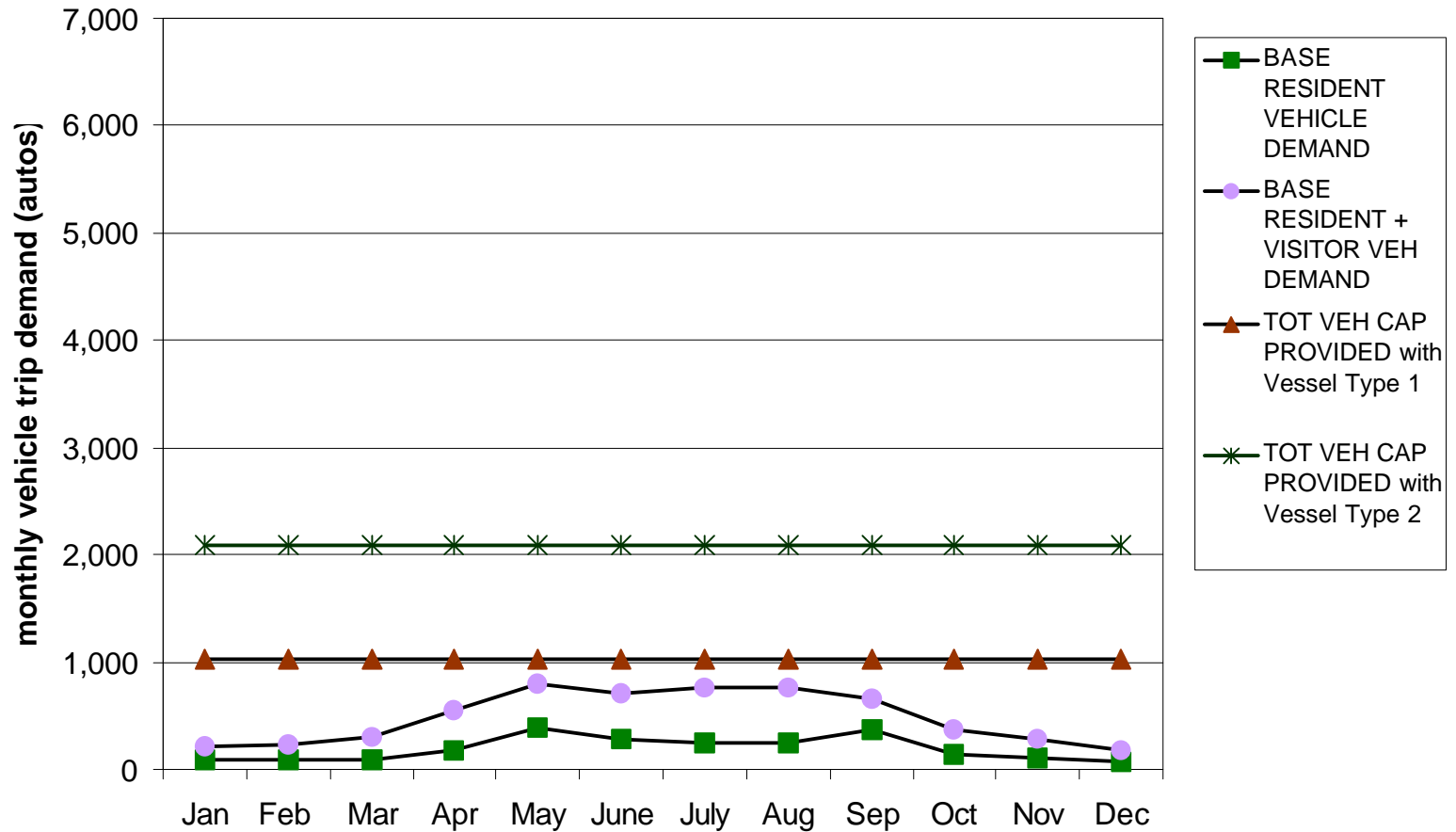
Alternative 2B: 2020 Vehicle Demand vs. Capacity Valdez



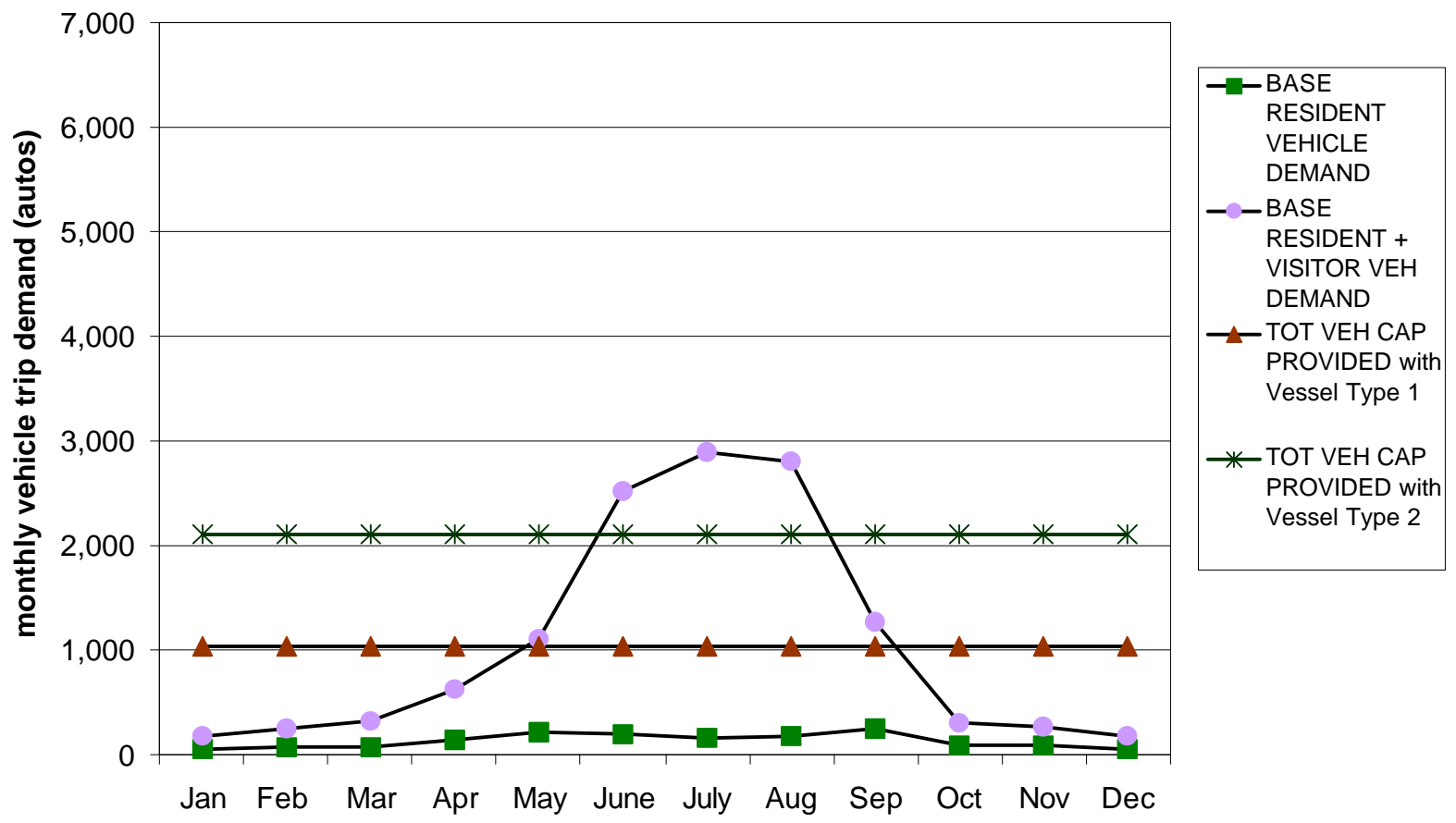
Alternative 2B: 2020 Vehicle Demand vs. Capacity Whittier



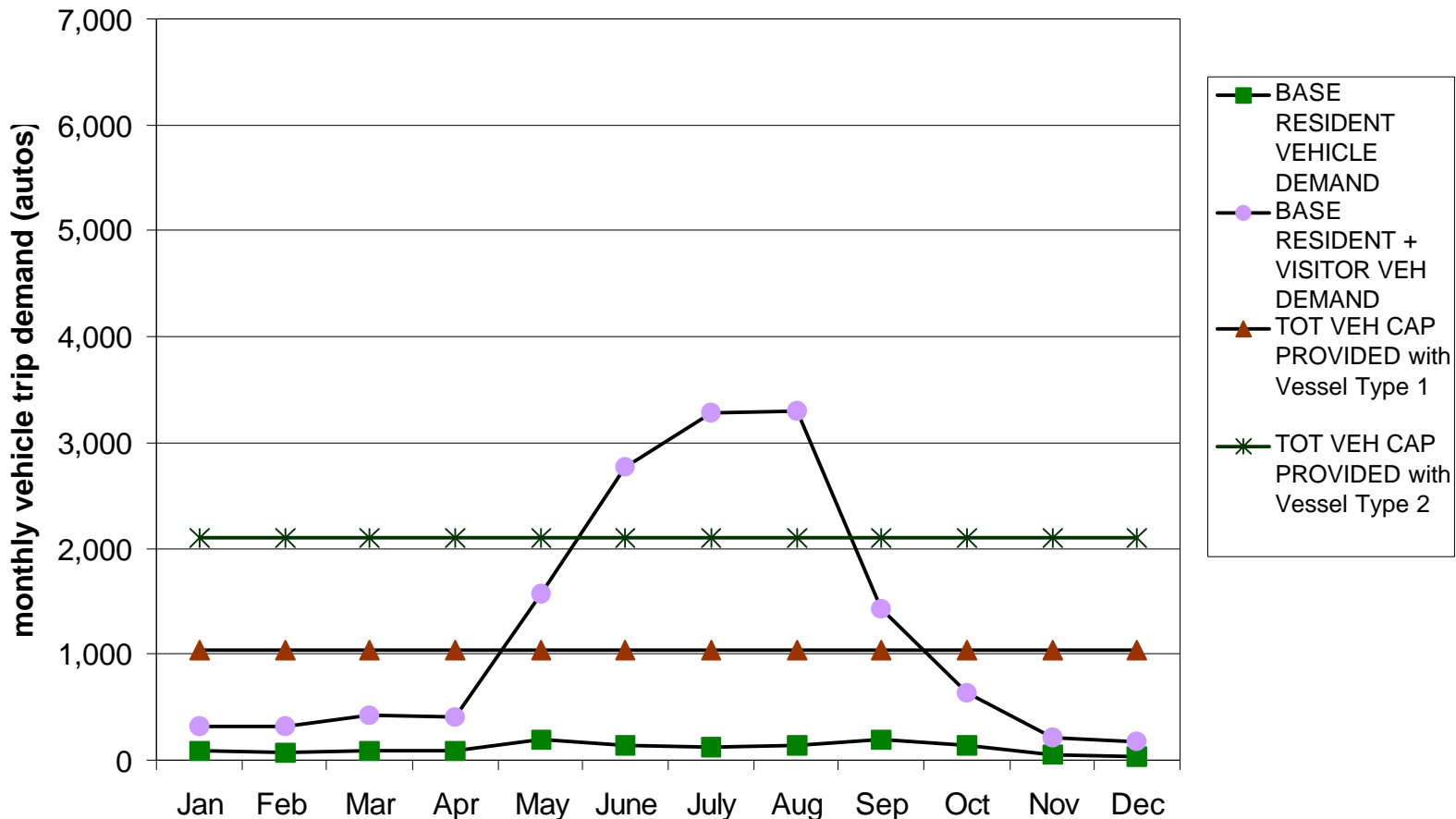
Alternative 2C: 2020 Vehicle Demand vs. Capacity Cordova



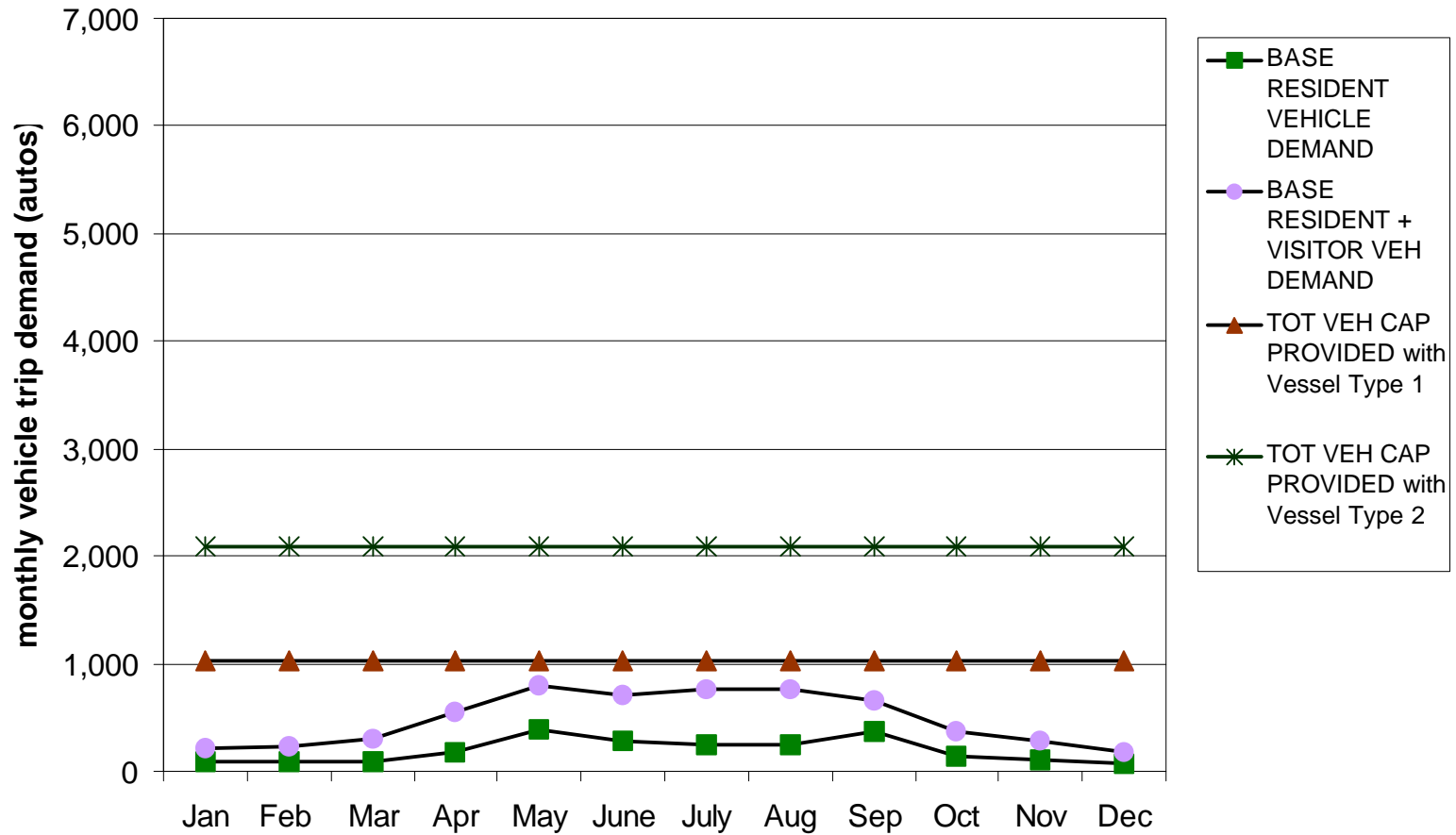
Alternative 2C: 2020 Vehicle Demand vs. Capacity Valdez



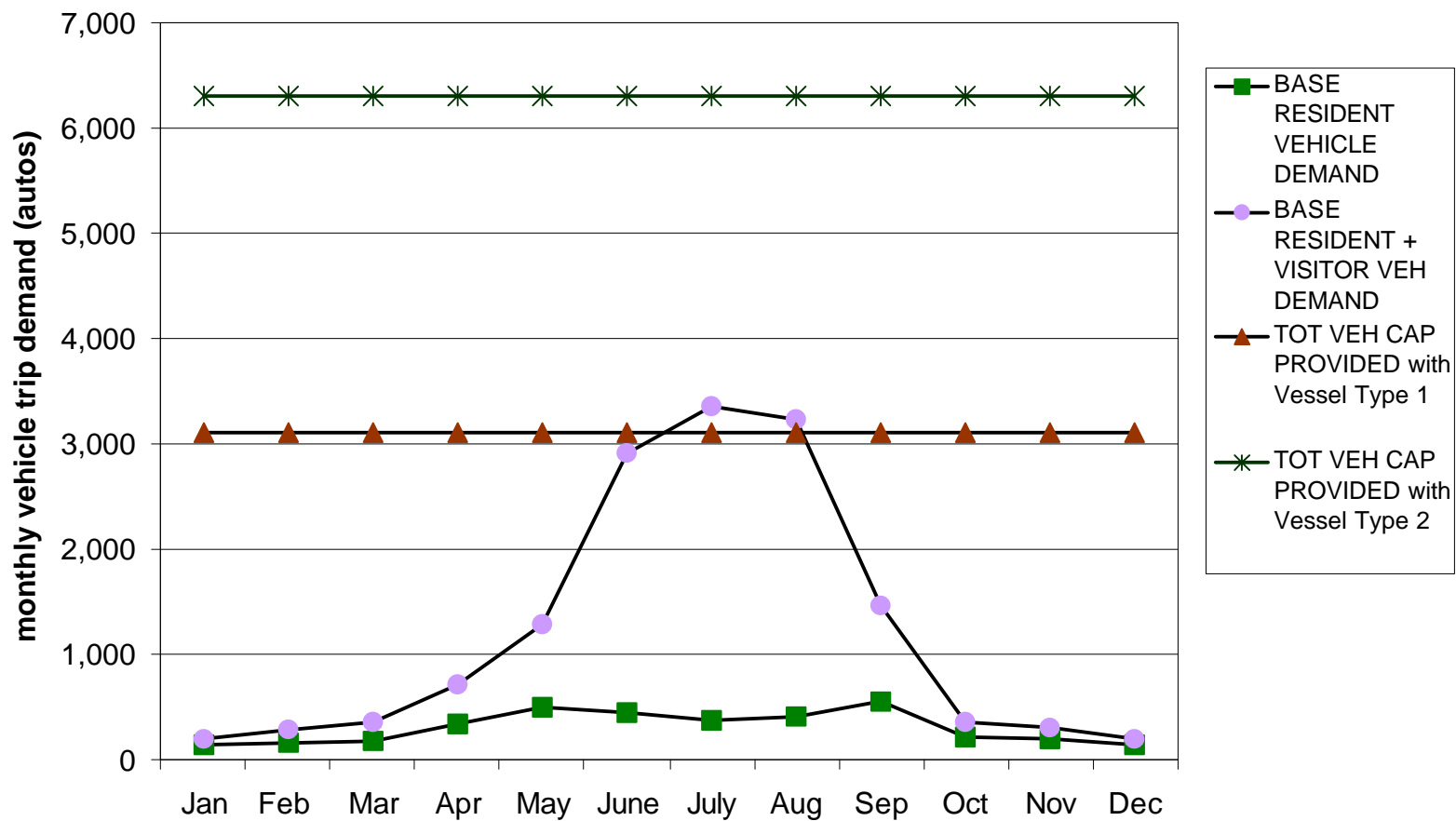
Alternative 2C: 2020 Vehicle Demand vs. Capacity Whittier



Alternative 2D: 2020 Vehicle Demand vs. Capacity Cordova



Alternative 2D: 2020 Vehicle Demand vs. Capacity Valdez



Alternative 2D: 2020 Vehicle Demand vs. Capacity Whittier

