Final Report

# SOUTH CENTRAL RAIL NETWORK COMMUTER STUDY AND OPERATION PLAN


Prepared for

**Alaska Railroad Corporation**

By

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January 15, 2002

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# South Central Rail Network
# Commuter Study and Operation Plan

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# Executive Summary
# SOUTH CENTRAL RAIL NETWORK COMMUTER STUDY AND OPERATION PLAN

## THE PURPOSE OF THIS REPORT

Commuter trips to Anchorage are getting longer. The reason is congestion. Each year, more people are living outside Anchorage and driving to Anchorage area workplaces. With more cars on the road, traffic flows slow, and trips take more time, both from the Matanuska – Susitna Valley (Mat-Su) in the north and from Girdwood in the south. In winter, darkness, snow, and ice combine with congestion to produce even lengthier commute trips.

The Alaska Railroad (ARRC) is a transportation resource that offers a solution. Implementation of a locally sponsored commuter rail service would enhance commuting alternatives. The rail route between Wasilla and Anchorage is being upgraded with straighter track, power switches, and state-of-the-art communication and signaling systems. All of these improvements translate to higher capacity on the route – capacity which could provide for a commuter rail service making the trip between Wasilla and downtown Anchorage in just over an hour in any season. Between Girdwood and Anchorage, right-of-way improvements that would occur concurrently with improvements to the Seward Highway could provide for rail trips of less than an hour.

The concept of a commuter rail service in Anchorage has been around for years. Previous studies have addressed the feasibility of such service. This study is fundamentally different. Its purpose is to provide a "blueprint" of how the service could be implemented. The questions central to the study are:

- Who might a commuter rail service appeal to?
- What needs to be constructed?
- Who will operate it?
- How much will it cost?
- Who will pay for it?
- How long will it take?
- What public agency will see the system from design to reality?

## HOW THE REPORT WAS DONE

The report has five elements.

1. Evaluation of the ridership potential and of service attributes important to commuters. Ridership is discussed in Chapter 1.

2. The operating and financial plan. The operating detail identifies schedules for the commuter trains, the rolling stock, and other capital improvements required. The financial detail compares operating costs with operating revenues, and determines the level of required subsidy, as shown in Chapter 2 on page 2-23.
3. Funding strategies to cover capital costs and operating subsidy requirements. These appear in Chapter 3.
4. Analysis of an appropriate type of multi-jurisdictional agency to sponsor the service. Examples of the various agency types appear in Chapter 4.
5. Identification of the next steps to move the concept of commuter rail toward reality. These steps are outlined in Chapter 5.

## Ridership Evaluation

Several studies over past 21 years estimated the ridership potential of commuter rail in the Anchorage area. This report first reviewed the earlier findings to evaluate how realistic their projections appeared. Second, the report performed an independent assessment of demand by using the experiences of other recent commuter rail start-ups as a guide. The assessment produced an estimated range in Mat-Su – Anchorage ridership of between 152,000 and 190,000 passenger trips in 2005, depending on the level of service offered; the range is in line with previous estimates. Ridership in 2015 would be 231,000, given a higher service level. A third step was to validate the assessment of the major market – the Anchorage-bound Mat-Su commuters – through a telephone survey of Mat-Su residents. The survey uncovered a great deal of interest in a commuter rail alternative, lending support to the ridership projections for both the near term and the long term.

The report conducted two focus groups of Mat-Su commuters in order to understand what Mat-Su commuters want out of their commuter rail service. Each focus group consisted of several participants. The service attributes that the commuters identified as desirable include several trains to accommodate flexible schedules, short commute time, and punctuality. To the degree practical, the operating plan in this report reflects the opinions expressed by these commuters.

## Operating and Financial Plan

With ridership evaluated, work began on crafting the operating and financial details. The analysis required the exploration of four alternative operational approaches, since they have a major bearing on costs. That is, while a multi-jurisdictional public agency would sponsor the service, either the Alaska Railroad or independent contractor could operate it. Also, trains could operate in Wasilla-only service or in Wasilla and Girdwood services combined. Accordingly, the study developed four different operating scenarios to test the alternatives. These were:

- Scenario A: Wasilla-only service, with ARRC train operators and maintenance of equipment (MOE) forces.
- Scenario B: Wasilla-only service, with independent contractor train operators and MOE forces.

- Scenario C: Wasilla and Girdwood services, with ARRC train operators and maintenance of equipment (MOE) forces.
- Scenario D: Wasilla and Girdwood services, with independent contractor train operators and MOE forces.

Each of these scenarios was costed, given assumptions on schedules, rolling stock, and capital improvements.

***Schedules:*** Two scheduling options were considered. One called for a Minimal Service Level focused on peak commute period service. The other, an Expanded Service Level, would offer peak and off-peak service. The study concluded that a Minimal Service Level would be more appropriate for start-up. As ridership builds over time, the service would move toward an Expanded Service Level.

***Rolling Stock Options:*** Similarly, various types of rolling stock for the service were evaluated. These included conventional locomotive-hauled bi-level commuter equipment deployed on comparatively recent commuter rail start-ups throughout in the United States and Canada, self-propelled Rail Diesel Cars (RDCs), a new self-propelled railcar type known as Diesel Multiple Units (DMUs), and other options. The study concluded that RDCs were most appropriate, given their operating flexibility. RDC were originally produced in the 1950s and 1960s. Those envisioned for the Anchorage commuter service would be "remanufactured," with new interiors and power systems so as to minimize maintenance costs.

***Transit Integration:*** Comments from Mat-Su commuters as well as the experience of other commuter rail services point to the need for efficient transfers to local transit and/or employer shuttles to move commuters from the trains to their workplaces. The study recommended that the commuter rail service sponsor initiate discussions with Anchorage and Mat-Su transit operators to see how services can be integrated. Also, the sponsor should initiate discussions with major employers or groups of employers to see if they might provide their own shuttle services to and from the trains.

***Revenues and Costs:*** Capital costs were based on the rolling stock and facility improvements required. For Scenarios A and B, these improvements included five stations and a car shop in Wasilla. For Scenarios C and D, the improvements include eight stations, the Wasilla car shop, an overnighting facility Girdwood, and right-of-way improvements south of Anchorage to Girdwood.

Revenues resulted from multiplying ridership by fare levels anticipated for the service. Operating costs were a function of hours of service for crews, miles traveled for train sets, passengers handled, and fixed costs anticipated. The comparison of revenues to operating costs produces a farebox recovery ratio – a primary measure of efficiency utilized by public transportation agencies. A start-up in 2005 was assumed for planning purposes. The ratio projected for Scenarios A and B in 2005 are near the level attained presently by Anchorage's transit provider, People Mover. The rail service's ratio will improve over time as ridership builds.

Cost and revenue data per the four service scenarios appear in Table ES-1 below. The calculations assume a Minimal Service Level, use of RDC rolling stock, and contingencies of 25 to 30 percent for capital improvements.

**Table ES-1**
**Commuter Rail Revenue and Costs in 2005**
**In Thousands of Year 2000 Dollars**

| | Scenario A | Scenario B | Scenario C | Scenario D |
|---|---|---|---|---|
| Capital Costs | 28,200 | 28,200 | 70,100 | 70,100 |
| Revenue | 603 | 603 | 640 | 640 |
| Operating Costs | 3,277 | 2,800 | 4,032 | 3,351 |
| Required Subsidy | (2,674) | (2,197) | (3,392) | (2,711) |
| Farebox Recovery Ratio | 18.4% | 21.5% | 15.9% | 19.1% |

Of the four, the study recommends either Scenario A or B for implementation. The recommendation is due to the scenarios' lower capital and operating costs, and their focus on the major commuter market, which is inbound to Anchorage from Mat-Su. Whether or not ARRC provides crews and MOE forces will depend on the railroad's ability to provide these forces on a price basis competitive with what an independent contractor can offer.

## Funding Strategies

A review of how other commuter rail services obtained funding to cover their initial capital costs and ongoing operating costs provided insight on how to obtain such funding for an Anchorage area commuter rail service. Based on this review, the following arrangements are recommended:

- Federal New Rail Starts discretionary funds should be considered for up to 50 percent of the initial capital cost of the commuter rail project.
- New or expanded state and local sources of funds should be pursued to provide funding matches to capital grants (initial capital funds and ongoing capital investments in the system), and to provide operating subsidies for ongoing operations and maintenance of the system.

## Management Structure

The management structures of nine commuter rail agencies throughout the U.S. were reviewed in order to understand the most appropriate type of multi-jurisdictional agency to sponsor an Anchorage area commuter rail service. Among others, the structures included special districts established through legislation and multimodal transit agencies offering bus, rail transit, and commuter rail services. This study recommends a Joint Powers Authority (JPA) as the most practical alternative. A JPA appears to require no special enabling legislation. Also, a JPA would provide the commuter rail focus that would enhance the potential for a successful implementation.

Several of the multi-jurisdictional agencies related how operating and capital costs, not covered by either fare revenue or state and federal sources, are shared among their members. How to

share these costs will be a primary concern of the Anchorage area commuter rail JPA members. A key finding of the review was that there appear to be as many ways to share such costs as there are multi-jurisdictional agencies. This is because the sharing arrangements have been products of negotiation, wherein each agency bargained according its own particular needs. A cost sharing arrangement among Anchorage rail JPA members also would be a unique product of negotiation.

### Next Steps

The critical first step in establishing a commuter rail service will be the formation of a multi-jurisdictional sponsoring agency, composed of the municipalities of Anchorage, Wasilla, Palmer, the Mat-Su Borough and potentially the Alaska Department of Transportation and Public Facilities. First among this organization's duties will be the formulation of a comprehensive funding plan that would detail the specific funds, the strategies to get those funds, and the timing of the spending leading to start-up of service. Second will be the hiring of agency staff to oversee the detailed engineering analysis, environmental assessments, station and car shop construction, rolling stock procurement, and other tasks required for the successful implementation of commuter rail.

## SUMMARY

Highway congestion during the morning and evening commute periods is commonplace and worsening. While improvements are planned, these will only forestall the day when motorists bound for Anchorage area workplaces consume the increased capacity. Against this backdrop, a locally sponsored commuter rail service could offer commuters a meaningful alternative to traffic jams and frazzled nerves.

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# CHAPTER HIGHLIGHTS

## CHAPTER 1: RIDERSHIP

- Several previous studies estimated ridership for an Anchorage area commuter rail service. Two studies projected ridership between 168,000 and 189,000 passenger trips per year for service between the Mat-Su Valley and Anchorage. Some of these studies also looked at ridership between Girdwood and Anchorage. Two of these studies identified both commute and recreational trip potential in that market.
- This study included an independent ridership forecast to evaluate the reasonableness of the previous studies. The forecast used the experience of recent commuter rail start-ups as a guide. The results identified a range of between 152,000 and 190,000 passenger trips in 2005 between the Mat-Su Valley and Anchorage, depending on the level of service. Ridership should increase to about 231,000 passenger trips in 2015, assuming a higher service level.
- Between Girdwood and Anchorage, there should be about 9,000 passenger trips in 2005. This estimate assumes Anchorage-oriented commute service only. This total should increase to 11,000 in 2015.
- The study conducted a survey of the potential riders in the Mat-Su Valley to assess interest in a commuter rail alternative. The survey uncovered a great deal of interest. However, the positive response has to be discounted to a degree in order to reflect the fact that many of those who indicated their interest in the service will not end up riding commuter trains for various reasons. Nevertheless, the survey results lend support to the ridership projected by this study.
- Potential riders were asked, through a focus group process, which commuter rail service attributes are important to them. Two focus groups were held, both consisting of several participants, who identified as desirable such things as several trains a day to accommodate flexible schedules, short commute time and punctuality, and express trains. To the extent practical, these attributes were incorporated in the commute service operating plan.

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# Chapter 1
# RIDERSHIP

## INTRODUCTION

A ridership forecast is the first step in planning a commuter rail service. Once potential ridership is identified, work can begin on figuring out how the service will operate: the schedules, rolling stock, engineering requirements, finances, funds sourcing, and management. Indeed, all of these subjects are dealt with in subsequent chapters of this study.

The purpose of this chapter revolves around four central tasks. First is to review the various estimates of potential commuter rail ridership in the Mat-Su – Anchorage and Girdwood – Anchorage rail corridors. The second is to present an independent assessment of ridership potential for the service start-up in Year 2005, as well as for 2015. Third is to validate the Mat-Su – Anchorage ridership estimate through a survey of Mat-Su commuters. And fourth is to identify what is important to the potential riders of the commuter rail system through analysis of surveys of other commuter rail systems and through focus groups of Mat-Su – Anchorage commuters.

Assuming a comparatively low level of service at start-up, an Anchorage area commuter rail service would likely gain a modest portion of commuter market share. Ridership should increase over time as populations grow and the rail service expands with more trains. However, to be effective in attracting riders, the operation will need to emphasize service attributes which are important to rail commuters in general.

## PREVIOUS RIDERSHIP ESTIMATES

Over the last 21 years, various attempts have been made to quantify the ridership potential for an Anchorage area commuter rail service. This analysis reviewed six studies. These were:

- *Feasibility Analysis of Upgraded Passenger Rail Service Anchorage to Nancy Lake and Anchorage to Whittier,* Executive Summary, Alan M. Voorhees & Associates Inc., May 1979
- *Feasibility Study for Commuter Rail Service from Anchorage to Matanuska – Susitna Borough*, Wilbur Smith Associates, February 1988
- *Girdwood Rail Service Feasibility Assessment*, Transport/Pacific Associates, February 1994
- *Market Analysis for ARRC Anchorage Alaska International Airport Rail Station*, Northern Economics Inc., July 1999
- *Commercial Areas Transportation Master Plan, Girdwood, Alaska*, Municipality of Anchorage, November 1999

- *Knik Arm (Alaska Regional Multimodal) Transportation Project: Access for Regional Economic Development (Draft)*, Northern Economics, March 2000; also Appendix C of the report's final version, July 2000

The evaluation of the studies' ridership estimates appears below in relation to corridor segments to which they pertain: Mat-Su Valley – Anchorage and Girdwood – Anchorage. At the outset, it should be noted that, practically speaking, ridership forecasting is more of an art than a science. There are various ways to achieve a reasonable estimate. In the end, however, actual ridership will depend on various factors which the forecaster can only guess at years before any realistic start-up date. Such unknowns include the size of the targeted commute market, driving conditions on parallel highways, land-use patterns, and even the degree to which the service is marketed. All the forecaster can do is to make assumptions on these factors and then to work methodically toward a ridership estimate that would be reasonable to expect. In evaluating these estimates, the reviewer should look to the assumptions and methodology and judge in the end if the previous efforts appear reasonable.

## MAT-SU – ANCHORAGE COMMUTER RIDERSHIP FORECASTS

Four of the studies above included forecasts for commuter rail ridership between the Mat-Su Valley and Anchorage.

### Anchorage to Nancy Lake Study, 1979

This study was not used for comparison purposes for three reasons. One, the basic service concept differed essentially from the service concept assumed in this analysis since it was premised on trains going to the then proposed state capital at Willow. Two, the study is more than 20 years old, and much has changed in the interim. Three, only the Executive Summary was available for review.

### Anchorage Commuter Rail, 1988

This study was performed by Wilbur Smith Associates (WSA). WSA followed three approaches to derive a ridership estimate. First, WSA reviewed the basic travel demand from the Mat-Su Valley to Anchorage, of which commuter rail would gain a share. Second, WSA reviewed existing transit services' patronage to understand the potential variance in ridership between winter and summer. Third, WSA compared its estimates with the 1979 Anchorage – Nancy Lake study, which utilized the same general methodology.

WSA estimated that with two morning peak trains inbound and two evening peak trains outbound and a 78-minute travel time between Wasilla and Anchorage, the commuter service could generate a potential ridership of 159,000 weekday passenger trips in 1990. This number was refined to approximate ridership assuming a wide range of future conditions, including population growth, fares, level of service, and the seasonal difference in summertime versus wintertime ridership. WSA's work resulted in a "base case" of 400 weekday one-way trips, or an annual ridership of about 100,000 at a $5 fare level in 1988 dollars. When adjusted for

inflation, the 1988 fare at $5 calculates to $7.13[1]; WSA concluded that commuter rail ridership demand was price elastic; ridership would rise or decline according to price.

Accounting for population and commuter growth from 1990 to 2005[2], this 100,000 annual ridership figure translates into an annual ridership of about 168,000. It should be noted that with the ongoing improvements in the Anchorage – Wasilla line, travel times will be reduced to just over one hour, from the 78 minutes assumed for this 1988 study. This trip time reduction would enhance the appeal of rail for commuters and therefore encourage ridership. As a result, the 168,000 yearly riders could be considered a minimum level.

## AIA Study, 1999

The 1999 *Market Analysis for ARRC Anchorage International Airport Rail Station (AIA Study)* developed a forecast for Mat-Su – Anchorage commuter service based on surveys of Mat-Su residents. The study was performed by Northern Economics Inc. (NEI), which estimated that at a $7.50 per-trip fare (in 1999 dollars), the rail service would generate 6,600 one-way "work traveler rail trips" per week in winter 2004. Like WSA, NEI concluded that demand was price elastic. Summer ridership would be 10 percent less. These numbers calculate to an annual ridership of 320,000 passengers. The calculation assumes winter conditions for two thirds of a year, and summer conditions for one third of a year. No specific assumptions about frequencies, travel time, or weekend service appeared in the report.

This ridership level is almost twice as large as that could be predicted from the 1988 study. Given that the Mat-Su population did not double during the intervening 11-year period between studies, the AIA estimate appears high. Indeed, NEI developed a substantially lower estimate in its Knik Arm study the following year.

## Knik Arm Study, 2000

This was the most recent of the various studies reviewed. Also performed by NEI, it explored commuter rail and ferry alternatives. The rail ridership forecasts were based on two sets of surveys of Mat-Su residents. One set was conducted for the Knik Arm study, and the other for the AIA study, which NEI also performed. In all, 402 surveys were used – 226 from the Knik Arm study and 176 from the AIA study. Of this total, 216 surveys were from adult Mat-Su commuters.

NEI's methodology consisted of using the surveys to determine a base population of *potential* commuter rail users. These would include those using the service for work and non-work purposes. The potential ridership would be that which could be expected given low fares and exceptional service levels. In other words, this would be service that would be too good to refuse. The base of potential riders was then modified downward given specific fare levels, travel time, frequency of service and destinations to arrive at an *estimated* ridership.

[1] Assuming a 3 percent inflation rate over the 12 years between studies, a $5 fare in 1988 dollars equates to a $7.13 fare in 2000 dollars.

[2] A Mat-Su annual growth rate of 3.5 percent was assumed.

In this study, NEI assumed a travel time from Wasilla or Palmer to Anchorage of 55 minutes. There would be three inbound trips at one-hour frequencies in the morning peak period, and three outbound trips during the evening peak. There also would be reduced off-peak service. There would be no weekend service. Ridership was based on Mat-Su population estimates for 2005. A one-way fare would be $7.40 in 2000 dollars – a level chosen to maximize revenue potential. (Lower fares would result in higher ridership, but less revenue). Given these parameters, NEI estimated ridership at 189,000 annual passengers. The forecast is 41 percent lower than ridership predicted by the AIA study.

NEI's methodology is logical, and its result is thorough in the way it utilized the available survey data. As ridership estimates are often over-optimistic, NEI's work appears reassuring. At the same time, it should be noted that the result rests on a small number of surveys which by itself leaves substantial uncertainty about the actual number of riders that could be expected. In a separate discussion, NEI reported that a sample size of 402 surveys will provide a confidence interval of plus or minus 4.9 percent. With a sample size of 226 (the number of surveys gathered from the Knik Arm study alone), the confidence interval becomes plus or minus 6.5 percent. With either number, ridership ranges widely.

To understand the range, it is necessary to study two key variables on which the analysis turns. One is the percent of respondents interested in rail for work purposes. The other is the percent interested for non-work purposes. These are 9.6 and 13 percent, respectively. With a confidence interval (which determines what is valid) of 4.9 percent, the 9.6 percent of respondents interested in rail for work purposes would actually be the midpoint of a range of 4.7 percent to 14.5 percent. The same would be true for the percentage of respondents interested in rail for non-work purposes.

As all subsequent numbers depend on these first two percentage figures, this logic would carry directly through NEI's methodology and result in an estimated ridership of between 93,000 to 285,000 annual passenger trips. The low end of the range would equate roughly to less than 200 peak-hour riders. This number is insufficient to justify commuter rail service. The high end of the range would result in roughly 570 peak-hour riders – a level that could support two or three peak hour trains.

The 189,000 annual trips is a valid number, but it is only the midpoint of a wide range, within which any number would be a valid number. A larger sample size would reduce the size of the confidence interval and result in a smaller degree of variation in the estimated ridership.

## GIRDWOOD – ANCHORAGE RIDERSHIP FORECASTS

Four studies included ridership estimates for a commuter rail service between Girdwood and Anchorage. As the Knik Arm study repeated the ridership estimated in the AIA study, it is not reviewed below. The Girdwood Master Plan also repeated figures for the Anchorage-bound commute cited in the AIA study, but estimated new "reverse commute market" for rail service to Girdwood from Anchorage.

## AIA Study, 1999

The 1999 AIA study developed a forecast for Girdwood – Anchorage commuter service based on surveys of Girdwood residents. The study estimated that at a $7.50 per-trip fare (in 1999 dollars), the rail service would generate 660 weekly work travel rail trips per winter in 2004. Summer weekly ridership would see 420 work trips. Total ridership would reach 29,000 for the year, or exactly 10 percent of the Mat-Su – Anchorage ridership. The calculation assumes winter conditions for two thirds of a year, and summer conditions for one third of a year. No specific assumptions about frequencies, travel time, or weekend service appeared in the report. NEI did not modify this estimate in its subsequent Knik Arm Study.

## Girdwood Master Plan, 1999

This study assumed the same Anchorage-bound ridership as was estimated for the AIA study. It also identified a "non resident commute ridership". This market includes Anchorage residents coming to Girdwood for ski resort and hotel jobs; this trend is also known as a "reverse commute". The estimate, based on employment cited in the 1997 *Girdwood Transportation Study*[3], totaled 180 one-way work trips daily. This translates to 90 round trips. The study also identified a weekend skier market with one or two round trips per day[4]. Wintertime weekend day ski ridership estimates of 500 to 1,000 one-way trips (or 250 to 500 round-trips[5]) were based on parking lot surveys. Other markets analyzed were for ridership generated by cruise and tour customers, as well as by Girdwood residents going to and from the international airport.

## Girdwood Rail Study, 1994

Prepared by Transport/Pacific Associates, the *Girdwood Rail Service Feasibility Assessment* developed forecasts for a Girdwood rail service based on a number of sources, including two previous surveys, price elasticity estimates, data from the Alyeska Prince Hotel, Dimond High School, and local transit. Based on a one-way fare of $5 and an 80-minute travel time, Anchorage-bound commuters would generate annual ridership in a range of 7,700 to 14,500. Adjusted for inflation, the fare rises to $5.97 in 2000 dollars. Assuming an historic Anchorage growth rate of 1.6 percent per year[6], the ridership range becomes 9,200 to 17,300 in 2005. Winter would have higher ridership than summer, spring and fall. The service would include weekend trains. Without weekend service, the annual range would calculate to 8,300 to 15,600 in 2005.

The study also noted various other potential markets that the Girdwood train could serve, which would drive overall ridership up significantly. These included:

- Employees bound for the Alyeska Ski Resort
- Students bound for Dimond High School
- Anchorage skiers bound for Girdwood

[3] *Girdwood Transportation Study*, TDA Inc, April 1997.

[4] This was the only market for which a service level was identified in the Master Plan.

[5] These figures were derived from an assumption of a train set with a capacity of 250 riders.

[6] Per the Municipality of Anchorage, Physical Planning Division.

- Anchorage visitors and recreationalists bound for Girdwood and points south

The study forecasted a ridership range of between 132 and 245 one-way trips per day on a winter weekday, presumably for 1994 (the year of the forecast was not clearly identified). Accounting for other seasons, annual ridership on the line would generate between about 45,000 and 80,000 one-way trips. Assuming Anchorage growth rates for the recent past, an update of the forecast to 2005 would result in a range from 54,000 to 95,000 annual riders.

The study's assumption that a large share of hotel employers, skiers and visitors from Anchorage would use commuter rail requiring an 80-minute travel time, as opposed to an auto trip of about 40 minutes, appears questionable. This is not to say the markets do not exist. Rather, the total that the study assumes would be attracted to rail service seems high.

## WSA ASSESSMENT 2000

The aforementioned studies dedicated substantial time and resources in developing their individual ridership estimates. This analysis provides an independent estimate for the basis of comparison with the previous ridership assessments. The analysis was performed in late 2000.

The methodology is as follows. First, the basic travel demand, or commute market, is identified. This is the commuter population projected to be moving between Mat-Su and Anchorage and between Girdwood and Anchorage in 2005, the planned start-up year. Second, market share which a commuter rail alternative is likely to earn is estimated based on the experience of other commuter rail operators. The market share, also known as the "capture rate", is subject to various realities such as transit time, weather conditions, parking conditions, fares, and highway congestion particular to the study area, i.e., the two commute corridors. Therefore, the capture rate must be modified to reflect Anchorage area realities. Third, the modified capture rates are then applied to the travel demand to estimate ridership.

WSA utilized variants of this basic methodology on at least four recent projects[7]. The ridership forecasts were accepted by clients as a valid methodology, as the methodology was based on the practical experience of existing commuter and transit agencies.

### Key Assumptions

The methodology is based on a number of assumptions. Some of the key assumptions include following:

- There are to be two possible service concepts and attendant commuter ridership estimates. A Minimal Service Level concept would focus on morning and evening peak commute periods. Alternatively, an Expanded Service Level would include reduced off-peak service, possibly including reverse commuters and weekend service to Girdwood.

[7] The four projects were: Sonoma Marin (Northern California) Commuter Rail Implementation Plan, 1999; Salt Lake City Light Rail Project, 1999; Nashville Light Rail Project, 1999; and Rochester Light Rail Project, 1998.

- Travel times will be just over an hour between Wasilla and Anchorage, and just under one hour between Girdwood and Anchorage. The latter will require a major track upgrade south of Anchorage, which will occur concurrently with the improvements of the Seward Highway.
- Station stops include Wasilla, Matanuska (at the Glenn / Parks Highway interchange), Eagle River, Elmendorf, Anchorage, Midtown at Spenard, Dimond Center, and Girdwood. There will be no airport station for commuter rail at start-up, as the stub-ended track configuration[8] there would delay trains disproportionally versus other stations. However, if the service were to operate exclusively between Wasilla and Anchorage, the airport station could provide a southern terminus. Doing so would not delay passengers bound for downtown and midtown destinations, and could improve travel times for commuters working at the airport who otherwise would transfer to a shuttle bus in Ship Creek.
- Potential riders will be willing to take shuttle buses or transit or walk to their work places. People Mover, the transit service in Anchorage, and major employers will provide schedule-coordinated transit/shuttle services from stations. Riders will tolerate up to a 20-minute shuttle ride from station to workplace[9]. All major Anchorage employment clusters are reachable in this time frame.
- The workplace distribution of Mat-Su, Eagle River, and Girdwood commuters will reflect the distribution of jobs in Anchorage. The distribution was determined by a review of Anchorage Traffic Analysis Zone (TAZ) data, which revealed six discrete Anchorage employment clusters (discussed below), excluding Eagle River.
- Commuter or peak-period ridership would account for 80 percent of total riders, and off-peak ridership would account for 20 percent of ridership.
- Fare levels will be typical of other commuter rail operations. These would compute to about $180 per month for discounted Mat-Su – Anchorage commute tickets, for example.
- As a result of more dangerous driving conditions in winter, ridership will be about 20 percent higher in winter than in summer.
- For the planning purposes of this study, start-up will be in 2005. The actual start date may be later.

## Travel Demand or Commute Market at Start-up

This is best described in terms of Mat-Su Valley and Eagle River to Anchorage, and Girdwood to Anchorage markets.

***Mat-Su Valley and Eagle River to Anchorage Commuters:*** According to the Alaska Department of Labor and Workforce Development, 8,000 persons commuted between Mat-Su to

[8] Stud-ended track terminates at a station. This requires trains to pull in and then back out of the station. By contrast, a through-track configuration allows a train to stop at a station and then continue its journey in the same direction.

[9] Survey responses gathered for the 2000 Knik Arm study indicated that most persons traveling to destinations other than downtown wished to reach those locations within about 15 or 20 minutes after arriving at a terminal.

Anchorage in 1999. By 2005, the planning year for the start-up of commuter rail service, commuters will total about 9,500. It is estimated that about 8,500 of these commuters will live within a 20-minute drive of a Mat-Su station (Wasilla at South Church Road or Matanuska at or near the Parks and Glenn Highways interchange)[10]. The remaining 1,000 would live predominantly north of Nancy Lake or Palmer. All of these commuters are potential commuter rail users.

Some commuters will come also from Eagle River. It appears that Eagle River's Anchorage-bound commuter movement volume is similar to Mat-Su's. This can be derived from a review of Average Annual Daily Traffic (AADT) figures for Mat-Su and Eagle River traffic to Anchorage[11]. Assuming a base of 8,000 commuters in 2000, and a historic Anchorage growth rate of 1.6 percent per year, there would be about 8,700 commuters by 2005. Rail's share of this total will be less than its share of Mat-Su commuters, because Eagle River's proximity to Anchorage employment centers will increase commuters' propensity to drive the relatively short distance.

***Girdwood to Anchorage Commuters:*** An estimated 750 persons will commute between Girdwood and Anchorage in 2005. The estimate is based on:

- A base population in 1996 of about 2,000[12].
- An estimated 62 percent of residents being of working age[13].
- An estimated 50 percent of working residents commuting to Anchorage[14].
- An annual growth rate of 1.6 percent.

***Workplace Distribution:*** Higher job concentrations in Anchorage are found in six areas that can be served by commuter rail with a coordinated bus shuttle. These are:

- Elmendorf Air Force Base/Fort Richardson (including the area north of the ARRC Ship Creek Station)
- Downtown (south of the ARRC Ship Creek Station)
- Midtown
- Ted Stevens International Airport
- Dimond Center
- Universities and hospitals area.

[10] Per Mat-Su Borough Traffic Analysis Zone (TAZ) figures for 2000, 92 percent of Mat-Su occupied households are within a 20-minute drive of Wasilla and Matanuska.

[11] Source: Alaska Department of Transportation and Public Facilities, a graphic updated 6/18/99.

[12] Per AIA Study, p.4-12.

[13] Percentage derived from AIA study, p. 4-12.

[14] Per Municipality of Anchorage, Physical Planning Division.

These clusters are broadly represented as shaded areas on Figure 1-1. About half of the total Anchorage employment is found in these areas. Commuters from Mat-Su, Eagle River, and Girdwood are expected to reflect this distribution of jobs. This translates to a universe of over 4,500 inbound Mat-Su and Eagle River commuters, and almost 400 inbound Girdwood commuters, who could use rail to and from their Anchorage workplaces.

## Capture Rates

With the universe of potential riders identified, the next task is to determine the percentages of these riders that might actually be attracted to the rail service. These percentages are the capture rates. To understand what rates to apply, three commuter rail operators were consulted[15]. These included the Los Angeles Metrolink service, the San Joaquin Valley to Silicon Valley Altamont Commuter Express (ACE) service, and the West Coast Express service in Vancouver, British Columbia. These are operations with service levels that are similar to the two service concepts assumed for Anchorage commuter rail. Accordingly, their experience with regard to capture rates would be relevant. A synthesis of their comments revealed capture rates of between 3 percent (per ACE) and 10 percent (per West Coast Express), depending on various factors. These include total travel time savings, service levels, highway congestion, the proximity to stations of major employers, the cost of parking, the availability of convenient transfers to shuttle or transit, and the weather. But primary among these was the length of commute. This is because people generally appear willing to tolerate transfers from car to train and train to shuttle bus more for longer trips than they do for shorter trips.

***Ridership Calculation for Mat-Su – Anchorage Service:*** It is reasonable to assume that trips from Mat-Su to Anchorage could achieve a mileage-based capture rate at best of 3 to 7 percent for Mat-Su commuters, and under 2 percent for Eagle River commuters. The variances depends on such factors as:

- A high concentration of jobs and major employers within walking distance (approximately 0.5 miles) of a station.
- A high concentration of jobs/major employers for which shuttle services would be convenient (within approximately 2 to 5 miles).
- Traffic congestion affecting travel times by car.
- Snowy and dark wintry conditions making driving dangerous.
- The length of the commute.

A capture rate higher than 7 percent for Mat-Su commuters would be unlikely as traffic congestion will be mitigated by planned highway improvements for the Glenn Highway at 5th Avenue (an expansion is planned for 2004 in advance of the rail start-up). Also, parking is inexpensive or free in much of Anchorage except downtown. Given Eagle River's proximity to Anchorage, a 2 percent maximum would be expected.

[15] Ideally, experiences from other Alaska communities would be used to derive capture rates and typical travel patterns. However, there are no other Alaska examples. Accordingly, West Coast commuter operations were consulted to estimate realistic capture rates.

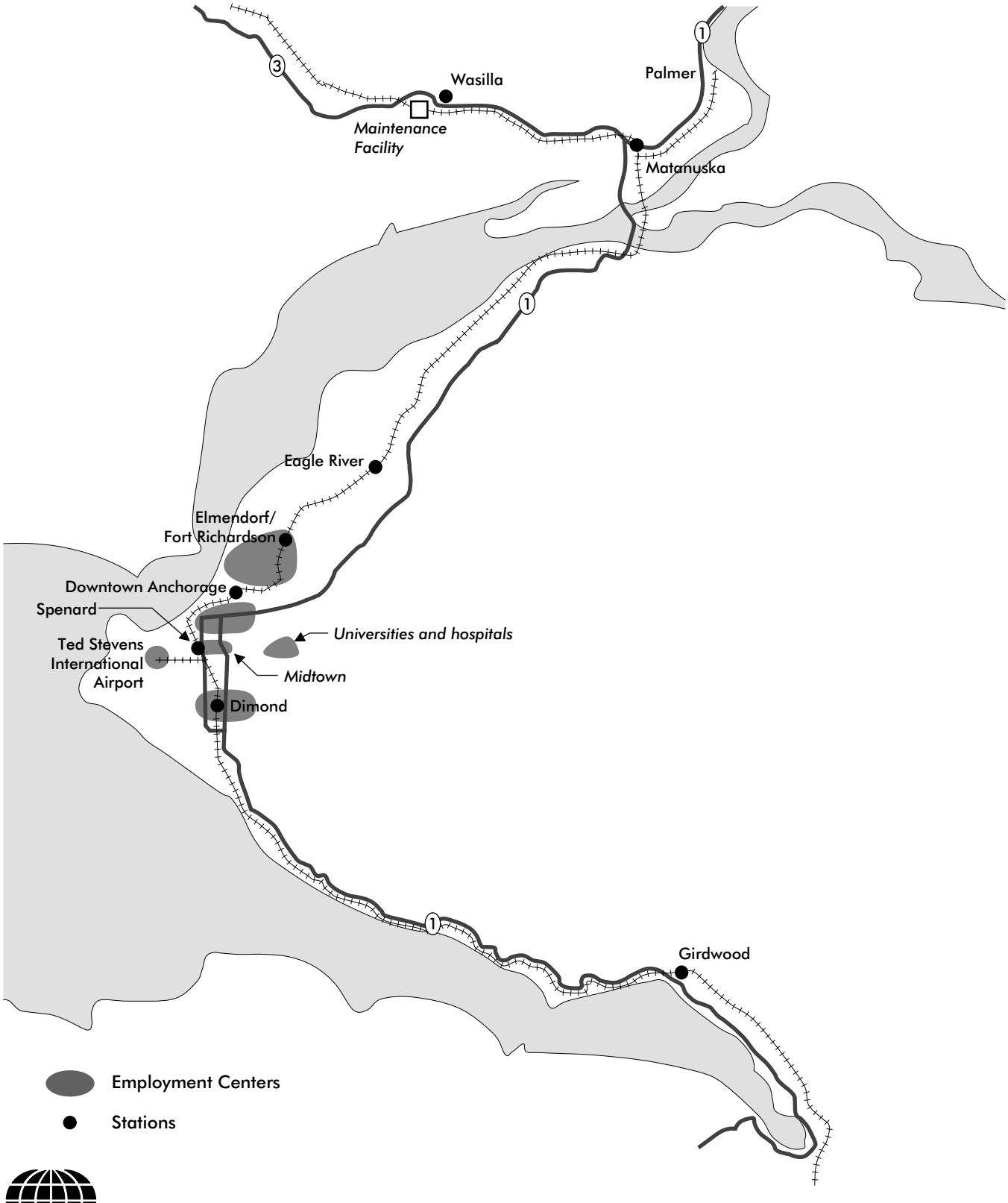


Figure 1-1

**PROPOSED RAIL COMMUTE STATIONS**

WILBUR SMITH ASSOCIATES

354570-BASE-5/31/2001

Downtown will have the highest capture rates, as it will be the terminus, and commuters bound for downtown destinations could either walk or take a short shuttle ride. The airport, midtown and the universities/hospitals areas are all further out, and the longer shuttle rides likely will prove a disincentive for riders there. The calculations using these capture rates to determine likely winter and summer weekday commuter totals appear in Appendix Table A-1. These daily totals are aggregated into annual totals in Table 1-1 below, and are rounded to the nearest thousand. While there are some Anchorage residents working in Mat-Su, their numbers compared to the predominant flow southbound are small. Potential rail shares of this reverse commute population would be small as well. Accordingly, they are not included in the table below.

**Table 1-1**
**Mat-Su – Anchorage Rail Service Annual Ridership for 2005**

| | Round trips | One-way trips | Adjusted One-way trips |
|---|---|---|---|
| Summer weekday peak trips | 24,000 | 49,000 | 44,000 |
| Summer weekday off-peak trips | 6,000 | 12,000 | 11,000 |
| Winter weekday peak trips | 60,000 | 120,000 | 108,000 |
| Winter weekday off-peak trips | 15,000 | 30,000 | 27,000 |
| Total Trips | 105,000 | 211,000 | 190,000 |

Round trips account for the actual riders estimated. One-way trips account for the maximum number of one-way trips each rider may make (two). This maximum number is then adjusted downward 10 percent to account for such things as vacations, personal days, sick days, four-day work week patterns, and days when commuters just choose to use other options. The annualized number is 190,000 for an Expanded Service Level concept, including reduced off-peak trains. Alternatively, if trains ran on a Minimal Service Level focused on the peak morning and evening peak periods exclusively, 2005 ridership should be about 152,000.

***Ridership Calculation for Girdwood to Anchorage Service:*** Even with a rail travel time of 57 minutes, a Girdwood – Anchorage rail trip will be less competitive with a car trip than a Mat-Su – Anchorage rail travel time. This is because the highway improvements that will provide this 57-minute travel time (it is now about 80 minutes) will also lower travel times and enhance safety for automobiles on the route. As a rule, therefore, capture rates should be lower than those predicted for Mat-Su – Anchorage.

Riders going to the Dimond Center could walk from the station, which would be adjacent to the shopping facility. As a result, capture rates there should be about 5 to 6 percent. Riders bound for airport, the universities/hospitals areas, Elmendorf and Midtown work locations will transfer to shuttles, which will depart from a Midtown station at Spenard and Northern Lights. As their commutes involve a transfer, capture rates to these locations are somewhat lower. Riders going downtown will also need shuttles, but these shuttle rides will be shorter than shuttle rides of midtown commuters. Also, some riders may desire to walk during summer months. As a consequence, the capture rate for downtown-bound commuters is the same as for Dimond

Center-bound commuters. The calculations using these capture rates to determine likely winter and summer weekday commuter totals appear in Appendix Table A-2.

Table 1-2 summarizes ridership estimates for the Girdwood – Anchorage service, given an Expanded Service Level concept. The table is more complex than Table 1-1, because the Girdwood – Anchorage service seeks to serve more markets than the Mat-Su – Anchorage service. These markets include outbound peak-period riders, or reverse commuters, i.e., Girdwood hotel and ski resort employees from Anchorage. Outbound off-peak riders would include skiers and Anchorage recreationalists. The table also includes weekend service for Girdwood resort employees and recreationalists; no weekend service is assumed for Mat-Su – Anchorage other the "dead head" moves, non-revenue trips to position train sets. Inbound weekend riders would include high school students bound for sporting events, practice or special study in Anchorage. In the table, ridership totals are rounded to the nearest 100.

**Table 1-2**
**Girdwood – Anchorage Rail Service Annual Ridership for 2005**

| | Round trips | One-way trips | Adjusted one-way trips |
|---|---|---|---|
| Summer weekday inbound peak trips | 1,400 | 2,700 | 2,400 |
| Summer weekday inbound off-peak trips | 300 | 700 | 600 |
| Summer weekday outbound peak trips | 2,700 | 5,400 | 4,800 |
| Summer weekday outbound peak off-peak | 2,100 | 4,100 | 3,700 |
| Winter weekday inbound peak trips | 3,600 | 7,300 | 6,600 |
| Winter weekday inbound off-peak trips | 900 | 1,800 | 1,600 |
| Winter weekday outbound peak trips | 4,600 | 9,200 | 8,300 |
| Winter weekday outbound off-peak trips | 2,300 | 4,600 | 4,100 |
| Summer weekend inbound peak | 100 | 100 | 100 |
| Summer weekend outbound peak trips | 1,100 | 2,200 | 2,000 |
| Summer weekend outbound off-peak trips | 900 | 1,900 | 1,700 |
| Winter weekend inbound peak | 100 | 300 | 200 |
| Winter weekend outbound peak trips | 1,900 | 3,800 | 3,400 |
| Winter weekend outbound off-peak trips | 1,500 | 3,100 | 2,800 |
| Total | 23,500 | 47,100 | 42,300 |

A review of the table makes it clear that the Girdwood – Anchorage service would require numerous trains to generate a ridership less than a quarter the size of that forecasts for Mat-Su – Anchorage service. But cutting back on trains would eliminate the service's utility for some markets and thereby lower ridership. For example, a Minimal Service Level of one round-trip a day leaving Girdwood in the morning and returning to Girdwood in the evening, weekdays only, would generate about 9,000 passenger trips a year.

## RIDERSHIP COMPARISON

The attempt below is to provide, as far as possible, an apples-to-apples comparison of ridership estimates. The four studies that estimated Mat-Su – Anchorage ridership appear in Table 1-3.

With the exception of the AIA study, the figures are relatively close to each other, falling in a range of 168,000 to 190,000 riders per year. And the Knik Arm study's 189,000 is in effect a revision of the AIA study's figure, as both studies were performed by NEI. It is true that key factors vary. These include fare levels and travel times. Still, it would appear safe to say that the range of 168,000 to 190,000 passenger trips per year for a Mat-Su – Anchorage service, assuming an Expanded Service Level, is a reasonable estimate, and that 152,000 to 168,000 passenger trips for a Minimal Service Level is also reasonable.

**Table 1-3**
**Mat-Su to Anchorage Ridership**

| Study | Travel Time in Minutes | One-way Fare | Annual Riders (in year) |
|---|---|---|---|
| Anchorage commuter rail, 1988 | 78 | $7.13 | 168,000 (2005) |
| AIA study, 1999 | N/A | $7.50 | 320,000 (2004) |
| Knik Arm study, 2000 | 55 | $7.40 | 189,000 (2005) |
| WSA assessment, 2000 | 66 | $4.50 | 190,000 (2005) |

Note: (1) AIA study's fare level stated in 1999 dollars. All others stated in or adjusted to 2000 dollars.
(2) Assuming "peak period" only service, the WSA 2000 assessment estimated ridership at 152,000 passengers per year.
(3) Anchorage commuter rail study's 1988 ridership estimate is adjusted for population growth to 2005.
(4) Weekday Anchorage-bound ridership only is assumed.

Three studies provide figures that allow comparison of Girdwood – Anchorage ridership. These appear in Table 1-4 below. The attempt here is to cite the ridership that would be generated only by Girdwood residents going to Anchorage, as the AIA study did not estimate reverse commute markets. While the AIA study's estimate appears high, the Girdwood rail study and the WSA's 2000 assessment performed for this study are reasonably consistent. It would appear safe to say, then, that ridership in a range of 8,000 to 16,000 riders per year could be expected for this market.

**Table 1-4**
**Girdwood to Anchorage Ridership**

| Study | Travel Time in Minutes | One-way Fare | Annual Riders (in year) |
|---|---|---|---|
| AIA study, 1999 | N/A | $7.50 | 29,000 (2004) |
| Girdwood rail study, 1994 | 80 | $5.97 | 8,300-15,600 (2005) |
| WSA assessment, 2000 | 57 | $4.00 | 9,000 (2005) |

Note: (1) AIA study's fare level stated in 1999 dollars. All others stated in or adjusted to 2000 dollars.
(2) Girdwood rail study's 1994 ridership estimates is adjusted for population growth to 2005.
(3) Weekday Anchorage-bound ridership only is assumed.

## RIDERSHIP TO 2015

Ridership will grow for the following reasons. First, jobs in Anchorage (including Eagle River) will grow at about 1 percent over the period[16]. Second, the trend of Anchorage employees living in Mat-Su will continue over the period, as new housing stock in Anchorage will be in decreasing supply. Third, outer year rail service likely will have higher service levels as compared to start-up. There will be more trains, offering greater commuting and non-work trip convenience. As a result, more people will be attracted to a rail alternative.

For comparative purposes, a conservative 2 percent annual growth rate (a rate higher than Anchorage's historic 1.6 annual growth rate but lower than Mat-Su's 3.5 percent annual growth rate) provides for more than 231,000 Mat-Su – Anchorage passenger trips in 2015, assuming a base of 190,000 passenger trips in 2005. A similar rate would generate 11,000 Girdwood – Anchorage passenger trips (generated by Anchorage-bound Girdwood riders only) in 2015, up from a base of 9,000 in 2005.

Ridership for new commuter rail services elsewhere has enjoyed substantially higher annual growth rates. For example, in the 1997-1998 fiscal year, two comparatively new commuter rail services – The Coaster in San Diego and Metrolink in Los Angeles – had growth of greater than 13 percent. Spurring this success is the realization by erstwhile drivers that commuter rail operating on a parallel route provides a viable alternative to the congested freeways. Complaints of roadway congestion lengthening work trips are also heard far to the north in Anchorage.

Also encouraging commuter rail ridership are Transit-Oriented Development (TOD) projects. TOD is traditionally defined as development taking place within ¼ to ½ mile of a transit station. San Mateo County Transit District (SamTrans) on the San Francisco Peninsula, which administers the Caltrain commuter rail service, has been involved several TOD projects along the 77-mile Caltrain route. These include parking lots, mixed use development, and bus-rail transit hubs. An outcome has been to lure people out of cars and on to transit, including commuter rail. Conceivably, TOD in Mat-Su and Anchorage could work the same way. Applications could include mixed use developments at all stations, but particularly in Anchorage and Wasilla.

## SURVEY OF MAT-SU COMMUTERS

As the Mat-Su – Anchorage commuters comprise by far the larger market, the study included a survey of Mat-Su residents who commute to Anchorage. The purpose of the survey was to identify how many riders would be interested in using the rail service. The survey was performed by Craciun Research Group (CRG), of Anchorage.

Between January 2 and 20 of this year, CRG contacted through a telephone interview process 1,502 Mat-Su residents to assess interest in a commuter service between the Mat-Su Valley and downtown Anchorage. CRG outlined one service level concept to the contacts. The concept

[16] Based on a review of Anchorage TAZ employment forecasts for 2003 and 2023.

specified that there would be two trains weekdays departing Wasilla between 6 and 7 a.m., and returning between 5 and 6 p.m. There would be no weekend service.

Of the 1,502 residents contacted, 418 are commuters who work or go to school in Anchorage. Three hundred of them travel 5 days a week, while 262 work regular hours (not rotating shifts). Of the 262, 179 begin and end their work in the periods close to train arrival and departure times, and have Saturday and Sundays off. Of these 179, 34.1 percent, or 61 commuters, said that they would use the train every time or most times.

As noted previously, the Alaska Department of Labor and Workplace Development (ADOL/WPD) estimated that about 8,000 people in 1999 made the daily commute from Mat-Su to Anchorage. For 2001, ADOL/WPD estimated 8,500 commuters, which is 20 times the number of 418 Anchorage-bound commuters identified in the survey. It is logical, therefore, to increase the 61 commuters by a factor of about 20 in order to conceptualize the number of Anchorage-bound Mat-Su commuters who would be interested in taking the train every time or most times. This number calculates to 1,168 commuters. Using the ADOL/WPD growth rates for these commuters, this figure will rise to 1,387 in 2005. The relationships of the sample sizes to total Mat-Su populations appear in Table 1-5 below.

**Table 1-5**
**Mat-Su Commuters**
**Sample and Total Populations**
**2001 vs. 2005**

| Mat-Su Residents | 2001 Sample Pop. | 2001 Total Pop. | 2005 Total Pop. |
|---|---|---|---|
| Commuters to Anchorage | 418 | 8,500 | 9,500 |
| Commuters in peak-period commute pattern | 179 | 3,426 | 4,068 |
| Commuters interested in train every day or most days | 61 | 1,240 | 1,387 |
| Population 18 and over | 1,502 | 28,746 | 34,136 |

Note: (1) Total commute populations based on ADOL / WPD estimates.
(2) Peak commute period trips begin between 6 and 7 a.m. and 5 to 6 p.m. and fit the train schedules.
(3) Mat-Su Borough populations 18 or over are estimates driven by survey results and ADOL/WPD commuter estimates.

The 1,387 peak-period commuter figure is the midpoint of a range, given that there is a 7.2 percent margin of error for the sample size of people (179) who fit the commute pattern. Still, the 1,387 figure is more than five times that calculated by WSA's 2000 projection, given the service level described above. According to Table 1-3, there would be about 152,000 annual riders for a peak-period, weekday-only service, or just over 300 average daily riders in 2005; 82 percent of these, or about 250 riders, would originate their trips in Mat-Su, and 18 percent in Eagle River. However, for a meaningful comparison, the 1,387 figure must be modified downward for several reasons. Remembering that the 1,387 commuter figure has its basis in the 61 survey respondents who said that they would be willing to take the train every or most times for their commute trips, it is fair to say:

- Not all the commuters who say they will ride trains will actually become regular train riders. One reason is that survey respondents sometimes opt to tell the interviewer what they think the interviewer wants to hear, rather than replying in a way that reflects the reality of their commuting patterns, and the reasons behind them.
- Not all these riders will work in areas for which there will be convenient shuttle connections. According to the CRG survey, 57 of the 61 respondents said that they work in the six work clusters that would be served by shuttles. However, in its 2000 assessment, WSA assumed that the Mat-Su commuters would have the same Anchorage workplace dispersion as Anchorage residents. About half of these work in the six clusters. The variation likely is due to the narrowness of WSA's definition of the workplace cluster geography (determined by TAZs), which would have served to minimize the estimate of Mat-Su commuters who would be eligible candidates for commuter rail/shuttle service. On the other hand, survey contacts were not given the precise geographic definitions of the clusters and therefore likely interpreted them broadly. As a result, many of the 57 would really not be eligible candidates for a commuter rail/shuttle service.
- Some of the respondents said that they need a car for work in Anchorage. Therefore, they are more likely to continue driving than to ride the train – unless they would be willing to keep a vehicle convenient to the downtown Anchorage depot at an additional expense.
- Others identified having to work overtime as a hindrance to taking the train. These riders cannot be counted on, for, should they work overtime, they would have no way to get back home.
- Still others presently drive with others, and may have obligations to keep doing so – obligations that may be difficult to back away from.
- 38 of the 61 respondents have not used public transit before, and 26 have not lived where there was good, reasonable public transport. It seems unreasonable to expect that those who have never been exposed to good transit options would decide to use it in Southern Alaska.

All of these factors would serve to reduce the 1,387 figure. It is worth noting that 1,387 commuters would amount to about 15 percent of the 9,500 Mat-Su – Anchorage commuters estimated for 2005. Such a percentage is not consistent with the experience of other new commuter rail services on the West Coast which report capture rates of 10 percent or less. On the other hand, the WSA 2000 estimate for such a service level calculates to a capture rate of about 3 percent, which is consistent with the experience of other services with a comparatively low level of service. It appears, therefore, that the WSA 2000 estimate is a conservative but reasonable estimate for a Minimal Service Level for commuter rail between Mat-Su and Anchorage.

A summary of the CRG survey results appears in Appendix B.

## SERVICE ATTRIBUTES IMPORTANT TO RAIL COMMUTERS

To understand what is important to riders of a future Anchorage area commuter system, reviewing rider surveys of other commuter rail systems is helpful. It is fair to assume that what is important for a commuter in Chicago or Los Angeles may be of importance to commuters in Anchorage also. After all, commuters everywhere share a concern about getting to work safely and on time. Accordingly, recent rider surveys from two commuter rail systems appear below. The attempt is to portray those service attributes that are most important there, and, by analogy, to future Anchorage rail commuters.

### Commute Riders Surveys

***Metra:*** Metra is the commuter rail service handling more than 300,000 riders in the Chicago area on weekdays. Metra management surveys its riders every few years. The last "on-board" survey (riders being asked on the train for their comments) was completed in 1999. The one before it was in 1996. Among other things, the riders were asked to rank what is most important to them in terms of the attributes of their commuter rail system. The results appear below, contrasted with the 1996 results. Not surprisingly for riders heading to work, getting to the station on time topped the list for both years.

**Table 1-6**
**Metra Riders' Importance Ratings**
**1996 and 1999 Comparisons**

| Service Attribute | 1999 Ranking | 1999 % Mentions | 1996 Ranking[17] |
|---|---|---|---|
| Getting to the destination on time | 1 | 63% | 1 |
| Frequency of weekday rush hour service | 2 | 32% | N/A |
| Value for your money | 3 | 28% | 6 |
| Getting to the destination quickly | 4 | 23% | 5 |
| Availability of seats on the train | 5 | 20% | 7 |
| Availability of parking at the boarding station | 6 | 20% | 11 |
| Frequency of non-rush hour service | 7 | 16% | 10 |
| Personal safety at the boarding station | 8 | 15% | 4 |
| On-train communication of service interruptions | 9 | 12% | 16 |
| Communication of service interruptions at the boarding station | 10 | 11% | 14 |

***Metrolink:*** Metrolink is the commuter rail service handling about 32,000 passengers on weekdays in the Los Angeles area. Metrolink also conducts on-board surveys. The last survey was in 2000 and before that in 1997. Here also, on-time arrivals top the list for both years. Cleanliness of the train interior was also rated as comparatively more important than other attributes. This did not make the top 10 list in Chicago.

[17] The 1996 ranking is included to show changes in commuter opinions over a three-year period. Some questions asked in 1996 were not repeated in 1999, which accounts for the not applicable (N/A) designation for seating availability. Metra did not provide the full results for 1996, nor did Metrolink provide the 1997 results.

**Table 1-7**
**Metrolink Riders' Importance Ratings**
**1997 and 2000 Comparisons**

| Service Attribute | 2000 | 1997 |
|---|---|---|
| On-time arrivals | 1 | 1 |
| Seating availability on train | 2 | N/A |
| Cleanliness of train interior | 3 | 2 |
| Comfort of seating on train | 4 | 6 |
| Frequency of early morning trains | 5 | 4 |
| Security of parking lot | 6 | 3 |
| Travel time vs. car | 7 | N/A |
| Parking availability | 8 | N/A |
| Cost of parking | 9 | N/A |
| Frequency of late evening trains | 10 | 5 |
| Connecting transit | 11 | 7 |
| Frequency of mid-day trains | 12 | 8 |
| Seating availability at station | 13 | N/A |
| Frequency of weekend trains | 14 | N/A |

## FOCUS GROUPS

The majority of riders on any commute service serving the Anchorage area will be Mat-Su Valley residents making home-to-work trips in the morning and work-to-home trips in the evening. Assuming the service begins in 2005, these riders then will face a choice of using the rail commute service or continuing to drive. They will make this choice based on a combination of perceptions about the service that typically involves convenience, travel time savings, reliability, and economy, among other things. To understand more precisely what Mat-Su commuters think about a commuter rail alternative, this study commissioned a focus group effort, wherein two groups of Mat-Su commuters offered their comments on the Anchorage area commuter rail concept in response to a moderator's questioning and probing.

The two focus groups were held January 30 and February 1, 2001 at Craciun Research Group's Focus Group Facility in Anchorage. The two groups were comprised of Mat-Su residents who were identified by a screening process as fitting the profile of regular commuters who worked in the selected cluster areas in Anchorage and who had indicated interest in commuting by train within the specified timeframes. The focus groups explored more fully the attitudes and opinions of these commuters toward the commuter rail proposal.

The following report analyzes and summarizes the opinions of the two groups. While the service concept, which is detailed in Chapter 2 in terms of schedule and rolling stock options, does not conform in every respect to the comments appearing below, it does address the major items, i.e., simplicity and car competitive travel times. With 45-minute frequencies, trains making all stops, and transit integration, the service is simple for riders to understand. Also, travel times from Wasilla to Ship Creek of just over an hour compare favorably with peak period auto travel, particularly in winter.

However, at $180 per month for discounted Mat-Su – Anchorage commuter rail tickets not including transfers to transit, the expense is higher than the focus group participants would prefer. At the same time, this fare level of $0.10 per passenger-mile is comparable with what other commuter rail agencies are charging. For example, The Coaster in San Diego and Caltrain on the San Francisco Peninsula both charged $0.10 per passenger mile in the 1997-98 fiscal year; the Los Angeles Metrolink system charged $0.12 per passenger mile for the period, while the Dallas – Fort Worth Trinity Rail Express charged $0.13[18].

## Keep It Simple

Members of the focus groups emphasized the need for simplicity in design, planning, execution, and marketing for rail commuting between the Mat-Su Valley and Anchorage. They said their minimum requirements are three trains to Anchorage in the morning and four to the Valley in the evening. The trains must be punctual. They want at least one and preferably two fast express trains that go non-stop between the Parks and Glenn Highway Interchange and Anchorage. They need secure parking at both locations, reliable and quick shuttles in Anchorage, and cost effectiveness for the riders. The focus group participants also requested that Valley residents be informed about the commuter rail service in a realistic and simple format.

***Several Trains to Accommodate Flexible Schedules of Commuters:*** The participants of the focus groups observed that Alaskan commuters have a wide range of work schedules. They want the service to include three or four trains in the morning and evening to accommodate the flexible schedules of commuters. They generally agree that morning trains should leave from Wasilla at 6, 7, and 8 a.m. Evening trains should leave Anchorage at 3, 4, 5, and 6 p.m.

***Short Commute Time and Punctuality:*** The focus group participants were adamant about the necessity for quick trains, because they have additional travel time at each end. If total commute time is longer when they take the train, they are more likely to drive their vehicles. They want trains to leave exactly on time, not late and not early.

***Express Trains:*** Valley residents in our groups do not want the trains to stop at Eagle River or Elmendorf because stopping would make their commutes too long. They suggested that one or two express trains be established that leave from the Parks and Glenn Highway interchange and go straight through to Anchorage with no intervening stops. One member suggested that if the commuter rail service decides to have one of the trains originate in Palmer and stop in Wasilla, then that should be the train that also stops in Eagle River and Elmendorf.

***Secure Parking at Both Locations with Ease of Exits:*** The members of the Mat-Su Valley residents focus groups feel that the commuter rail service should provide secured parking lots at both ends of the commute, one at the Parks and Glenn Highway interchange and another at the Anchorage depot. "Secure" for them means well lit with plenty of visibility, security guards or troopers who check on the cars, and possibly a fence to deter vandalism. The moderator probed for real vandalism concerns and both groups agreed it was on the rise. Covered parking and plug-ins are not necessary, because they do not want to increase costs and their fares. Open parking lots make it easier to spot vandals. While a few said that it would be nice if there were

[18] *Fast Forward: A Strategic Business Plan*, North County Transit District, November 1999.

plug-ins, most were more concerned about the increase in costs. Easy exit from the lots is important, as commuters do not want to be hung up with traffic jams as they attempt to drive out at the same time.

***Reliable and Quick Shuttles:*** Members of the focus groups were spontaneous in their desire for special bus service in Anchorage to get them from the train to central locations throughout the city and to their workplaces. They eagerly accepted the possibility that "mini-express" shuttle buses will be available to them at the train depot in Anchorage to take them quickly to a variety of centrally located drop-off places, such as the Sixth Avenue bus station.

***Cost Effectiveness for Riders:*** Members of the focus groups report that they are putting approximately 30,000 miles on their vehicles per year for the commute or 100 miles per day, and their expenses for commuting are between $100 and $250 per month. They expect that fares for the train and shuttles will be less than their current expenses. They thought they might pay between $70 to $150 per month for train tickets. They would prefer to buy their tickets on a monthly basis.

***Suggestions for Getting Valley Residents to Try the Service:*** Members of the focus groups spontaneously offered suggestions for marketing rail service to commuters. They suggested that advertising should be realistic and clearly stated. A big selling point is that commuting by rail will be simple and cost effective for riders. The groups' members agreed that the system should be working perfectly from the first day of service. Commuters will evaluate it and tell others immediately, especially if their experiences are negative.

## Amenities Secondary to Low Fares

The focus groups participants were concerned with keeping the fares low by avoiding expensive amenities. They want the train to be clean. Amenities they would like are coffee and newspapers available for purchase; spacious and comfortable seats suitable for sleeping; clean restrooms; a place to stow large items such as skis, bikes, and mopeds; overhead racks for smaller items such as bulky winter clothing; and a quiet ride for sleeping and reading. Although one responded that a computer hookup "would be nice," he agreed with the others that keeping fares low is more important. Furthermore, they expect the trip to take between 45 and 60 minutes, which they perceive as too short to interface with the Internet. (Computer hook-ups on trains are used to power laptops. Current technology permits wireless access to the Internet from a multiplicity of locations, even aboard a moving train.)

## Taking Cars and Pickups on the Train

***January 30th Focus Group:*** Members of the January 30th focus group agreed that a viable solution to needing one's own vehicle in Anchorage is to take it on the train. They decided that this was feasible for those who are not able to utilize the shuttles, such as sales people who need their own vehicles to call on customers. They suggested that the system could be efficient, as it was for the passenger train that serviced Whittier by carrying vehicles on train flatcars. The auto passengers would remain in their vehicles for the train trip, and they would be loaded on first and off last. They also mentioned the efficiency of ferries that take on vehicles.

The members of this focus group discussed the possibility that a train so burdened may not be able to get enough speed to make the trip from Wasilla to Anchorage in a timely manner (45 minutes for this group). So they suggested that only one train each way per day would carry cars or pickups, and that would be the non-express train that also stopped at Eagle River and Elmendorf.

***February 1st Focus Group:*** Members of the February 1st focus group also discussed taking vehicles on the train, but dropped the idea. Although the January group had a member who needed her car to perform her duties for work, the February group did not. Consequently, they were more willing to dismiss the notion of loading vehicles, because they were not motivated by the needs of one of their group members.

### Employer and Government Contributions to Commuters

The focus group members did not expect employers to assist them with the costs of their commute, but they would be pleased for any help they could offer. The participants thought that maybe some of the larger employers could be convinced to offer grants for the commute, if several of their employees live in the Valley. One participant mentioned that financial incentives might be given by the State or Borough.

A summary of the comments by individual focus group participants appears in Appendix C.

## SUMMARY

### Ridership Forecasts

A ridership range of 168,000 to 190,000 passenger trips per year in 2005 appears a reasonable estimate for peak and off-peak commuter rail service between Mat-Su and Anchorage. Alternatively, a range of between 152,000 and 168,000 appears reasonable for a peak-only service. These numbers are consistent with previous studies and WSA's independent analysis of last year. They are also consistent with the experience of other commuter rail services in terms of the percentage of their respective commuter markets captured.

Likewise, a ridership figure of about 9,000 passenger trips in 2005 generated by Girdwood residents commuting to Anchorage appears reasonable. The figure is consistent with the 1994 *Girdwood Rail Service Feasibility Assessment*, albeit on the conservative side.

These ridership figures can be expected to grow with the increase in populations in both Mat-Su and Girdwood, along with the increase in jobs in Anchorage.

### Commuter Survey

The 2001 Mat-Su commuter survey conducted by CRG identified strong interest in a commuter rail alternative to driving the highways. According to the survey, 15 percent of Mat-Su commuters indicated that they would take the train every time or most times. However, this percentage is not consistent with the experience of other new West Coast commuter rail services, which report commuter "capture rates" of 10 percent or lower. In short, interest in the train is

not the same as taking the train. The actual ridership's percent of total Mat-Su commuters will likely be much lower.

## Service Attributes

Other commuter rail services reported that on-time arrivals are consistently the priority for their riders. The two focus groups conducted by CRG also identified the desire for punctuality. Mat-Su commuters share this concern with commuter train riders in Chicago and Los Angeles. The items identified as important to Mat-Su commuters regarding a rail service include:

- Several trains to accommodate flexible schedules of commuters
- Short commute and punctuality
- Express trains
- Secure parking at stations, and ease of access and egress
- Reliable and quick connecting shuttles
- Cost effectiveness for riders

To the extent practical, the service attributes expressed as desirable by the focus group participants were reflected in the operating plan that follows. Given the light density of ridership, some attributes could not be included for start-up in 2005. For example, the ridership anticipated for 2005 would not be sufficient to support three morning trains from Mat-Su to Anchorage, nor would it support non-stop express service. However, as ridership builds over time, the need for more trains and even express service should be reevaluated.

# CHAPTER HIGHLIGHTS

## CHAPTER 2: OPERATING AND FINANCIAL PLAN

- The study investigated four operating scenarios for the Anchorage area commuter rail service. These were:
  - Scenario A: Wasilla-only service, with ARRC train operators and maintenance of equipment (MOE) forces.
  - Scenario B: Wasilla-only service, with independent contractor train operators and MOE forces.
  - Scenario C: Wasilla and Girdwood services, with ARRC train operators and maintenance of equipment (MOE) forces.
  - Scenario D: Wasilla and Girdwood services, with independent contractor train operators and MOE forces.

  Of the four, the study recommends either Scenario A or B for implementation. The recommendation is due to the scenarios' lower capital and operating costs, and their focus on the major commuter market, which is inbound to Anchorage from Mat-Su. Whether or not ARRC provides crews and MOE forces will depend on the railroad's ability to provide these forces on a price basis competitive with what an independent contractor can offer.
- For each scenario, the study developed two schedule concepts. One concept is a Minimal Service Level, with an exclusive focus on morning and evening commuter trains. The other is an Expanded Service Level, with off-peak trains. The study recommends that the service begin with a Minimal Service Level. As ridership builds, schedules can transition to an Expanded Service Level.
- The study investigated various types of rolling stock for the service. These included conventional locomotives and locomotive-hauled commuter cars, remanufactured Rail Diesel Cars (RDCs) similar to equipment that the Alaska Railroad currently owns and operates, and a new technology termed Diesel Multiple Units (DMUs), which are popular in Europe but have yet to be deployed in the United States. The study recommends remanufactured RDCs, due primarily to their operating flexibility and cost competitiveness with existing locomotive-hauled commuter equipment.
- The four scenarios generate farebox recovery ratios (the ratio of revenues to operating costs) between 15 and 22 percent. The Wasilla-only service scenarios generate higher ratios and lower required subsidies. All scenario ratios will improve over time, as more riders are drawn to the commuter trains.
- Transit integration is a key element for the success of the commuter rail service. Many riders will need a means to go from the trains, which will terminate at the Anchorage

Depot/Intermodal Station, to their workplaces. Anchorage's People Mover bus service can provide transit answers to commuter needs. Mat-Su Community Transit (MASCOT) can also provide service to and from stations in the Mat-Su Valley. Employers should assist employees who ride commuter trains by deploying employer-sponsored shuttles.

- There will be five stations at the start-up of a Wasilla-only commuter rail service. These will be basic facilities, each with a 300-foot-long platform, an enclosed waiting room with limited seating, and a lighted parking area. Tickets will be sold through automatic ticket vending machines, obviating the need for station attendants. Scenarios C and D would involve eight stations.
- A maintenance facility or car shop will be in Wasilla, where commuter trains will begin and end their trips. The shop will be located on 15 acres, and will be equipped to perform all maintenance except periodic or emergency heavy maintenance that can best be done by ARRC at its full-scale Ship Creek maintenance facilities. Scenarios C and D would require an overnighting facility for a train set in Girdwood.
- Scenarios C and D include $79.3 million in track improvements south of Anchorage, which will occur simultaneously with improvements to the Seward Highway. The public agency sponsoring commuter rail service would contribute $34.8 million for upgrades, unrelated to highway improvements, that will increase the speed of commuter trains. These high capital costs, in a market segment with few commuters, contributed to the study's recommendation of Wasilla-only service reflected in Scenarios A and B. Total capital costs for the four scenarios appear in the table below.

**Capital Cost Summary**
**2000 dollars**

| Cost Category | Wasilla-only Scenarios A and B | Full Corridor Scenarios C and D |
|---|---|---|
| Station Costs | $5,028,000 | $ 7,883,000 |
| Wasilla Car Shop | 8,540,000 | 8,540,000 |
| Girdwood Overnighting Facility (unenclosed) | | 246,000 |
| Track Improvements | | 34,810,000 |
| Rolling Stock | 14,000,000 | 16,000,000 |
| Pre-operations Testing | 678,000 | 2,572,000 |
| Total | $28,246,000 | $70,051,000 |

Note: The costs above for stations, service facilities, and track improvements include amounts for contingencies.

# Chapter 2
# OPERATING AND FINANCIAL PLAN

## INTRODUCTION

The proposed commuter service consists of two segments that are basically independent of each other. Wasilla to Anchorage service serves a greater commuting population, and will operate over a rail line that requires a minimal amount of improvement to make the rail commute times competitive with driving times. In contrast, Girdwood to Anchorage service involves smaller numbers of commuters, and will require some expensive rail improvements to make the rail journey competitive. Initial patronage evaluation showed the Wasilla service to be the stronger candidate for commuter service. However, from an operating standpoint, each route could be operated with similar equipment, and under the same management and funding arrangements. The development of the operating and financial plan was structured to look at the implementation of Wasilla-only service, as well as the Wasilla and Girdwood segments operating as a unified system.

A second consideration that impacts the costs of service is the option of operating the service with ARRC train operators and maintenance of equipment (MOE) forces, or of assigning the train operation and equipment maintenance to an independent contractor. The differences in cost appeared to be sufficient to warrant separate cost estimates.

As a result of these considerations, the following four operating scenarios were analyzed.

- Scenario A: Wasilla-only service, with ARRC train operators and MOE forces.
- Scenario B: Wasilla-only service, with independent contractor train operators and MOE forces.
- Scenario C: Wasilla and Girdwood services, with ARRC train operators and maintenance of equipment (MOE) forces.
- Scenario D: Wasilla and Girdwood services, with independent contractor train operators and MOE forces.

The analysis investigated each alternative in terms of the following key elements required for service implementation:

- Schedules
- Rolling stock
- Operating costs
- Financial performance
- Transit integration
- Stations
- Service Facilities
- Track work

In developing schedules, this study evaluated two levels of service. These were a Minimal Service Level, with trains on weekdays during commute hours only, and an Expanded Service Level, with mid-day and weekend service.

The study explored various types of rolling stock in order to determine which one would be best suited for an Anchorage area commuter service. These included conventional locomotives and commuter cars, remanufactured Rail Diesel Cars known as RDC 1s, and two types of new Diesel Multiple Units (DMUs).

Operating costs were calculated assuming both service levels and the two types of rolling stock that are the more likely candidates for the service: RDC 1s and conventional commuter equipment. A guiding assumption in developing operating costs was that a multi-jurisdictional agency would sponsor the service. The agency would be composed of the municipalities of Anchorage, Wasilla, Palmer, the Mat-Su Borough and perhaps the Alaska Department of Transportation and Public Facilities, as discussed in Chapter 4. A small agency staff would manage the prime contract with ARRC, and contract for other services such as transportation, equipment maintenance, security, station cleaning, overnight car cleaning, and revenue collection.

A contrast of revenues versus operating costs produces the "farebox recovery ratio", which is the proportion of operating costs covered by fare revenue. This ratio is a basic service performance measure. The study found that Wasilla-only service generates higher farebox recovery ratios versus full corridor service, and that RDC 1s and conventional bi-directional train sets generate similar the farebox recovery ratios in Wasilla-only service. However, RDCs can offer greater operational flexibility that can minimize operating costs.

Wasilla-only service scenarios also generated lower operating subsidy requirements. The scenario comparison further showed that using an independent contractor for train operations would provide noticeable savings over operation by ARRC personnel, at least under current ARRC operating agreements.

In order to enhance the utility of the service, it must be integrated with local transit agencies – People Mover in Anchorage and MASCOT in Mat-Su. Both transit agencies indicated a willingness to explore how commuter rail and local bus transit could work together effectively to move people from home to the train and to work. Ideally, there will be dedicated bus shuttles meeting the trains in Anchorage to deliver riders to the six key employment centers identified in Chapter 1. Employers, with sizable numbers of employees who may use the trains, may wish to explore the initiation of their own shuttle services to meet the trains as they arrive in Anchorage.

Finally, the study evaluated the potential locations, design parameters, and costs of stations envisioned for implementation. The analysis noted that funds for an Anchorage Intermodal Station and a Palmer station are already programmed. However, the study includes a cost evaluation for the Palmer station for illustrative purposes, as well as costs for commuter rail ticket vending machines at the Anchorage Intermodal Facility. Several other potential station sites were investigated for a second phase of implementation. A car shop will be needed in Wasilla, as well as an overnight storage facility in Girdwood, should service extend there.

Also, the analysis identified track improvements to make train travel times more competitive with automobiles between Girdwood and Anchorage. Capital costs for Wasilla-only service are significantly lower than for a scenario involving Girdwood service, since no track improvements south of Anchorage will be required.

As a result of the analysis, the study recommends the following for implementation of commuter rail service in the Anchorage area:

- A Minimal Service Level.
- Remanufactured RDC 1 rolling stock.
- Operations between Wasilla and Anchorage only.

Whether or not ARRC provides crews and MOE forces will depend on the railroad's ability to provide these forces on a price basis competitive with what an independent contractor can offer.

The following discussion assumes a start date of 2005. It is possible that the service will start later. However, 2005 is sufficiently in the future and therefore realistic, particularly in view of the Wasilla-only service Scenarios A and B that require no track improvements. The study notes that, while the ultimate the decision of when to start is up to the multi-jurisdictional agency that will sponsor the service, Anchorage area commuter trains could run by 2005.

## SCHEDULES

Two alternative schedule concepts were developed for the initiation of commuter rail service in 2005. These are a Minimal Service Level and an Expanded Service Level. The schedules were compared against existing train flows on the ARRC using the railroad's simulation software. The schedules shown below pose no serious conflicts with ARRC trains. Minor schedule modifications are possible for both freight and passenger trains, which could remove conflicts entirely. More important than the specific minute-by-minute schedules discussed below is the concept of the general time frames in which the trains will run.

As start-up is several years away, plenty of time remains to refine the exact schedules to assure the best result for the riders and the railroad. Also, there will be opportunities to revisit these operating concepts and explore variations, such as more frequent service during peak times, commuter service from Mat-Su to the Ted Stevens International Airport, and even to Dimond Center. It is important to note that the purpose of the schedules described below is to determine the feasible operating times for commuter rail service in the short term, and not to determine times with precision.

### Minimal Service Level

Schedules for service between Wasilla and Anchorage as well as between Girdwood and Anchorage are discussed below. Of the two service segments, Wasilla to Anchorage is clearly the more important one, because that segment will generate more riders. The service can start on the northern leg, and be expanded to Girdwood at some future point. Nevertheless, the analysis

that follows considers service to Girdwood in order to show its impact on schedules, as well as on rolling stock requirements, service facilities, and stations.

***Wasilla-only Service – Scenarios A and B:*** A Minimal Service Level for Scenarios A and B provides two round trips from Wasilla to Anchorage. The trains would operate only on weekday business days, with no Saturday, Sunday, or holiday service. This scenario represents a commuter-oriented system, intended to accommodate work trips to Anchorage. The schedules for the Minimal Service Level appear in Appendix D in Figure D-1.

The Wasilla trains depart at 6:00 a.m. and 6:45 a.m., arriving in Anchorage at 7:06 a.m. and 7:51 a.m. Dedicated bus shuttles meet each train and distribute passengers to the major employment centers in Anchorage. Intermediate stops are made at Matanuska, Eagle River, and Elmendorf. Travel time from Wasilla to Anchorage is one hour and six minutes. Returning in the afternoon, the trains leave Anchorage at 5:00 p.m. and 5:45 p.m. Dedicated shuttle buses collect passengers at the major employment centers, arriving at the Anchorage station just prior to train departure.

***Full Corridor Service – Scenarios D and C:*** A Minimal Service Level for Scenarios C and D provides two round trips from Wasilla to Anchorage, and one round trip from Girdwood to Anchorage. The trains would operate only on weekday business days, with no Saturday, Sunday, or holiday service. This scenario represents a commuter-oriented system, intended to accommodate work trips to Anchorage. The schedules for the Minimal Service Level appear in Appendix D in Figure D-2.

The Wasilla train schedules will be the same as for Wasilla-only service. The Girdwood train departs at 6:25 a.m., reaching Dimond Center at 7:01 a.m., Spenard (Midtown) at 7:13 a.m., and Anchorage at 7:23 a.m. This travel time of 57 minutes is only possible with major track improvements that are detailed later in this chapter. The present travel time between Girdwood and Anchorage is about 80 minutes. Dedicated shuttle buses transport commuters from the Midtown station at Spenard to the major employment centers. The afternoon return train departs Anchorage at 5:45 p.m., Spenard at 5:56 p.m., and Dimond Center at 6:07 p.m., arriving in Girdwood at 6:42 p.m. Shuttles would operate from employment centers to the train at Spenard.

## Expanded Service Level

The Expanded Service scenario represents a variation of the Minimal Service Level that provides some mid-day and weekend service. No additional equipment is needed. The added service meets the commuter needs served by the Minimal Service Level, and also accommodates a larger segment of the travelers in the region by permitting later morning arrivals, earlier afternoon departures, and some reverse direction travel.

The additional trains envisioned under an Expanded Service Level would encourage additional ridership. Also, additional trains would be consistent with the desire expressed in the focus groups for more trains to accommodate the variable schedules of individual commuters.

***Wasilla-only Service – Scenarios A and B:*** Wasilla service provides the same two morning and evening commute schedules described under the Minimal Service Level, including the dedicated

shuttle buses. In addition, two additional round trips are provided. Southbound, there is a morning 9:30 a.m. departure from Wasilla, and an afternoon 3:00 p.m. departure. Northbound, the added trains leave Anchorage at 8 a.m. and 1:30 p.m. The added schedules permit travel to and from Anchorage for less than a full business day. Running times between Wasilla and Anchorage would be one hour and six minutes, with the same intermediate stops as the Minimal Service option. The Wasilla service remains a weekday service.[1] Schedules for the Expanded Service Level appear in Appendix D in Figure D-3.

***Full Corridor Service – Scenarios C and D:*** The Wasilla train schedules will be the same as for Wasilla-only service. Girdwood service provides two additional round trips over the Minimal Service Level. Southbound trains depart Anchorage at 7:10 a.m. and 8:30 a.m., with afternoon returns from Girdwood at 3:00 p.m. and 4:40 p.m. Travel time is 57 minutes, and each train makes a stop at Spenard and at Dimond Center. The 6 a.m. train south from Wasilla operates through Anchorage all the way to Girdwood, and the 4:40 p.m. departure from Girdwood operates through Anchorage to Wasilla. Weekend service is operated on the Anchorage – Girdwood route with the same three daily round trips as operated on weekdays. The expanded Girdwood trains serve both recreational and work trips related to recreational facilities in Girdwood. Schedules for the Expanded Service Level appear in Appendix D in Figure D-4.

## Regular ARRC Passenger Service

ARRC operates regular summer passenger service between Anchorage and Fairbanks, Anchorage and Whittier, and Anchorage and Seward. Additional services may be in place by the time commuter service begins in 2005. ARRC may be willing to honor commuter tickets on these trains between Anchorage and Wasilla and between Anchorage and Girdwood, depending on typical passenger loads and operating conditions. Honoring the commute tickets would provide a few more schedule options for commuters, and a modest amount of incremental revenue to ARRC. Specific conditions would have to be worked out between ARRC and the commuter service's multi-jurisdictional agency sponsor.

The schedules for these trains are shown in the Appendix D tables with their current run times. These may be modified due to ongoing track improvements north of Anchorage to Wasilla, the South Anchorage double-track project, and the conceptualized improvements south of Potter to Girdwood cited later in this chapter. All these will result in faster travel times for ARRC trains.

## Recommended Service Level

The Minimal Service Level with trains operating between Wasilla and Anchorage is recommended for start-up. The focus at start-up should be on commuters bound for Anchorage from the larger market. In a secondary phase of implementation, the service could move toward the Expanded Service Level, providing limited off-peak service, weekend service, and a reverse commute for workers and recreationalists bound for Girdwood (some of whom in the interim

[1] In order to position equipment to provide the weekend service between Anchorage and Girdwood, it is necessary for one train set to operate from Wasilla to Anchorage on Saturday morning, and from Anchorage to Wasilla on Sunday evening. These two runs can carry passengers, but patronage is expected to be very light because there is no corresponding train in the opposite direction on the same day. If there is sufficient demand for weekend service north of Anchorage, additional trains could be scheduled using the available train sets. No additional equipment would be needed.

could utilize the regular ARRC summertime services with stops in Girdwood). This approach will save significantly on operating costs, as is noted in a subsequent section of this working paper. It will also provide the opportunity for the service to build a reliable operation with a basic commuter constituency before attempting to expand into additional markets.

No stops are recommended for the Ted Stevens International Airport at start-up in 2005 for two reasons. First, demand for a station, measured here in terms of the percent of Anchorage area jobs per major work center, is the lowest of six major work centers in Anchorage. Second, operating trains into and back out of the stub-end track configuration at the airport station would delay commuter trains disproportionally versus other stations. Service should be reevaluated in later years, as ridership and demand for an airport station stop builds. If service is operated only between Wasilla and Anchorage, trains could continue south to the airport terminal without any disadvantage to commuters to major work locations.

## ROLLING STOCK ANALYSIS

Three types of rolling stock were considered as viable start-up technologies for the Anchorage area commuter rail service. All are compliant with FRA "crashworthiness" standards for operation on tracks shared with freight and other passenger service. These are:

- Conventional locomotive-hauled equipment, i.e., a diesel locomotive and either Bombardier bi-level commuter cars or Colorado Rail Car bi-level commuter cars.
- Remanufactured Rail Diesel Cars (called hereafter RDCs or Budd cars).
- FRA Compliant Diesel Multiple Units (DMUs);

The purpose of including the following detail is to facilitate the consideration of which technology to select for start-up service.

### Rolling Stock Characteristics

Obtained from manufacturers and operators for the equipment types, the following information relates to those characteristics that provide a meaningful basis of comparison. These are characteristics that a potential buyer should know in order to make an informed decision. The characteristics are:

- Model identification
- Features
- Other Users
- Lead time for Delivery
- Purchase Cost
- Maintenance Cost
- ADA Compliance
- Length
- Weight
- Seated Capacity
- Bicycle Accommodations
- Acceleration
- Deceleration
- Top Speed
- Fuel Consumption
- Emissions and Noise

Manufacturers contacted included:

- General Motors' Electro-Motive Division (EMD), the maker of the F59 PHI locomotive used by the Los Angeles Metrolink service and Caltrans, among others.
- Bombardier, maker of a widely used bi-level commute car used by Metrolink, the San Diego Coaster, and San Francisco Bay Area's Altamont Commuter Express (ACE).
- Colorado Rail Car, which has designed a bi-level commute car known as the Commuter Car III. This is a variant of its bi-level dome car currently utilized by the Alaska Railroad. The company has also designed a DMU, based on the same car type and is known as Commuter Car IV. Both Commuter Cars III and IV are reviewed here.
- ADtranz, designer of a compliant DMU 110-2, proposed for the Pennsylvania Department of Transportation (PennDOT), and of the DMU 110-3 variant.

EMD related that F59 PHI will be phased out in the next few years, and replaced by new locomotive design presently designated as "PL 43B". This locomotive type will have more horsepower, and will be fully compliant with EPA air quality emissions standards to take effect within two years. The price, however, may be 50 percent more than that of an F59 PHI. This study assumed that the F59 PHI would still be available for purchase in 2003 and delivery in 2004, prior to the 2005 service start-up.

LTK Engineering Services provided detail on the remanufactured RDCs or "Budd cars," used by Dallas Area Rapid Transit (DART) for the Trinity Railway Express service. LTK currently maintains this equipment. ARRC provided detail, including costs, on the ongoing rehabilitation of two RDCs in Richland, Washington. This experience provides a useful comparison with LTK's refurbishment of the DART RDCs. VIA Rail Canada recently sold their remaining RDC fleet to two companies, Farm Rail in Maine and Heritage Management in New Brunswick. According to VIA, the sale included RDC 1s, and that these two companies could be approached for a purchase of the RDC 1s. Officials at Metrolink, the Altamont Commuter Express (ACE), and Vancouver's West Coast Express commuter service provided insight on locomotive-hauled equipment.

The findings appear as Table 2-1, Rolling Stock Comparison. While the information in the table is straightforward, a clearer understanding of the key points required that they appear in a railroad operating context. For example, the seated capacities of a locomotive-hauled passenger car and a DMU by themselves present very little meaningful information. Rather, the question should be this: How much seated capacity is needed per train set – either locomotive-hauled train set or a DMU? By knowing this critical variable, a meaningful discussion can begin on:

- How long will the train be?
- What are the capital cost requirements?
- What are the operating and maintenance (O&M) cost requirements?
- What are the implications regarding fuel consumption, emissions, and noise?

**Table 2-1**
**Rolling Stock Comparison**

| | F59 PHI Locomotive | Bombardier Bi-level Commute Car | Colorado Railcar Commute Car | Remanufactured RDC Budd Car | Colorado Railcar Single-Car DMU | ADtranz Two-Car DMU 110-2 | ADtranz Three-Car DMU |
|---|---|---|---|---|---|---|---|
| **Model or Description** | F59 PHI[1]. | Bombardier Aluminum Bi-Level (cab car and coach). | Colorado Commuter Car III (coach only). | Budd RDC 1. | Colorado Commuter Car IV DMU. | DMU 110-2. | DMU110-3. |
| **Features** | Aerodynamic. Has fuel injection to reduce emissions. | Bi-level design with 2 sets of 53-inch doors at lower level. Some are cab cars and others are coaches. Includes restroom facilities. | Bi-level design with two 54-inch doors at lower level, and a 105 square foot lobby. 40 tons air conditioning (AC). No restrooms. | Self-propelled, single level cars with vestibule steps. Operating cabs at both ends. Includes restroom facilities. | Self-propelled bi-level design with two 54-inch doors at lower level, and a 105 square foot lobby. Operating cab at one end only. | Self-propelled, articulated single-level two-car unit with low floor design. Operating cab at each end of each articulated unit. Includes restroom facilities. | Self-propelled, articulated single-level three-car unit with low floor design. Operating cab at each end of each articulated unit. Includes restroom facilities. |
| **Users** | Amtrak, Metrolink, West Coast Express, Caltrans. | Metrolink, Coaster, Altamont Commuter Express (ACE), West Coast Express, Go Transit. | None on order. | DART's Trinity Railway Express. | None on order. | None on order. | None on order. |
| **Availability and Delivery Time** | 12 months from signed contract and letter of credit. | 15 to 18 months. 15 months if in pro-duction. 18 months from a "cold" start. | 12 months. | 18 to 24 months. | 16 months. | 24 months. | 24 months. |
| **Cost Estimate[2]** | $2-2.5 million per locomotive, assuming order of 5 to 10 locomotives. | Based on an order of 15 cars, $1.9 million for a cab car, and $1.8 million for a coach. Add $50,000 per car for a 10-car order. Subtract $25,000 per car for a 20-car order. | $2.4 million per car. | $2 million per unit (DART paid $1.8 million in 1995). This figure includes purchase of the vehicle from US and Canadian owners. | $3.3 million per car. | $6 million for a two-car articulated unit. | $8.5 million for a three-car articulated unit. |

[1] The locomotive type to be phased out over the near term. However, specifics on the new type now under design were not available. The manufacturer, the Electro Motive Division, related that the cost of the PL 43B replacement should be about $3 million.

[2] Shipping costs for equipment are not included. These costs are FOB manufacturer or remanufacturer.

| | F59 PHI Locomotive | Bombardier Bi-level Commute Car | Colorado Railcar Commute Car | Remanufactured RDC Budd Car | Colorado Railcar Single-Car DMU | ADtranz Two-Car DMU 110-2 | ADtranz Three-Car DMU |
|---|---|---|---|---|---|---|---|
| **Maintenance Costs** | $1.6 per vehicle mile, per Metrolink. | $1.3 per vehicle mile, per Metrolink. | Not calculated. | Similar to DMU costs per vehicle mile, per LTK. | Not calculated. | $2 per vehicle mile. | $2.5 per vehicle mile. |
| **ADA Access** | Not applicable. | Folding ramp through low-level doors.[3] | Can accommodate loading heights of 26" and 52" inches above top of rail. | DART has built high platforms from which wheelchairs can access Budd car vestibule over throw plate. | Can accommodate loading heights of 26" and 52" inches above top of rail. | May include a folding ramp through low level doors. | May include a folding ramp through low level doors. |
| **Length** | 58.6 feet. | 85 feet. | 85 feet. | 85 feet. | 85 feet. | 170 feet. | 255 feet. |
| **Weight** | 140 tons. | 61 tons for a cab car, 59 tons for a coach car. | 86 tons. | 65 tons. | 91 tons. | 142.2 tons | 211 tons. |
| **Seated Capacity** | Not applicable. | Cab car: 140; Coach: 144. | 192. | 85 with restrooms; 92 without. | 184. | 174. | 276. |
| **Purchase Cost per Seat** | See bi-level car purchase cost per seat. | $21,000 assuming two cars, plus an F59 PHI locomotive at $2 million. | $18,000 assuming two cars, plus an F59 PHI locomotive at $2 million. | $24,000 with 85 seats, and $22,000 with 92 seats (no restrooms). | $18,000. | $35,000. | $31,000. |
| **Acceleration to 50 mphps** | 0.67 mphps. | Not applicable. | Not applicable. | 0.80 mphps. | 0.70 mphps | 0.75 mphps. | 0.72 mphps. |
| **Deceleration** | 2.00 - 2.50 mphps full service; 2.50 – 3.00 mphps emergency. | Not applicable. | Not applicable. | 2.50 mphps full service; 2.75 mphps emergency. | 2.50 mphsp full. | 2.50 mphps full. | 2.5 mphps full. |
| **Top Speed** | 110 mph. | 100 mph. | 100 mph. | 100 mph. | 100 mph. | 110 mph. | 110 mph. |
| **Fuel Consumption** | 2.2 gallons per mile per two-car train set. | See fuel consumption for F59 PHI. | See fuel consumption for F59 PHI. | 0.4 gallons per mile. | 0.45 gallons per mile. | 0.42 gallons per mile. | 0.44 gallons per mile. |

[3] System in use at Coaster, Metrolink, and Altamont Commuter Express (ACE).

Based on winter weekday ridership for the Wasilla – Anchorage service option (see Table 1-1), a maximum seating capacity of 200 persons per train set would be sufficient to assure every person gets a seat at start-up. Two Bombardier cars, two Colorado Rail Car commuter cars, three RDC Budd cars, and an ADtranz DMU 110-3 all could comfortably accommodate this number of riders.

Also discussed below are the various rolling stock characteristics with regard to engine emissions and noise levels. Input on emissions came from the California Department of Transportation (Cal-trans), with regard to locomotive-hauled train sets only; Caltrans uses these locomotives on its California Corridor Services – the *Capitols*, the *San Joaquins* and the *Pacific Surfliners*. No specifics with regard to diesel exhaust emissions regarding DMUs and RDCs were available. The results of a preliminary analysis of comparative noise levels of the rolling stock types also appear below.


*F59 PHI Locomotive*

It should be noted that while ADtranz DMU 110-2s and 110-3s and Colorado Railcar's DMU Commuter Car IV have been designed, none has been built to date. Also, no other manufacturer has built a DMU that is compliant with FRA crashworthiness standards for operation on track shared with other passenger trains and freight trains. ADtranz is currently manufacturing an FRA Non-compliant DMU or Light DMU for New Jersey Transit; this equipment is known as the GTW. Other manufacturers of non-compliant DMUs are Siemens, Alstom, and Kinki Sharyo of Japan.

## Length and Seated Capacity

Both types of a two-car locomotive-hauled train set would have an overall length of 228 feet. An F59 PHI locomotive is 59 feet long. Each Bombardier and Colorado Railcar bi-level car is 85 feet long. Train sets with two Bombardier cars would have a seated capacity of 284 riders; 140 for a cab car and 144 for a coach. Train sets with Colorado Railcar bi-level cars would have a seated capacity of 384 riders; each car seats 192. The latter are designed without restroom facilities. With restrooms, seated capacity would be less. Since a minimum of 200 seats per train set is assumed for a Wasilla – Anchorage commuter service, two Bombardier or two Colorado Rail Car bi-level cars would be required.

*Bi-Level Commuter Car*

Having a seated capacity of 85 persons per car (with restroom facilities), a train set comprised of three RDC 1s would be required to handle 200 seated passengers. Three of these Budd cars would have a total length of 267 feet.

One DMU 110-3 train set (consisting of three cars or units) would have a total length of 255 feet and a seated capacity for 276 riders. A DMU 110-2 has a length of 170 feet and a seated capacity for 174 persons – a seated capacity that is insufficient to ensure each Wasilla – Anchorage commuter would get a seat. The latter DMU type's seating would be more than sufficient, however, for Girdwood – Anchorage commuter runs, which will require less than 20 seats.

Each DMU Commuter Car IV has a length of 85 feet, and seats 184 persons – just under the 200 person threshold to guarantee all riders a seat Wasilla – Anchorage. Accordingly, two Commuter Car IVs would be required per train set, having a total length of 170 feet and seating for 368. As designed, these cars have no restroom facilities. If restroom facilities were to be added, several seats would be eliminated.

## Purchase Cost

The purchase and remanufacturing cost for a model RDC 1 Budd car is about $2 million, based on the $1.8 million that DART paid to put these cars in service in 1995; conversion costs for alternate RDC models are higher. At this figure, and given a capacity of 85 seats per car (with restrooms), the per-seat cost would be about $23,000. ARRC is presently paying $850,000 each for rebuilding two of its RDCs – one with a 60-seat capacity and another with 76 seats. These are not RDC 1s, but alternate models, having a rebuild cost of $10,000 per seat. However, LTK

noted that the per-seat cost does not permit a valid apples-to-apples comparison in this instance. LTK emphasized that the DART RDC 1s were stripped to the shell, and all new systems were put in place. This is significantly more work that rebuilding – to the point where LTK termed the work "remanufacturing."[2] The result is a completely new RDC, albeit with a 50-year-old shell. Because the systems are new, maintenance costs are minimized, as compared to rebuilt 50-year-old systems that are repaired and updated. For the purpose of this analysis, remanufactured RDC 1s, versus rebuilt RDCs, are assumed, and accordingly a $23,000 per-seat price is also assumed.

ADtranz has estimated the purchase price of a DMU 110-2 at $6 million. Given its maximum seated capacity of 174, the per-seat cost would be about $35,000. At $8.5 million and a seated capacity of 276, a DMU 110-3 would have a per-seat purchase cost of about $31,000. These DMU and Budd car per-seat costs would not change, regardless of the number of units purchased. A DMU Commuter Car IV would have a cost per seat of about $18,000.

The per-seat purchase cost for locomotive-hauled equipment does vary with the length of the train set. A train set consisting of a locomotive and two Bombardier bi-level cars, having a seated capacity of 284, would cost about $6 million, or $21,000 per seat, while a train set consisting of one car, with a seated capacity of 140, would cost about $4 million, or $29,000 per seat. A train set consisting of a locomotive and two Colorado Railcar bi-level cars, having a seated capacity of 384, would cost $6.8 million, or about $18,000 per seat. A train set with one Colorado Railcar bi-level, with a capacity of 192, would cost $4.4 million, or $23,000 per seat.

*Remanufactured RDC1*

## Maintenance

Costs for all equipment options are estimated at $2.50 per vehicle-mile or less, based on comments from Metrolink, LTK, and ADtranz[3]. Given their complexity, RDCs and DMUs would have higher maintenance costs per vehicle-mile than either locomotives or conventional cars. Because Alaska Railroad facilities in Anchorage will not be used for maintaining the equipment, a separate maintenance facility in Wasilla will be needed. Should the service extend

[2] Alstom performed the remanufacturing, under supervision by LTK Engineering Services for DART.

[3] Maintenance costs can very widely depending on how cars are maintained. However, speaking in "relative terms," maintaining conventional equipment should be less expensive per vehicle-mile than maintaining RDCs or DMUs, and costs for maintaining RDCs and DMUs should be roughly the same – all else being equal. This commentary was provided by LTK.

to Girdwood, an overnighting facility will be established in Girdwood, where the equipment can be cleaned after daily runs. The facility will include a small metal building for the storage of cleaning supplies and equipment. The area will be fenced to protect rolling stock.

## Availability

Bombardier and ADtranz reported lead times for their equipment of up to two years. Colorado Railcar estimated that Commuter Cars III and IV could be delivered within 12 to 16 months. EMD stated that locomotives conceivably could be delivered in as soon as one year. LTK estimated that the remanufacturing of an RDC 1 could take up to two years. ARRC related that six to seven months are required for a rebuild of an ARRC RDC at the Livingston Rebuild Center in Richland, Washington.

## Acceleration

In general, the self-propelled technologies will have higher acceleration rates than locomotive-hauled equipment. Otherwise, the differences are not major. Acceleration is commonly cited in terms of miles per hour per second (mphps) to a specific speed. Based on data provided by EMD, the estimated acceleration would be at 0.67 mphps to 50 mph for a conventional train with three cars. LTK estimated a Budd car acceleration at 0.80 mphps to 50 mph. ADtranz calculated that a DMU 110-2 unit would accelerate at 0.75 mphps to 50 mph, and that a DMU 110-3 would accelerate slightly slower at 0.72 mphps to the same speed. Colorado Railcar estimated that its DMU Commuter Car IV would have a slightly lower acceleration of 0.70 mphps to 50 mph. For all technologies, acceleration rates tend to be higher at lower speeds. For example, LTK said the Budd cars tested at 1.5 mphps to 20 mph.

## Deceleration

EMD, LTK and ADtranz reported deceleration rates that also show relatively minor differences between technologies. In Table 2-1, rates appear in terms of a "full service brake," or normal braking circumstances as opposed to an "emergency brake." Full service braking rates for all technologies fall within a range of 2.00 to 2.50 mphps. Colorado Railcar estimated that its DMU Commuter Car IVs would have a full service braking rate of 2.50 mphps.

*Diesel Multiple Unit*

## Fuel Consumption

In Table 2-1, fuel consumption appears in terms of gallons per mile. Operator comments indicated that a conventional train with two cars would consume diesel fuel at a rate of about 2.2 gallons per mile. Based on data provided by LTK, a train set consisting of three Budd cars

would consume fuel at a lower rate of about 1.2 gallons per mile. ADtranz figures indicated that a DMU 110-2 would consume fuel at about 0.42 gallons per mile, and a DMU 110-3 would consume fuel at about 0.44 gallons per mile. Colorado Railcar estimated that its DMU Commuter Car IV would have a slightly higher consumption rate of 0.45 gallons per mile.

## Emissions

Emissions tests, conducted for the F59 locomotive (predecessor to the F59 PHI) as part of the acquisition program for Caltrans (which uses the locomotive in its various *Capitol*, *San Joaquin* and *Pacific Surfliner* corridor services), indicated that the F59 would meet the current Environmental Protection Agency (EPA) standards for locomotives manufactured before 2001 (Tier 0). As the standards become more stringent over time, the manufacturers have the responsibility for building vehicles that meet current standards.

As noted, DART is operating rebuilt Budd cars now. DART purchased them approximately four years ago from VIA Rail in Canada. At the time of purchase, the car bodies were rebuilt to update them and comply with Americans with Disabilities Act (ADA) standards. The engines were not remanufactured, and emissions testing was not completed. VIA Rail replaced the Budd car engines about 11 years ago. LTK, the maintenance contractor for the DART Budd cars, indicated that they meet all non-road emission standards of the EPA. Presumably, the same would be true with any other RDCs once operated by VIA and having similar engines.

There are no DMUs 110-2s or DMU 110-3s in operation. As a result, no emissions data is available. ADtranz, the manufacturer, indicated that it would be required to meet the applicable 40 CFR 89 standards of the EPA. Likewise, Colorado Car would be required to meet the applicable emissions standards in producing the DMU Commuter Car IV, of which none is in operation.

## Noise

A preliminary assessment of the Day-Night Sound Level (Ldn), which describes cumulative 24-hour noise exposure, indicated a comparatively low level of noise exposure. Ldn is often used in the assessment of community noise impacts. Preliminary results of a noise analysis performed for a proposed commuter service in Northern California[4] showed Ldn in a range of 52 to 59 decibels (dBA) measured at 100 feet for DMU equipment types. Typically, urban and suburban neighborhoods are in the range of Ldn 50 to 70. The analysis was done for the operation of 24 trains per day (the start-up service level), with two trains operating outside the 7 a.m. and 10 p.m. windows. For an Anchorage area commuter service with far fewer trains, the Ldn would be lower.

Ldn was estimated for operating speeds between 30 and 60 mph on typically good track conditions, as would be the case for the Anchorage area service. The conventional diesel locomotive would have slightly higher noise levels during operation. Given their engine size, RDCs would have Ldn similar to DMUs. As speeds increase and the wheel/rail noise becomes

[4] *Sonoma Marin Commuter Rail Implementation Plan*, Sonoma – Marin Area Rail Transit Commission, September 2000.

more dominant, the differences among the noise levels for the locomotive-hauled train sets, the Budd cars, and the DMUs diminish.

## Rolling Stock Needed to Support Service Options

The rolling stock required for the Wasilla-only service and full corridor service appears in Tables 2-2a and 2-2b. The requirements are discussed in terms of both a Minimal Service Level and an Expanded Service Level. Spares are included for all train set types except ADtranz DMU 110-2s, as noted below. It is assumed that, if locomotives are needed, suitable substitutes could be leased on a short-term or even an emergency basis from the Alaska Railroad.

***Minimal Service Level:*** Three train sets will support the Minimal Service Level for Scenarios A and B – the Wasilla-only service options. The costs for the rolling stock appear in Table 2-2a. The costs vary from a low of $8.8 million for rebuilt (repaired and updated rather than "remanufactured") RDC 1s to a high of $25.5 million for ADtranz DMUs. A primary factor driving the particular equipment consists was providing for a minimum seated capacity per train set of 200 during peak periods. This consideration would require a minimum per train set of one F59 PHI locomotive and two Bombardier bi-level cars (a cab car and a coach car) with total of 284 seats. Alternatively, it would require a train set of one F59 PHI and two Colorado Railcar Commuter Car IIIs, three RDC 1s, one ADtranz 110-3, or two Colorado Commuter Car IV DMUs.

**Table 2-2a**
**Rolling Stock Requirements for Wasilla-only Service**
**Costs in Millions of Year 2000 Dollars**

| **Locomotive-Hauled Equipment** | Wasilla-Anchorage | Spare | Total | $/Unit | Total Cost |
|---|---|---|---|---|---|
| Bombardier | | | | | |
| F59 PHI | 2 | | 2 | 2.0 | 4.0 |
| Cab car | 2 | 1 | 3 | 1.9 | 5.7 |
| Coach | 2 | | 2 | 1.8 | 3.6 |
| Total | | | | | 13.3 |
| Colorado Railcar | | | | | |
| F59 PHI | 2 | | 2 | 2.0 | 4.0 |
| Commuter Car III | 4 | 1 | 5 | 2.4 | 12.0 |
| Total | | | | | 16.0 |
| **RDC 1s** | | | | | |
| Purchased and "Remanufactured" | 6 | 1 | 7 | 2.0 | 14.0 |
| Purchased and Rebuilt (Repaired and Updated) | 6 | 2 | 8 | 1.1 | 8.8 |
| **DMUs** | | | | | |
| ADtranz 110-3<br>ADtranz 110-2 | 2 | 1 | 3 | 8.5<br>6.0 | 25.5 |
| Total | | | | | 25.5 |
| Colorado Railcar Commuter Car IV | 4 | 1 | 5 | 3.3 | 16.5 |

A number of points should be noted with regard to these costs. While the Colorado Railcar conventional equipment is less expensive than the Bombardier equipment, it cannot be operated in push-pull mode. It will require turnaround facilities at Wasilla (and at Girdwood, if service should extend there), which will add to total costs. Also, while Livingston Rebuild Center costs are less than the "remanufacturing" costs, remanufacturing results in a virtually new car with minimized maintenance costs and requirements for spares. Finally, both types of DMUs cited above exist as designs only. None has been built to date. Accordingly, actual building costs and performance data are unproven.

At $25.5 million, the three ADtranz DMUs come with the highest price tag of all options. DMUs are costly because no prototype exists. They must be built from the ground up, which requires significant engineering and tooling expense. Nevertheless, there is interest in DMU technology on the part of numerous transit agencies. Should these vehicles enter high volume production, unit costs should drop.

***Expanded Service Level:*** The Expanded Service Level also would require three train sets. No more bi-level cars, RDC 1s or DMUs per train set would be needed in addition to those identified above to carry off-peak riders.

***Full Corridor Service*:** Under both the Minimum and Expanded Service Levels for Scenarios C and D, equipment needs would increase, as shown in Table 2-2b.

**Table 2-2b**
**Rolling Stock Requirements for Full Corridor Service**
**Costs in Millions of 2000 Dollars**

| **Locomotive-Hauled Equipment** | Wasilla-Anchorage | Girdwood-Anchorage | Spare | Total | $/Unit | Total Cost |
|---|---|---|---|---|---|---|
| Bombardier | | | | | | |
| F59 PHI | 2 | 1 | | 3 | 2.0 | 6.0 |
| Cab car | 2 | | 1 | 3 | 1.9 | 5.7 |
| Coach | 2 | 1 | | 3 | 1.8 | 5.4 |
| Total | | | | | | 17.1 |
| Colorado Railcar | | | | | | |
| F59 PHI | 2 | 1 | | 3 | 2.0 | 6.0 |
| Commuter Car III | 4 | 1 | 1 | 6 | 2.4 | 14.4 |
| Total | | | | | | 20.4 |
| **RDC 1s** | | | | | | |
| Purchased and "Remanufactured" | 6 | 1 | 1 | 8 | 2.0 | 16.0 |
| Purchased and Rebuilt (Repaired and Updated) | 6 | 1 | 2 | 9 | 1.1 | 9.9 |
| **DMUs** | | | | | | |
| ADtranz 110-3 | 2 | | 1 | 3 | 8.5 | 25.5 |
| ADtranz 110-2 | | 1 | | 1 | 6.0 | 6.0 |
| Total | | | | | | 31.5 |
| Colorado Railcar Commuter Car IV | 4 | 1 | 1 | 6 | 3.3 | 19.8 |

At $31.5 million, the three ADtranz DMUs come with the highest price tag of all options. With the higher capacity, the 110-3s would be deployed on the Wasilla – Anchorage segment, and the 110-2 would be deployed on the less dense Girdwood – Anchorage segment.

No additional rolling stock would be required for an Expanded Service Level, providing trains for off-peak and Girdwood-bound reverse commute riders. These riders, identified in Chapter 1 ridership forecast, would include workers bound for Girdwood hotel and ski resort jobs, as well as skiers and summertime recreationalists. These outbound flows are anticipated to outnumber the inbound peak flows by almost 2 to 1 in 2005. As a result, the same amount of rolling stock, irrespective of type, would enjoy enhanced utilization.

## Recommended Rolling Stock

All of the rolling stock types discussed here have advantages and disadvantages. Some of these are captured in Table 2-3, Train Set Comparison for the Wasilla – Anchorage commute trip. Of the five train set types identified for the trip, the Colorado Railcar Commuter Car IV DMU has a lower cost per seat. However, these cars do not exist at the present time, so verification of performance details is not possible. The same is true with the ADtranz DMUs. It is noted, however, that the Commuter Car III is a variation of the Dome Car now utilized by both Alaska Railroad and Princess Cruises.

**Table 2-3**
**Train Set Comparison for the**
**Wasilla – Anchorage Commute Trip**

| Rolling Stock Type Wasilla – Anchorage | $/seat | Type In use | Was-Anch. Vol./Cap. | Bi-Directional |
|---|---|---|---|---|
| F 59 PHI and two Bombardier Bi-levels | 21,000 | Yes | 70% | Yes |
| F 59 PHI and two Colorado Railcar Commuter Car III | 18,000 | No | 52% | No |
| Three RDC 1s (Remanufactured) | 24,000 | Yes | 78% | Yes |
| One ADtranz DMU 110-3 | 35,000 | No | 72% | Yes |
| Two Colorado Railcar Commuter Car IV DMUs | 18,000 | No | 54% | Yes |

Note: costs exclude the spares.

On the other hand, both Bombardier cars and RDC 1s are presently in use. Their costs per seat are similar. Both have relatively efficient rider volume-to-capacity ratios. (These ratios are calculated here on basis of 200 peak period riders per train set. Ratios for the Colorado Railcar equipment are lower, as the Commuter Car III and the Commuter Car IV DMU each has a seated capacity of just under 200, which triggers an additional unit to the train set, thereby diluting the ratios.) Lastly, both rolling stock types can be operated bi-directionally, which would avoid building an expensive wye at Wasilla (and another potentially at Girdwood). The ADtranz DMU can be operated bi-directionally as well. A Commuter Car IV DMU train set can operate Wasilla – Anchorage bi-directionally, because two cars could be combined with a cab at each end of the two-car train set. However, a train set using Commuter Car IIIs would need a wye.

This study recommends remanufactured RDC 1s for various reasons. They can be operated bi-directionally, which will eliminate the need for an expensive wye. They are cost-competitive with the F59 PHI / Bombardier train sets. Also, they are well known to the Alaska Railroad, which could be contracted to maintain them. The railroad has a long history of using RDCs. It currently has four of them. Two were recently rebuilt, and two more are undergoing refurbishment at the Livingston Rebuild Center. Lastly, train sets of multiple RDCs offer flexibility in operations in that train set length can be tailored to ridership.

How realistic RDC 1s are as a commuter service option depends on the condition of those that can be obtained on the used equipment market. As noted in the Table 2a, seven will be required for Wasilla-only service. Should existing RDC 1s in Canada or the U.S. prove too few or unusable (or salvageable only at a prohibitive cost), then F59 PHIs and Bombardier bi-levels would be the obvious choice. Their comparative advantages include bi-directional capability, lower per-seat cost, lower operating cost (as discussed below), and a higher volume-to-capacity ratio for the Wasilla – Anchorage commute trip. Bi-levels have the additional capability of accommodating bicycles on board. This is a desirable feature, allowing riders to use their bikes from home to the train and from the train to work. Yielding this capability are wide doors, areas immediately adjacent to the doors with bike racks, and a car floor height a single step up from the boarding platform. An RDC, on the other hand, has a narrow stairway leading to a vestibule, providing practically no room for handling a bike on or off the car.

## OPERATING COSTS

Operating costs were calculated for the Minimal and Expanded service options. The calculations assumed both RDC 1s and locomotive-hauled equipment, i.e., F59 PHIs and Bombardier bi-levels. Costs for locomotive-hauled equipment are higher than for RDCs; driving the differences are the higher fuel consumption rates of the locomotives and the higher maintenance of way expenses due to the greater weight of the locomotive-hauled train sets. The results appear in Table 2-4 below, rounded to the nearest $1,000. These are operating costs for the rail service only. No costs for connecting shuttles are included.

The operating costs are shown by service scenario. As previously noted:

- Scenario A: Wasilla-only service, with ARRC crews and MOE forces.
- Scenario B: Wasilla-only service, with independent contractors.
- Scenario C: Wasilla and Girdwood services, with ARRC crews and MOE forces.
- Scenario D: Wasilla and Girdwood services, with independent contractors.

Appendix E contains a detailed listing of the cost items that comprise Scenario B, i.e., a Minimal Service Level, using RDC 1 equipment, for Wasilla to Anchorage commute runs with train crews and MOE forces provided by an independent contractor. The table is included as an example of the underlying spreadsheet detail used to develop Table 2-4. Similar detail was developed for all of the scenarios presented in Table 2-4, and has been provided separately to ARRC for review and analysis.

# Table 2-4
# Comparison of Annual Operating Costs
# 2000 Dollars

| Cost Category | RDCs | | Locomotives and Bi-Level Cars | |
|---|---|---|---|---|
| **Scenario A** | **Minimal** | **Expanded** | **Minimal** | **Expanded** |
| Transportation | 929,000 | 1,315,000 | 929,000 | 1,315,000 |
| Maintenance of Equipment | 273,000 | 602,000 | 191,000 | 402,000 |
| Fuel | 108,000 | 238,000 | 198,000 | 417,000 |
| Maintenance of Way | 26,000 | 56,000 | 33,000 | 69,000 |
| Facility Maintenance | 130,000 | 138,000 | 130,000 | 138,000 |
| Station Services | 195,000 | 226,000 | 195,000 | 226,000 |
| Insurance | 800,000 | 900,000 | 800,000 | 900,000 |
| General and Administrative | 816,000 | 928,000 | 809,000 | 909,000 |
| Total | 3,277,000 | 4,403,000 | 3,285,000 | 4,376,000 |
| **Scenario B** | | | | |
| Transportation | 559,000 | 932,000 | 559,000 | 932,000 |
| Maintenance of Equipment | 273,000 | 602,000 | 191,000 | 402,000 |
| Fuel | 108,000 | 227,000 | 198,000 | 417,000 |
| Maintenance of Way | 26,000 | 54,000 | 33,000 | 69,000 |
| Facility Maintenance | 130,000 | 138,000 | 130,000 | 138,000 |
| Station Services | 195,000 | 226,000 | 195,000 | 226,000 |
| Insurance | 800,000 | 900,000 | 800,000 | 900,000 |
| General and Administrative | 709,000 | 819,000 | 701,000 | 800,000 |
| Total | 2,800,000 | 3,898,000 | 2,807,000 | 3,884,000 |
| **Scenario C** | | | | |
| Transportation | 1,299,000 | 2,055,000 | 1,299,000 | 2,055,000 |
| Maintenance of Equipment | 313,000 | 742,000 | 249,000 | 645,000 |
| Fuel | 124,000 | 294,000 | 285,000 | 783,000 |
| Maintenance of Way | 48,000 | 150,000 | 100,000 | 351,000 |
| Girdwood Layover Facility | 85,000 | 85,000 | 85,000 | 85,000 |
| Facility Maintenance | 130,000 | 138,000 | 130,000 | 138,000 |
| Station Services | 374,000 | 436,000 | 374,000 | 436,000 |
| Insurance | 800,000 | 900,000 | 800,000 | 900,000 |
| General and Administrative | 860,000 | 1,025,000 | 858,000 | 1,036,000 |
| Total | 4,032,000 | 5,825,000 | 4,179,000 | 6,429,000 |
| **Scenario D** | | | | |
| Transportation | 744,000 | 1,315,000 | 744,000 | 1,315,000 |
| Maintenance of Equipment | 313,000 | 742,000 | 249,000 | 645,000 |
| Fuel | 124,000 | 294,000 | 285,000 | 782,767 |
| Maintenance of Way | 48,000 | 150,000 | 100,000 | 351,000 |
| Girdwood Layover Facility | 85,000 | 85,000 | 85,000 | 85,000 |
| Facility Maintenance | 130,000 | 138,000 | 130,000 | 138,000 |
| Station Services | 374,000 | 436,000 | 374,000 | 436,000 |
| Insurance | 800,000 | 900,000 | 800,000 | 900,000 |
| General and Administrative | 733,000 | 881,000 | 732,000 | 891,000 |
| Total | 3,351,000 | 4,941,000 | 3,499,000 | 5,543,767 |

## Transportation

Transportation costs include costs for crews, a supervisor, an allocation of dispatcher time, and office staff. In Scenarios A and C, all transportation personnel will be employees of the Alaska Railroad. Labor agreements of the ARRC require that both the Minimal and Expanded Service Levels operate with essentially a morning shift and an evening shift. In other words, each train set will have two crews operating them through the day. The crews will move the train sets to and from the Wasilla maintenance facility, where the rolling stock will be serviced after and before commuter runs. In Scenarios B and D, train crews will be employees of an independent contractor, and will not be subject to ARRC labor agreements. As a result, utilization of crews will greater and transportation costs will be less.

## Maintenance of Equipment

The calculations assumed that equipment would be maintained at the Wasilla car shop facility. Under a Minimal Service Level, the MOE cost per RDC equates to about $40,000 per year. ARRC estimates the inspection cost for an RDC at about $16,000 per year. The remaining sum will be applied to parts, maintenance work, and car washing and cleaning. MOE costs will increase over time as equipment ages. Ultimately, it will have to be replaced. Useful life of passenger rolling stock is typically about 30 years, with appropriate rebuilding. In Scenarios A and C, MOE forces will be ARRC personnel. In Scenarios B and D, they will be employees of an independent contractor. In both instances, the cost will be the same.

## Fuel

In the table calculations above, fuel costs are a function of diesel locomotive fuel consumption rates, miles traveled, the cost per gallon, and an allowance for idling and spillage. Because the Expanded Service Level will generate more RDC or locomotive miles versus the Minimal Service option, it will consume more fuel and trigger higher fuel costs. Also, because RDCs consume fuel at a lesser rate than do conventional locomotives, their fuel costs will lower than locomotive fuel costs.

## Maintenance of Way

These cost were a function of ARRC maintenance of way (MOW) costs per gross ton-mile (GTM) on the Wasilla – Anchorage segment and on the Girdwood – Anchorage segment of the right-of-way. The southern segment has a maintenance costs six times that of the northern segment. One reason is that the southern segment includes an avalanche area, while the northern segment does not. ARRC may determine to assess MOW charges on a different basis than a straight allocation of costs on a GTM basis. The railroad might also opt to use a single, uniform basis for the fee covering MOW expenses both north and south of Anchorage. The precise method would be subject to negotiation as part of the operating agreement between the commuter service's multi-jurisdictional agency and the ARRC.

## Facility Maintenance

In Scenarios A and B, these are costs for the upkeep and utilities of the Wasilla maintenance facility. While largely fixed, they include some cost components that vary in terms of train miles

covered and riders carried. In Scenarios C and D, the cost for the maintenance of a Girdwood layover facility is specifically cited.

### Station Services

These include the costs for five commuter stations to operate year-round in the first phase of implementation, assuming Scenarios A and B. These costs include:

- Custodial services for the station buildings and parking areas.
- Revenues services, including maintenance of automatic ticket vending machines (TVMs) and collecting the cash.
- Information services, announcing, for example, how many minutes until the next train.
- Utilities, keeping the stations warm and lighted.

Costs for Scenarios C and D are more, because these scenarios have more stations. Custodial and revenue services will be provided through outside contractors. While largely fixed, these costs include some components that vary in terms of riders served. There will be no station attendants, since tickets will be sold through TVMs, and train information will be provided through intercom systems.

### Insurance

This cost is driven primarily by general liability. The total insurance cost varies slightly with ridership, as reflected in the differentials between Minimal and Expanded Service Levels.

### General and Administrative

These G and A expenses are the public agency costs of a general manager, a controller, other office staff, and office expenses including rent and utilities, among other things. Also included is a 10 percent contingency on all train and maintenance labor and on costs for ARRC management of operating agreements. The contingency can also be used to provide rest facilities as needed for train crews laying over mid-day in Anchorage. Because Scenarios B and D use fewer crew persons than do Scenarios A and C, the contingency costs are less. As a result, the total G and A expenses are less.

## FINANCIAL PERFORMANCE

The commuter service's financial performance can be measured in terms of farebox recovery ratios and required subsidies of providing the service. Both measures consist of fare revenue and the operating costs discussed above.

### Revenues

Fare revenues are a function of fares and the number of trips. Fares were projected using two criteria: the distance traveled, and fares levels currently charged by various commuter rail agencies on the West Coast. It was assumed that commuters would purchase discounted tickets, and that the majority of off-peak riders would pay cash fares. A rate per mile of $0.10 is

comparable for commuter fares for both Mat-Su – Anchorage and Girdwood – Anchorage commute trips; the rate per mile for shorter trips like Eagle River – Anchorage would be higher. Also, cash fares would be about 10 percent higher. As an example, a regular commuter would pay $4.50 (a discounted ticket) for the 45-mile trip between Wasilla and Anchorage, exclusive of a prior or subsequent ride on transit (bus or shuttle). Using the ridership numbers determined in Chapter 1, revenues for the service options appear in Table 2-5, rounded to the nearest $1,000. These are revenues for the rail service only.

**Table 2-5**
**Year 2005 Commuter Rail Revenue Comparison**
**2000 Dollars**

| Commute Segment | Minimal Service | Expanded Service |
|---|---|---|
| Mat-Su – Anchorage | 603,000 | 772,000 |
| Girdwood – Anchorage | 34,000 | 178,000 |
| Total | 640,000 | 950,000 |

Mat-Su – Anchorage commuter revenues include trips between Eagle River and Anchorage. Under the Minimal Service Level, the Girdwood – Anchorage commuter revenues reflect the comparatively few riders who would utilize this service for trips to jobs in Anchorage. This segment's fare revenue under the Expanded Service Level is more than four times higher, reflecting commuters heading southbound to resort jobs in Girdwood as well as southbound recreationalist travel (skiers, hikers, and other sightseers).

## Farebox Recovery Ratios and Required Subsidies

In Table 2-6, revenues are compared to the operating costs for the four service scenarios using the two equipment types. The proportion of operating costs covered by fare revenue is known as the farebox recovery ratio, a standard measure of efficiency for public transit modes. Scenarios B and D, which assume independent contractor train crews and MOE forces, generate higher farebox ratios that Scenarios A and C, which assume ARRC train crews and MOE forces. Scenario D generates both the highest ratios and the lowest required subsidy, or operating costs less fare revenue, given a Minimal Service Level. This is because of two main factors: independent contractor labor and no Girdwood service.

The four service scenarios generate a range in farebox recovery of about 15 to 22 percent. By way of perspective, the Anchorage transit system, People Mover, presently has a farebox recovery ratio of about 22 to 24 percent. The ratio was about 18 percent four years ago. People Mover's management indicated that its goal is to move toward a 25 percent farebox recovery ratio.

Operated at a Minimal Service Level, Scenario B offers the highest farebox recovery ratios and the lowest operating subsidies. This is a result of limiting commuter service to the higher density Wasilla segment, and the greater flexibility provided to an independent contractor in assigning crews. In all scenarios, Expanded Service Levels generate slight or no improvement in farebox recovery relative to Minimal Service Levels. RDCs are noticeably more efficient than

locomotive-hauled train sets on the full corridor service Scenarios C and D. However, as noted previously, RDCs offer flexibility in operations, which can serve to minimize operating costs.

**Table 2-6**
**Year 2005 Farebox Recovery Ratios and Required Subsidies**
**2000 Dollars**

| Ratio Components<br>**Scenario A** | Minimal Service | Expanded Service |
|---|---|---|
| Revenues | 603,000 | 772,000 |
| Operating Costs – RDCs | 3,277,000 | 4,403,000 |
| Operating Costs - Locos / Coaches | 3,285,000 | 4,376,000 |
| Farebox Recovery - RDCs | 18.4% | 17.5% |
| Farebox Recovery - Locos / Coaches | 18.4% | 17.6% |
| Required Subsidy - RDCs | (2,674,000) | (3,631,000) |
| Required Subsidy - Locos / Coaches | (2,682,000) | (3,604,000) |
| **Scenario B** | | |
| Revenues | 603,000 | 772,000 |
| Operating Costs - RDCs | 2,800,000 | 3,898,000 |
| Operating Costs - Locos / Coaches | 2,807,000 | 3,884,000 |
| Farebox Recovery - RDCs | 21.5% | 19.8% |
| Farebox Recovery - Locos / Coaches | 21.5% | 19.9% |
| Required Subsidy - RDCs | (2,197,000) | (3,126,000) |
| Required Subsidy - Locos / Coaches | (2,204,000) | (3,112,000) |
| **Scenario C** | | |
| Revenues | 640,000 | 950,000 |
| Operating Costs – RDCs | 4,032,000 | 5,825,000 |
| Operating Costs - Locos / Coaches | 4,179,000 | 6,429,000 |
| Farebox Recovery – RDCs | 15.9% | 16.3% |
| Farebox Recovery - Locos / Coaches | 15.3% | 14.8% |
| Required Subsidy – RDCs | (3,392,000) | (4,875,000) |
| Required Subsidy - Locos / Coaches | (3,539,000) | (5,479,000) |
| **Scenario D** | | |
| Revenues | 640,000 | 950,000 |
| Operating Costs – RDCs | 3,351,000 | 4,941,000 |
| Operating Costs - Locos / Coaches | 3,499,000 | 5,543,000 |
| Farebox Recovery – RDCs | 19.1% | 19.2% |
| Farebox Recovery - Locos / Coaches | 18.3% | 17.1% |
| Required Subsidy – RDCs | (2,711,000) | (3,991,000) |
| Required Subsidy - Locos / Coaches | (2,859,000) | (4,593,000) |

### Future Performance

A 15-22 percent farebox recovery range is on the low side compared with other commuter rail services. For example, Caltrain on the San Francisco Peninsula generates a ratio of about 40 percent, and nearby Altamont Commuter Express service generates a ratio of about 50 percent. However, a 15-22 percent ratio range has precedent. During its first year of operation in the mid 1990s, the San Diego Coaster commuter rail service generated a 20 percent farebox recovery ratio. The ratio is now approaching 30 percent. Driving the improvement is increasing ridership, drawn by both the success of the service and the general increase in the population north of downtown San Diego that commutes southbound. The same factors likely will affect the performance of the Anchorage area commuter rail service. In short, the service's farebox ratio can be expected to improve over time.

## TRANSIT INTEGRATION

Transit integration, or intermodal integration as it is sometimes called, consists of the steps taken to coordinate service between two or more different transportation modes, whether provided by one operating entity, or several agencies. Transit integration includes:

- Schedule coordination
- Common fare structures, fare instruments and fare collection systems
- Common stations
- Combined marketing and information activities.

Clearly, transit integration is important and desirable, and should be pursued as part of any large-scale public transportation program. In Europe, a strong emphasis is placed on transit integration. In major urban areas special institutions are created specifically to ensure that the four main areas of transit integration are given major prominence as matters of public policy. Transit integration is an important part of every major transit project from its inception. Americans traveling in Europe are impressed by the way in which commuter and intercity trains, buses, ferries, and airports are interconnected in a seamless web so that one passes easily and naturally from one carrier to another, from one mode to another, and from one place to another. This feature has been the subject of serious and significant effort.

Transit integration should be approached with a "European" level of seriousness and emphasis in the development of a rail service for the Anchorage area. The market for this service largely consists of trips that must include a bus or shuttle trip at least at one end. The overall impression of the commuter rail "product" will depend on efficient rail service, comfortable seating and lighting, schedule and speed, stylish stations and paint scheme, and trendy graphics. It will also depend on the other part of the trip – the bus transfer – and the transition between the two.

In the competitive environment of transportation, most people with a driver's license have a choice of whether or not to use a transit service. Success in attracting customers who have a choice regarding the commuter rail service will depend upon the overall quality and convenience of the entire trip. And, of course, for those who do not have a choice, and must rely on transit,

such as the elderly and disabled, a service good enough to attract those who have a choice will also be that much better for everyone. Key issues facing rail service users regarding transit integration would be:

- Do trains and buses connect?
- Are they at the same place at the same time?
- Are they reliable, or are the connections "hit or miss"?
- Is there a consistent service pattern?
- Are there common stations and stops?
- Is there complete information, readily accessible, that explains in ordinary language how to pay a fare, and how to travel from one place to another?
- If you buy a ticket from "A" to "B", does that ticket really get you to "B", or is an unexpected fare supplement, transfer charge, or upgrade required?
- Does the connecting bus wander through all kinds of off-line loops and route deviations, or does it take a direct path to your final destination?

Resolving these issues in a customer-friendly way that leaves a positive impression of the entire trip is the goal of a transit integration plan. This section is not a complete plan, but rather touches on some of the transit integration issues, problems and opportunities that an implementing commuter rail agency would face in developing an attractive system.

It is noted that full compliance with the Americans with Disabilities Act (ADA) is a requirement of this and other transit projects. The exact cost of this compliance has to be determined at a later point. Close coordination with the local transit providers will facilitate this compliance.

## Schedule and Route Coordination

There are two transit operators in the Mat-Su – Anchorage area now. These are Anchorage's People Mover and Mat-Su Community Transit (MASCOT). Both services were contacted during the course of this study. Both managements expressed an interest in exploring how commuter rail and transit services could be integrated.

***MASCOT:*** Two existing services could be integrated into the proposed train schedules for start-up. MASCOT's Wasilla/Big Lake – Eagle River run has a stop now at Parks and Stanley, near the future site of a South Church Road commuter rail station. An Eagle River bound bus stops there now at 5:56 a.m., which is just before the 6 a.m. Anchorage-bound commuter train departure. In the evening, the Eagle River – Wasilla bus stops now at Parks and Stanley at 6:44 p.m., just before the proposed second Wasilla bound commuter train would arrive. With minor adjustments, integration of the train and bus schedules can be accomplished.

The existing Palmer – Eagle River service also offers integration opportunities. An Eagle River bound bus now arrives at the Mat-Su College Park and Ride at 6:20 a.m., just after the scheduled arrival of the first Anchorage bound train. In the evening, a Palmer bound bus stops at the park

and ride at 6:22 p.m., which is between the scheduled arrival of the two Wasilla bound trains. With minor adjustments, integration of the train and bus schedules is attainable.

***People Mover:*** People Mover has numerous bus routes beginning and ending their trips at the Downtown Transit Center at 6th and H Streets. Examples include Route 2 to Dimond Center, Route 7 to Spenard and Dimond Center, and Route 45 to the university / hospital complex area. These three routes have buses leaving at peak morning commute times. Conceivably, these routes could include stops at the Old Depot / Anchorage Intermodal Center to meet commuter trains before proceeding to their destinations. In the evenings, the routes could be reversed, bringing riders to the trains.

Ideally, arrangements with People Mover will provide shuttles buses or vans for express transit to the six major commuter destinations identified in Chapter 1. This sort of dedicated operation will provide for a three-minute maximum transfer from train to shuttle, and then an approximately 20-minute (or less) shuttle ride to various destinations. Riders from Mat-Su and Eagle River would board shuttle buses at the Anchorage Intermodal Center in Ship Creek to destinations in the Downtown Loop, Ted Stevens International Airport, Midtown, the university/hospital complex, and Dimond Center. The relatively few riders from Girdwood likely would make shuttle buses uneconomical. Rather, small van-like vehicles could be deployed to take these riders from Spenard to destinations in Midtown, the airport, and the university/hospital complex, and from the Ship Creek terminus to the Downtown Loop and Elmendorf. In terms of a precedent, the Marin County Transit District will deploy small shuttle vans to meet the proposed Sonoma Marin Area Rail Transit (SMART) commuter trains at Marin County destinations and distribute riders to the major employment concentrations in the county.

## Fare Integration

Fare integration is one of the basic component parts of an integrated transit network. Fare integration consists of two distinct but obviously interrelated parts, both of which must be present in order for transit integration to be a success. These two parts are:

- A common fare structure, and
- A common fare collection system and fare instruments.

The fare structure is the pricing of the service, and it answers such questions as:

- What is the price of a one-way fare from Wasilla to Anchorage?
- How much is a monthly rail-plus-bus pass between Matanuska and the university / hospital complex area of Anchorage?
- Is there a reduced-price monthly or semester pass for university students?
- Is there one for faculty members?

The fare collection system consists of all the equipment, personnel, paper, tickets, and cash acceptance systems seen by the customer, that are used to collect the customer's cash, and funnel it into the revenue acceptance system of the operators to support operations. The parts of the fare

collection system actually used by customers to show they have paid their fare are the "fare instruments." Tickets, the ticket machines that issue the tickets, transfers, on-board fare boxes, fare inspectors, monthly passes, "smart cards," tokens, and so forth, are all parts of the fare collection system.

In an integrated transit system, both fare structures and fare collection systems are common to multiple operators. Thus, a trip from Point A to Point B has the same fare whether made by bus, or by two buses with a transfer, or by bus plus train, or by bus plus train plus bus. The pricing is based on the offering of transportation from one location to another. The specific instrument used (ticket or pass) is accepted by all operators, and is not based on the types of vehicles used to make the trip. Sharing of the revenue generated by multi-carrier patronage is an accounting issue that has to be worked out between the operating agencies, and formalized in an agreement. It is not, in an integrated system, a burden laid upon the customer.

Complete fare integration will be very important to the success of the Anchorage area commuter rail service. It is clear that the majority of trip origins and destinations in the railroad corridors of Wasilla – Anchorage and Girdwood – Anchorage, whether residences, job sites, schools, government offices, etc., are more than an acceptable walking distance from stations. For the service to be attractive to people who have access to automobiles, and are therefore in a position to choose whether to use it or not, it must be possible to flow easily through a complete network of trains and shuttles in order to get from A to B. Part of making that flow easy is fare integration.

California examples offering a high level of fare integration can be found in the San Diego and Sacramento metropolitan areas. In Sacramento, buses and light rail trains of Sacramento Regional Transit (RT) have one universal fare structure and completely common fare instruments (tickets, transfers and passes). This also extends to the adjoining Yolo County Transit Authority (Yolobus) serving Woodland, Davis, West Sacramento and the Sacramento airport. The RT monthly pass is also the Yolobus monthly pass, and RT transfers are accepted on Yolobus. Thus, someone commuting from Woodland to a teaching post at Sacramento State University may use a Yolobus express from Woodland to Downtown Sacramento, RT light rail to University / 65$^{th}$ Street station, and the connecting RT buses from that station (buses meet every train) into the campus – all on one pass or cash fare/transfer. It is this high level of fare integration, along with service integration and the introduction of rail service, that has helped transit use in the Sacramento area to nearly double since the mid-1980s.

## Possible Next Steps

Transit integration is an inherent component of a successful project, and fare integration is part of overall transit integration. No specific assumptions were made about inter-system fares in the technical parts of this study. The demand forecast in Chapter 1 was prepared using a work-trip based methodology, with capture rates derived from the experience in other cities that have attempted integration of their commuter rail services with other transit. Accordingly, the capture rates reflect a composite of the patronage experience of other commuter rail cities given their success, or lack thereof, in developing effective integration of the commuter rail and other transit systems.

Fare levels developed for purposes of generating operating revenue figures for this study were also based on a composite of practice elsewhere, but they did not directly figure in the development of the demand forecast. Additional refinement of demand forecasts, and of revenue that would flow to each operator in an integrated system, will need to be done.

Given that fare integration is important, it will be necessary to look at this question in some detail in the course of project development. The fare revenue, fare collection equipment and demand implications need to be evaluated systematically by a consultant specializing in these areas. One option to seriously evaluate is a zone structure. A zone structure is typical of several commuter rail systems – Caltrain, The Coaster, Metrolink, etc. Specifically, ticket prices would be based on travel between zones, with each zone including various origins and destinations served by train and bus, rather than specific points. The zone structure and the fare structure associated with it would be subject to negotiation with the two transit operators, and also subject to potential modification.

Since People Mover is the larger operator in the corridor, and will likely remain so even with commuter trains in operation, a joint fare structure creates a high degree of integration with a single action. This would be especially true if the fare collection system were also identical, or at least fully complementary. An important concern is that passenger revenue generated by the zone structure be sufficient to meet commuter rail revenue targets.

## Physical Arrangements

Assuming schedules and fares are well integrated, a third major issue is the physical arrangements at passenger stations. The Anchorage area commuter rail service will be based on fairly simple and straightforward technologies and stations, using the traditional ARRC station sites and buildings wherever appropriate and possible (i.e., the Old Depot in Anchorage during wintertime). It should be easy to incorporate the customer-friendly physical characteristics and features of at-grade transit terminals into the stations.

As identified in the following section, major features assumed for stations relevant for transit integration include:

- Bus turn-around areas
- Shelter
- Information and ticket vending machines (TVMs)
- Lighting and telephones (a non system cost)

## Phase 1: The Pre-Implementation Period

In the period leading to implementation of service, there are obviously many design, procurement, engineering, and construction activities to be undertaken. From the foregoing discussion, however, it is clear that a lot of effort will also have to go into resolution of the many issues leading up to an effective integration of the commuter rail service with the two transit

operators in the service area. An initial list of activities to be undertaken by the implementing agency in this period of project development includes:

- Develop and implement passenger-friendly station design criteria, and establish collaborative working relationships with cities and transit operators along the line for the development of community-friendly stations.
- Conduct a practical, detailed, results-oriented study, in cooperation with two other transit systems in the corridor, to develop and implement a common fare structure and common fare collection system. This includes inter-agency agreements formalizing accounting systems and methods required to support integration, and specifications for fare collection equipment required for an integrated system.
- All systems adopt the integrated fare structure and fare collection system, associated agreements, and procure and install all necessary on-board and wayside equipment, to be implemented by opening day of the commuter rail service.
- Carry out a collaboratively directed, detailed, three-agency service planning study to identify short-term service integration measures that can be implemented for the start-up of rail service, given the constraints caused by a lack of a common headway module.
- Adopt a rail service plan, and two associated bus service plans maximizing service integration possibilities within rail start-up constraints.
- Develop a common transit user information system. For example, establish a telephone number where bus and train schedules are both provided, such a 1-800-BUS-RAIL. Train information should appear on the transit operator Webpages: MASCOT at www.valleyrides.com and People Mover at www.peoplemover.org. Connecting bus schedules should appear on the commuter rail service's Webpage.

## Phase 2: Start-up Operation Period – Partial Integration

At start-up, commuter rail service will be provided on a 45-minute peak headways. Coincident with the inauguration of this service:

- Implement the integrated fare structure and fare collection system.
- Implement the service adjustments identified for meaningful rail – bus service integration.
- Open the passenger and community-friendly stations.

Results of all aspects of the new service should be closely monitored, and the collaborative relationships developed in the course of planning for implementation should be retained for purposes of coordination and evaluation. Based on this, the three services should:

- Conduct a collaborative study to refine fare integration.
- Conduct a collaborative study to prepare for the more complete level of service integration, based on an Expanded Service Level rail pattern, including mid-day and weekend trains.

- Prepare all necessary agreements, and adopt agreements and plans.

### Phase 3: Operation Period with Expanded Service – Additional Integration

- Implement.
- Evaluate.
- Make adjustments as necessary.

## STATIONS

The analysis presented here studies commuter stations in terms of Wasilla-only service, reflected in Scenarios A and B, and full corridor service, reflected in Scenarios C and D. Five stations will be part of the Wasilla-only service concept, having a total cost of $5 million in 2000 dollars. Full corridor service would have eight stations, costing $7.9 million. In addition, six other potential stations are identified. The stations and their costs appear in Table 2-7. The study that follows is conceptual and is not intended to be a final design or analysis.

**Table 2-7**
**Station Site Locations and Costs**
**In Millions of Year 2000 Dollars**

| Wasilla-only Scenarios A and B | | Full Corridor Scenarios C and D | | Other Potential Corridor Stations | |
|---|---|---|---|---|---|
| **Stations** | **Costs** | **Stations** | **Costs** | **Stations** | **Costs** |
| Wasilla | 1.622 | Wasilla | 1.622 | Palmer | 0.662 |
| Matanuska | 1.069 | Matanuska | 1.069 | Eklutna | 0.982 |
| Eagle River | 1.238 | Eagle River | 1.238 | Birchwood | 0.996 |
| Elmendorf | 0.834 | Elmendorf | 0.834 | Potter | 0.925 |
| Anchorage | 0.265 | Anchorage | 0.265 | Indian | 0.834 |
| | | Spenard | 0.924 | Bird Creek | 0.925 |
| | | Dimond Center | 0.948 | | |
| | | Girdwood | 0.982 | | |
| Total | 5.028 | | 7.882 | | 5.324 |

Station locations are preliminary. Identification of locations facilitated development of representative costs. The locations were chosen for their proximity to rail tracks, access roads, and population centers. At some locations, adequate land will have to be acquired to provide right-of-way for station facilities and access roads. A site selection study is recommended for each suggested station to determine the optimum location.

Amenities at stations are likewise preliminary. There were included to facilitate development of costs. Specifics of the designs ultimately will be up to the decision of the communities to be served.

## Station Design

The sizes of the stations are based on the expected ridership of the population center. Also considered in the sizing of each station are the inclement weather conditions in Alaska.

Each location consists of a ticketing/waiting building, parking facility, and a platform. Prototypical station designs were developed to accommodate 50, 100, and 150 people, assuming a minimum of 10 square feet per person but with a minimum of seating. Natural gas heating is provided for all buildings. Each station will need telephones, bike racks, "station art" to enhance visual appeal and a movable wheel chair "lift" (for ADA compliance) with secured storage. All facilities are handicap accessible. Stations are designed to allow expansion if ridership increases. The parking facilities associated with each site contain one parking space per person of building capacity. Also included in parking are handicap parking, a bus lane, a drop-off lane, and a through lane. Bicycle parking could be provided at a minimal cost. The platforms are covered and illuminated. Platforms are to be set 8 inches above the top of the rail and as close to the tracks as possible (5 feet 2 inches).

Site layouts of the stations are presented in Appendix F as Figures F-1, F-2, and F-3. Typical station plans are presented in Figures F-4 and F-5.

Requirements for the construction of each station vary by site conditions. The specific station sites were chosen according to the availability of access roads to the rail system. Also considered are plans for future rail relocation and upgrades. Typical quantities used for the stations are presented in Table 2-8.

**Table 2-8**
**Typical Station Construction Standards**

| | |
|---|---|
| Access road/parking excavation | Area under the parking facility and access roadway 3 feet below ground surface. Area under the parking facility extends 1 foot beyond the facility's boundaries. |
| Building footing excavation | 5 feet deep, 3.5 feet wide around the building perimeter |
| Access road/asphalt structure | 2 inches of asphalt pavement, 6 inches of 3/4-inch crushed aggregate, 18 inches of 4-inch minimum crushed aggregate, non-frost susceptible sand or gravel |
| Platform | 300 feet long, 10 feet 4 inches wide, offset from centerline of tracks 5 feet 2 inches, and 8 inches above top of rail. At the building, the platform extends another 4 feet in width to meet the building. |
| Access road right-of-way | 60 feet wide |

The following summarizes each site. Costs are stated in Year 2000 dollars; inflation over time will cause these costs to increase.

## Stations for Wasilla-only Service and Full Corridor Service

The five stations envisioned for Wasilla-only service, and the additional three stations included in the full corridor service are discussed below. A spreadsheet showing the preliminary cost estimates is included in Appendix F as Table F-1.

- **Wasilla** – 150-person capacity – The station will be located near the City of Wasilla airport at the north edge of the city. The City of Wasilla owns the property and has verbally indicated that it will provide a site for the station, including parking for 300 vehicles and roadway access to the station site. The parking lot is sized to accommodate vehicles for passengers for two trains. Excavation for building footings and the roadway and parking areas has been estimated at 2 feet deeper that the typical excavation because of poor subsurface soil conditions. Approximate cost: $1.6 million.

- **Matanuska** – 100-person capacity – The suggested location for this station is along a frontage road that is to be constructed as part of the Glenn Highway / Parks Highway Interchange. Prior to the construction of the interchange, access will be directly from the Glenn Highway using an existing access point. As with the Wasilla site, the soils are typified by high ground water and organic soils. For this reason, excavation has been estimated to extend 2 feet beyond typical excavation. Approximate cost: $1.1 million. Alternatively, the station might be located 0.6 miles east of the existing railroad / Glenn Highway crossing at approximately the same cost.

- **Eagle River** – 50-person capacity – The station will be on the Fort Richardson Military Reserve near Eagle River. The existing roadway, Artillery Road, will be upgraded from one lane to two lanes for a distance of 300 feet. The existing security gate facility will be relocated and a security fence will be constructed along the roadway and around the station facility so that the public can access the station location without passing through military security. The building of this station will require the approval of the military. Approximate cost of the station, roadway, fence and gate work: $1.2 million.

- **Elmendorf Air Force Base –** 50-person capacity – This station will be on U.S. military property near the boundary between Elmendorf AFB and Ft. Richardson to serve military personnel. This site includes construction of 200 feet of access road. The building of this station will require the approval of the military. Approximate construction cost: $0.8 million.

- **Anchorage Intermodal Station** – 150-person capacity minimum – The existing Anchorage Passenger Terminal is a logical place for the Anchorage commuter rail station. The building is more than adequate for the anticipated passenger loading. However, during the four summer months there is a critical conflict. The Denali Star, the regularly scheduled northbound passenger service, departs Anchorage at 8:15 a.m. during the summer months. As a result, that train's equipment is in position and preventing commuter rail access to the terminal. In the remaining eight months of the year there currently are no such conflicts. The Denali Star carries a large contingent of tour people that arrive on buses. The commuter service will depend heavily on buses and/or shuttle vans to carry commuters from the terminal area to their final destinations around the city. Mixing the tour buses with the commute buses/vans would result in congestion and unnecessary delays for both services.

There is a project currently in the Anchorage area transportation program for an intermodal station. This facility is viewed as the interface point between passenger rail service and other available modes of surface transportation, including transit service. It is understood that the site selection for this facility has not yet been done, although logic would dictate that it should be located near the existing terminal and, if possible, incorporate the existing terminal. The challenge will be to locate the intermodal station so that it will work with the existing terminal during the summer peak and yet not leave a facility underutilized during the remainder of the year.

Given the layout of the tracks at the existing terminal and the requirement to position the Denali Star on the main track closest to the existing station (the "P-Main") for loading each morning during the summer, the logical location for an Anchorage Intermodal Station, where commuter trains would stop during summer months, is immediately east of the C Street grade crossing near the end of the Freight Warehouse. There is sufficient space available for track that will serve the commuter trains without blocking the main line. At the same time commuter trains can work their way through past the main terminal to and from Girdwood. A facility in this location will also have good bus and taxi access without mixing with the tour busses. It would also be possible to switch over and use the existing passenger terminal during the winter months. Transportation between the Anchorage Intermodal Station and the downtown business district will be by either the People Mover or independently operated taxis or shuttles.

Development plans for the Ship Creek area include a variety of land uses including two parking garages. One is proposed for a parcel of ground immediately south of the old Freight Warehouse located just east of C Street. The other is to be located south across the street from the existing terminal. If the Anchorage Intermodal Station can be incorporated with other uses, such as retail and/or food service, the building could see year-round use even with commuter traffic using the existing terminal during the winter. In addition the garages would provide an opportunity for secure parking of vehicles that commuters wish to have available in Anchorage during the day. The Intermodal Station and the existing Terminal could be connected to the garages by pedestrian bridges. At least one of the pedestrian bridges could be extended over the existing Terminal and across the five tracks at the station, with steps and/or elevators down, to allow safe access to all five tracks for passenger access.

It is understood that the funding of the Intermodal Station has been identified and that it is outside of the financial considerations of the Commuter Rail service. It is expected that the commuter service will cover the cost of automatic ticket vending machines (TVMs) which are included as capital costs. TVM cost: $260,000, or $65,000 per machine. There will be four machines: two at the Anchorage Intermodal Station and two at the existing terminal. The proposed parking garages and pedestrian bridges are part of redevelopment plans for the Ship Creek area and will be funded from other sources apart from sources identified for the commuter service.

- **Spenard –** 50-person capacity – This station will be in the midtown area of Anchorage between Spenard Road and 36$^{th}$ Street. The right-of-way will be purchased to construct the facility. Access will be direct from Spenard Road via Lois Drive. This station, when served

by the People Mover or independently operated shuttles, will serve the midtown business area and the university/hospital complex. Spenard Road is immediately south of the station location. The station will have to be positioned far enough north so that the crossing signals are not activated when the train is stopped. Buses and/or shuttles can enter Spenard at Lois, turn east on Spenard to 36th and then travel east on 36th straight through to the university/hospital complex. This corridor will also provide access to the Calais complex, the Frontier Building, Loussac Library, the telephone company headquarters, the IRS building and other commercial/retail facilities. Approximate cost: $0.9 million.

- **Dimond Center** – 50-person capacity – This station will be at the Dimond Center, a major shopping center in south Anchorage. Existing access, circulation roads and parking will be used. It is assumed that land will be made available at no cost to the project along the property line between the ARRC right-of-way and the Dimond Center. At this location the railroad track is several feet above the surrounding terrain. The station will be constructed at the level of the existing parking, while the platform will be constructed at track elevation. There will be a covered (not enclosed) stairway and an elevator for the handicapped providing access to the platform. Approximate cost: $0.9 million.

- **Girdwood** – 50-person capacity – This station will be situated on the main line tracks immediately north of the Girdwood Highway and within sight of the Seward Highway.[5] The station will be the south end of commuter rail operation, and will serve those elements of the community of Girdwood commuting to Anchorage for work and, possibly, providing improved access opportunities for winter recreationalists from Anchorage. The real property will need to be purchased to construct the building and parking facilities. A 200-foot, two-lane roadway will be constructed from the Girdwood Highway to provide access to the facility. Approximate cost: $0.9 million.

## Other Potential Stations

- **Palmer** – 50-person capacity – This station will be located at the Alaska State Fair Grounds in Palmer. Parking and access will be provided through use of the fairgrounds parking area. The railroad already provides passenger service between Anchorage and Palmer during the fair. It is expected that this service will continue. Commuter service from the Palmer Station is expected to extend by bus from Palmer to Matanuska, at which point riders will be expected to transfer to the Wasilla – Anchorage commuter rail equipment. This connection may be served initially by MASCOT, the local transit provider, particularly until the service is established and has patronage. The approximate cost of the Palmer Station is $0.7 million.

- **Eklutna** – 50-person capacity – This station will serve the community of Eklutna, located approximately 30 miles north of Anchorage. The station site is adjacent to existing streets and the tracks. Approximately 200 feet of access road will be constructed to provide access

[5] The 1999 draft *Commercial Areas and Transportation Master Plan, Girdwood, Alaska*, published by the Municipality of Anchorage, identifies a rail corridor from the ARRC main line along the west side of the Girdwood Valley to a new resort base. However, any likelihood of construction is many years away. Accordingly, for estimating capital and operating costs for start-up in 2005, a station near or at the existing station site is assumed.

to the station. Right-of-way will be purchased from Eklutna Village Corporation to construct the building, parking facility, and the access road. Approximate cost: $1.0 million.

- **Birchwood** – 50-person capacity – This station will be in the community of Birchwood, nearly midway between Eklutna and Eagle River[6]. The site is located adjacent to the Birchwood airport where many of the private aircraft in local area are based. This site will require construction of 250 feet of roadway. Right-of-way will need to be purchased to construct the building, parking facility, and access road. Approximate cost: $1.0 million.

- **Potter –** 50-person capacity – This station, located at the very south end of Anchorage, will be at the end of DeArmoun Road west of the Old Seward Highway. An existing city street serves the site. Right-of-way will need to be purchased to construct the building and parking facility. Approximate cost: $0.9 million.

- **Indian –** 50-person capacity – This station will be along the Seward Highway and positioned between the highway and the tracks. Indian is a small community nestled between the Chugach Mountains and Turnagain Arm. The present day population does not appear to justify the cost of constructing and maintaining a station at this time. However, with time, a large population base may develop. Right-of-way will need to be purchased to construct the building and parking facilities. Approximate cost: $0.9 million.

- **Bird Creek –** 50-person capacity – This station will be along the Seward Highway near the community of Bird Creek. This site is also located between the highway and the tracks. The site work includes construction of two hundred feet of access road. The community of Bird Creek is an established and growing local community that also provides some recreational destination opportunities. A park and pathway are found near the station providing an opportunity for bicyclists to take advantage of the commuter service for one leg of a round trip bicycle excursion. Therefore, the specific location of this station may change to avoid conflicting land use. Approximate cost: $0.8 million.

## SERVICE FACILITIES

Each train set, at the end of the last evening run, will pull into a facility where crews will clean and service the equipment. All service scenarios will require a maintenance facility or car shop at Wasilla. The Wasilla shop facility is intended to perform all maintenance except periodic or emergency heavy maintenance that can best be done by a full-scale railroad car shop. It is anticipated that ARRC would be contracted to carry out heavy maintenance at its Anchorage car shop. The Wasilla shop would be operated by a contractor, which might also be ARRC or any other qualified bidder.

The study investigated possible provision of all maintenance by ARRC's Anchorage shop, and concluded that the increasing passenger car roster of ARRC, together with commitments to perform winter maintenance on cruise line equipment, precludes maintenance of commute

[6] Alternatively, a station may be located at the newly developing community of Powder Reserve near Cluny Lake.

equipment unless a new shop were established. Thus, the study concluded that a maintenance shop in Wasilla is necessary to accomplish this function.

The Wasilla facility requirements and cost estimates are described below. In order to compare fully the capital costs of Wasilla-only Scenarios A and B to those of the full corridor Scenarios C and D, the requirements of an overnighting facility in Girdwood appears below as well. At Girdwood, only minimal overnight storage and service facilities are needed, sufficient to support equipment cleaning.

## Wasilla Facility

The basic elements of the car shop include:

- A 1,700-foot siding off of the mainline track where the rail service equipment will be stored overnight. This includes two switches in the main line. The facility itself will have three tracks: a 1,200-foot run through track linking with the siding and two stub-end tracks, totaling 1,500 track feet. This track arrangement will permit two train sets to be maintained without one blocking the other, and will also provide room for fleet expansion. Facility track feet will total 4,400 feet.
- The facility will include a 250-foot by 500-foot insulated prefabricated metal shop building with a cast in-place concrete floor, work bench/shop area, small office area and utility / restroom area.
- The area around the building will be paved. There will be a paved access road to the facility tracks. The areas on each side of, and between, the rails will be paved to facilitate all weather vehicular access to the rail equipment.
- The site improvements around the facility – including the building and surrounding yard area, access roads, and rail equipment tracks – will be illuminated.
- The maintenance facility will be furnished with the appropriate maintenance tools and necessary supplies and equipment for routine servicing and cleaning of the rail equipment including four 100-ton screw jacks, crane or hoist, and welding, grinding, bending and machining equipment. The facility will have its own electrical generator in case of a local power failure.
- The maintenance facility will be furnished with a 4x4 pickup equipped with a snowplow for maintaining the parking areas and maintenance access areas. In case of Wasilla-only service, two pickups will be based at the facility.

## Girdwood Facility

The full corridor service concept, reflected in Scenarios C and D, would require an overnighting facility near the south end station in Girdwood. There, the equipment would be cleaned and made secure in preparation for the next morning's commuter runs. The rolling stock would be maintained in Wasilla. This would require that units be "swapped" in Anchorage, so that those units utilized on the Girdwood runs could return to Wasilla regularly for maintenance and washing. The basic elements of the overnighting facility include:

- A siding off of the mainline track where the rail service equipment will be stored overnight. This includes a switch in the main line and a stub track. The Girdwood facility will include a single spur track of approximately 275 feet – a length sufficient for either an RDC 1 or a train set consisting of a locomotive and a cab car.
- The facility will include a 24-foot by 24-foot insulated prefabricated metal shop building with a cast in place concrete floor, work bench/shop area, small office area and utility/restroom area. The RDC will be stored uncovered in a fenced area.
- The area around the building will be paved. There will be a paved access road to the facility track. The areas on each side of, and between, the rails will be paved to facilitate all weather vehicular access to the rail equipment.
- The site improvements around the facility – including the building and surrounding yard area, access roads, and rail equipment tracks – will be illuminated.
- The facility will be furnished with the appropriate maintenance tools and necessary supplies and equipment for routine cleaning of the rail equipment, including headend power (HEP), the electrical "hook-up" required to provide electricity to the equipment's systems and prevent freeze-up. The facility will have its own electrical generator in case of a local power failure.
- The facility will be furnished with a 4x4 pickup equipped with a snowplow for maintaining the parking areas and maintenance access areas.

Requirements for the construction of each facility vary by site conditions. Typical construction standards for the two service facilities are presented in Table 2-9.

**Table 2-9**
**Service Facility Construction Standards**

| | |
|---|---|
| Excavation under paved areas | Area under the parking facility and access roadway 3 feet below ground surface. Area under the parking facility extends 1 foot beyond the facility's boundaries. |
| Building foundation excavation | Wasilla: 5 feet deep for the entire footprint of the building with an additional 2 feet deep by 3.5 feet wide around the building perimeter for footings. Girdwood: 3 feet, etc. |
| Access road/asphalt structure | 2 inches of asphalt pavement, 6 inches of 3/4-inch crushed aggregate, 18 inches of 4-inch minimum crushed aggregate, non-frost susceptible sand or gravel |

The following summarizes each site. Costs are stated in year 2000 dollars; inflation over time will cause these costs to increase.

- **Wasilla** – The car shop for the northern end of the commuter rail system will be located adjacent to the Wasilla Station near the City of Wasilla airport at the north edge of the city.

The City of Wasilla owns the property and has verbally indicated that it will provide a site for the shop facility. Approximate cost: $8,540,000 (rounded to the nearest $1,000), including $250,000 in equipment. Pick-ups will be leased.

- **Girdwood** – The overnighting facility for the southern end of the commuter rail system will be located adjacent to the Girdwood Station. Approximate cost: $246,000 (rounded to the nearest $1,000).

Spreadsheets showing the preliminary cost estimates are included as Tables F-2 and F-3 in Appendix F. To assure that the rolling stock will start reliably under extremely cold conditions in Girdwood, RDCs will have to be equipped with block heaters, battery heaters, and lub oil heaters. These specifications could be noted when contracting for the remanufacture of these cars. The power would come from the HEP located at Girdwood.

Alternatively, the Girdwood overnighting facility could be enclosed. This would require a prefabricated metal building, and attendant improvements. The metal building would offer protection for the equipment during the night. However, it should be noted that commuter rail equipment is overnighted uncovered in other places with challenging wintertime conditions. These include Metra in Chicago. As long as headend power is provided, systems do not freeze up. The study calculated costs for an enclosed facility in Girdwood at $824,000. A breakout of this cost appears in Appendix F Table F-4.

## TRACK IMPROVEMENTS SOUTH OF ANCHORAGE

A complete comparison of the capital costs for the Wasilla-only service scenarios versus the full corridor service scenarios requires a preliminary cost calculation of track improvements. This review has focused on the Anchorage to Girdwood section, since track work is underway that will result in competitive run times from Wasilla to Anchorage.

The improvements discussed below would occur simultaneously with improvements to the Seward Highway that would move the highway away from the hills on the north side of the Turnagain Arm. These highway improvements are cited in the Alaska Department of Transportation and Public Facilities' (ADOT/PF) Statewide Transportation Improvement Program (STIP) for the 2004-2006 period. They are assumed here to be completed by 2005. Because the rail right-of-way is south of the highway from Anchorage to Bird Point, it would be relocated as a direct consequence of the highway improvements.

From the Anchorage yard, location of the main passenger terminal, the rail alignment skirts the Knik Arm of Cook Inlet for about two miles, then turns southeast and climbs away from the water. There are a number of at-grade crossings intermixed with a few grade separated crossings and there are frequent industrial sidetracks scattered through the area. There is a mix of residential, commercial and industrial development built up against the right-of-way throughout the city. Major freight customers include building materials firms providing aggregates, concrete and asphalt throughout the Anchorage bowl. All of the gravel used as raw material for these operations comes by unit train from the Palmer area. The gravel train operations, when combined with the other passenger and freight operations, has prompted the railroad to initiate a

project to provide double track from the Anchorage yard south to about MP 105.6, just south of the Anchorage Sand and Gravel plant. South from that point, the track alignment is largely as originally constructed and, due to curvature, limits train speeds to the 25-mph to 45-mph range. Because of the gravel operations, the current yard limit is at MP 105, some nine miles south of the actual yard.

From MP 105 to MP 103 the alignment descends to water grade paralleling the Seward Highway along the Turnagain Arm of Cook Inlet. The old Potter Section House, currently a museum, is located at MP 100.5. From MP 103 to MP 90.5, the community of Indian, the tracks are between the Seward Highway and the water with little or no room to spare. From MP 90.5 to MP 88, the highway moves inland leaving the tracks on a separate alignment adjacent to the water. From MP 88 to and around Bird Point at MP 82.2, the tracks are again tightly placed between the highway and the water. MP 82.2 to MP 80.8 is the Bird Point section where the tracks follow the water's edge around a rocky point to rejoin and cross under the highway at MP 80.8. ADOT/PF is just completing construction of a picnic area and scenic overlook at Bird Point. From MP 80.8 to Girdwood, the tracks are against the base of the mountain with the highway between them and the water. According to the ARRC Track Charts, the curves vary from less than one degree of curvature to over 10 degrees throughout much of the Anchorage – Girdwood section. It is this curvilinear alignment that forces the current slow operating speeds. There are also a number of avalanche zones between the Potter Section House and Girdwood, which are of concern during the winter months.

The ARRC does not currently operate with block signal control. Train operations are controlled by central dispatch.

## Track Design Parameters

Passenger equipment can operate at a slightly higher rate of speed than freight traffic. However, because freight is the largest traffic component, freight operations typically govern track design. This study has assumed a 2-degree curve with 1.5-inch superelevation[7] as the design standard. At this standard, passenger trains can safely operate at 60 mph with an underbalance[8] just under 4 inches. This assumption is implicit in the improvements that follow.

## Improvements

The following improvements are noted by milepost (MP). As a rule, those improvements made strictly to ensure a more car-competitive run time of 57 minutes between Girdwood and Anchorage are assumed to be a responsibility of the multi-jurisdictional commuter rail agency. The current run time is 80 minutes. The costs below are stated in Year 2000 dollars; inflation over time will cause these costs to increase.

***MP 115 to 105.5*:** This section extends from the Anchorage yard south to a point just south of the Anchorage Sand and Gravel dump track. ARRC is presently double tracking this section to

[7] Superelevation is difference in elevation between the two rails, with the outside rail elevated higher than the inside rail on curves.

[8] Unbalance is the amount tilt off normal caused by centrifugal force as the train passes through a curve. Typically, passenger trains can operate with up 5 inches of unbalance without creating an uncomfortable sensation for the passengers.

improve the capacity. According to ARRC, the improvement will include double tracking the Campbell Creek Bridge, which is currently a single-track structure. The estimates appearing below do not include the cost of double tracking this section, as it is understood the work is already funded and well underway.

***MP 105.5 to 101:*** This section parallels the Seward Highway across Potter Marsh. The Track Charts show that passenger service could operate at 60 mph through this section with no track changes. The estimates, therefore, do not include any costs for track changes in this section.

***MP 101 to 90.7:*** This section, Potter to Indian, parallels the Seward Highway with existing curvature ranging up to a maximum of 6° 05' and is between the highway and the inlet. Both freight and passenger traffic are currently restricted to 40 mph operating speed. ADOT/PF is in the beginning stages of a project to improve the highway alignment and provide passing lanes through this section. Any such work will straighten the highway alignment and, because of positioning, the rail alignment as well. For this analysis, it was assumed that the section will be straightened to provide a maximum of 2° curvature and a 60 mph alignment, and that the cost of the work will be borne by ADOT/PF, because it will be done in conjunction with the highway improvements. The costs for the improvement of this section are estimated at $36.5 million, exclusive of any roadway costs.

***MP 90.7 to 88.1:*** This section is through the community of Indian. There is sufficient separation between the highway and the tracks so that any track alignment changes will be independent of the highway. This section includes curves up to 6°. In order to achieve the desired 60-mph operating speeds, the alignment will have to be improved to a maximum of 2° of curvature. This section follows the shoreline, and it is expected that the commuter rail operating agency (rather than ARRC) will have to fund the realignment of this section. Estimated costs for improvement of this section are $9.2 million.

***MP 88.1 to 82.3:*** This section is shown in the detailed estimate as three sections, all of which have similar characteristics in that the tracks parallel the highway and are located on the water side. The MP 83.85 to 84.5 section is impacted by a project currently under development by ADOT/PF. According to ARRC's Chief Engineer, Tom Brooks, the changes currently being included in that project will only provide a 40-mph alignment. These are scheduled for construction in 2002. It is suggested that ARRC, on behalf of the commuter rail agency, work with ADOT/PF to achieve a 60-mph alignment for any track changes. The remainder of this section is also scheduled for improvement by ADOT/PF as evidenced by the selection of a consultant to provide control surveying and mapping for the Potter to Bird Point section. The costs for improving this section are estimated at $20.6 million.

***MP 82.3 to 81:*** This is the section at Bird Point. The track alignment follows the edge of the water, while the highway alignment cuts up and over the point and crosses tracks on an overpass structure at MP 80.8. ADOT/PF is nearing completion of a new picnic/viewing area on Bird Point. Realigning the tracks through this section would cut through the new viewing area and would require construction of a new grade separation structure. This section is currently 35-mph track. This analysis assumes that no changes will be made because they potentially conflict with

newly constructed facilities and require a new structure. The estimates do not include any costs for this section.

***MP 81 to 74:*** This section extends from Bird Point to the Girdwood Station. Throughout the section, the highway is between the tracks and the water. The highway has recently been realigned and should not require additional work in the near future. As a part of that work, railroad curves 79 through 79E were straightened by ADOT/PF. This study has examined the ADOT/PF as-built plans for this area and determined that track realignment is possible through this section that will allow 60-mph operating speeds without encroaching on the highway and without excessive excavation. It should be noted that most of the excavation required would be rock excavation. It is expected that this area will have to be improved by the JPA at an estimated cost of $12.7 million.

### Summary

In summary, in order to meet the requirements for 60-mph operation, much of the alignment from Girdwood to Potter must be upgraded. These improvements, combined with completion of the double track project through Anchorage and relocation of the yard limit from MP 113.5 to 105, will reduce the overall run time from Girdwood to Anchorage from the current 80 minutes to approximately 57 minutes. An overall run time of 57 minutes is more competitive with the trip time required for a motor vehicle.

It should be noted that the Girdwood to Potter section, for both the highway and railroad, is vulnerable to closure by avalanches during mid to late winter. The estimates provided include signal systems that will detect when the tracks are blocked by an avalanche and provide a red signal to the train operator and provide an alarm for central dispatch.

Total costs for the track improvements are $79.3 million. Of this amount, ADOT/PF conceivably would be responsible for $44.5 million, as these costs would be incurred in conjunction with the Seward Highway relocation. The multi-jurisdictional commuter rail JPA would be responsible for the remaining $34.8 million, since these would be costs incurred for reducing run time for commuter trains to under 1 hour. A spreadsheet showing the preliminary cost estimate is included in the Appendix as Table F-5. It should be noted that ARRC trains likely will benefit from these improvements as well. Its trains would have faster travel times as a consequence, and accordingly should experience operating cost savings. To the extent that it does, ARRC may be willing to share some of the costs that would otherwise be the exclusive requirement of the commuter rail JPA. Beyond cost savings, ARRC is committed to reducing the run time of its trains. The right-of-way improvements could provide an opportunity to demonstrate this commitment.

## PLAN SUMMARY AND RECOMMENDATIONS

This operating and financial plan addresses the key elements for implementation of a commuter rail service from a technical perspective. Specifically, the study analyzed the optimal schedules and rolling stock, calculated operating costs and revenues, and determined capital requirements. As a result of this assessment, the study recommends the following.

## Minimal Service Level

A Minimal Service Level is recommended for start-up of the service in 2005. This service can be expanded to accommodate mid-day and weekend riders in later years, with no additional requirements for rolling stock.

While the Minimal Service Level scenarios generate farebox recovery ratios below that of other commuter rail services, these ratios will improve over time, as riders are drawn to the system. These scenarios also result in lower operating subsidy requirements versus the Expanded Service Level scenarios.

## Remanufactured RDCs

Remanufactured RDC 1s are recommended as the rolling stock for the service – subject to availability. RDC 1s are less expensive to operate on short distance, light density lines versus locomotive-hauled equipment. ARRC, which may be contracted to operate and maintain the vehicles, is very familiar with this type of equipment. They also offer operational flexibility in that train set length can easily be tailored more tightly to ridership.

The study recommends that, upon formation of the cross-jurisdictional agency to manage the commuter rail service, the agency investigate thoroughly whether or not RDC 1s exist in sufficient number and salvageable condition. If RDCs are not available or cannot be remanufactured economically, then the agency should acquire F59 PHI locomotives and Bombardier bi-levels.

## Wasilla-only Service

Reflected by Scenarios A and B, Wasilla-only service will require about $28.2 million in capital costs for rolling stock, five stations, and a Wasilla car shop. Contingencies on station and car shop costs will total $1.9 million. In addition, there will be expenses for pre-operations testing of all systems, excluding rolling stock (for $2 million per car, the remanufactured RDCs should be fully functional when delivered). Pre-operations testing should be considered a capital cost, since it will occur in advance of opening the service to the public. The expense is assumed here to be 5 percent of total capital costs, including contingencies but excluding rolling stock, or about $700,000. Pre-operational testing numbers vary widely for commuter rail systems, but a 5 percent allowance is within the range that could be expected.

By contrast, full corridor Scenarios C and D will require about $70.1 million in capital costs for rolling stock, stations, a Wasilla maintenance facility, a Girdwood overnighting facility, track improvements, $8 million in contingencies for facilities and track, and pre-operations testing expenses of about $2.6 million. A breakdown of the capital costs appears in Table 2-10, rounded to the nearest $1,000. These are stated in Year 2000 dollars. Over time, inflation will increase these costs.

**Table 2-10**
**Capital Cost Summary**
**Year 2000 dollars**

| Cost Category | Wasilla-only Scenarios A and B | Full Corridor Scenarios D and C |
|---|---|---|
| Station Costs | $5,028,000 | $ 7,883,000 |
| Wasilla Car Shop | 8,540,000 | 8,540,000 |
| Girdwood Overnighting Facility (unenclosed) | | 246,000 |
| Track Improvements | | 34,810,000 |
| Rolling Stock | 14,000,000 | 16,000,000 |
| Pre-operations Testing | 678,000 | 2,572,000 |
| Total | $28,246,000 | $70,051,000 |

Note: The costs above for stations, service facilities, and track improvements include amounts for contingencies.

Given the high costs of improvements south of Anchorage, and the light ridership expected, this study concludes that commuter service to Girdwood is impractical for 2005. Rather, Wasilla-only service is recommended for start-up. Also, Scenarios A and B result in higher farebox recovery ratios and lower operating subsidy requirements than do Scenarios C and D. Full corridor service can be implemented as demand materializes in the future.

It is also recommended that the Alaska Railroad's summertime Denali Star accept commuter riders between Anchorage and Wasilla. The train should only pick-up and deliver passengers in Anchorage and Wasilla, thus minimizing travel time impacts. Including the Denali Star in the Minimal Service Level will provide a reverse commute option for Anchorage residents working in Mat-Su at little cost to either the commuter rail agency or ARRC. To compensate ARRC for any added expense, a portion of the resulting fare revenue should be awarded to the railroad.

## System Operator

The question of whether the commuter rail agency should hire ARRC or an independent contractor for provision of operating crews will depend largely on ARRC's ability to provide crews on a basis competitive with an independent contractor. An independent contractor would be unconstrained by the railroad's labor agreements, and would have greater flexibility in assigning crews to work split shifts. According to the calculations shown earlier in Table 2-4, using an independent contractor can generate a savings in subsidy requirements of about $500,000 per year at start-up in 2005. Therefore, to pursue the commuter rail contract successfully, ARRC would need the same flexibility that an independent contractor would have.

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# CHAPTER HIGHLIGHTS

## CHAPTER 3: FUNDING OPTIONS

- A variety of federal sources of funds may be available for a share of the capital cost of the commuter rail project, whereas little or no federal sources are available to cover long term operating costs.
- Capital funds are needed for track improvements, stations, and rolling stock for the service. Operating funds are needed to cover the required subsidy.
- Federal sources for capital funds include New Rail Starts funding and Congestion Mitigation and Air Quality (CMAQ) Program funding, among others. State and local sources should also be explored. State and local sources successfully used by other public transportation agencies for capital projects include statewide and countywide sales taxes, motor vehicle fuel taxes and registration fees, and development impact fees.
- Funding sources for operating subsidies include the CMAQ Program in the short term, as well as new or increased taxes and fees enacted on the state and/or local level. These could include property taxes, rail sales taxes, fuel taxes, automobile registration fees, and a bed tax (hotel occupancy tax).
- The study investigated how commuter rail services have obtained initial capital and ongoing operating funds to understand how funding might be obtained for an Anchorage area commuter rail service. Five comparatively new commuter rail services were reviewed. The study found that the agencies relied primarily on state and local funding sources for initial capital costs, though three of the operations did tap federal funding. None of the services utilized federal funds for operating subsidy requirements, relying instead on state and local sources.

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# Chapter 3
# FUNDING OPTIONS

## INTRODUCTION

The preceding chapter identified capital costs of $28.2 million (Year 2000 dollars) for the initiation of a Wasilla to Anchorage commuter rail service. For the start-up year of 2005, the service will generate an operating subsidy requirement of $2.2 million, assuming a Minimal Service Level, RDC rolling stock, and independent contractor transportation personnel. As a result, the service will require funding sources for both capital expenditures and operating subsidy requirements.

Generally speaking, federal and state sources have been used by other commuter rail agencies for capital improvements. While federal funds are available for capital improvements, this is not so for operating subsidies on any longer term basis. In short, the federal government extends a helping hand to build systems, but sees operations as the responsibility of the local areas served. As a result, commuter services tend to rely on state funding, as well as funds generated locally through a variety of mechanisms, to cover operating cost subsidies.

This chapter outlines options available to fund capital costs and operating subsidies. The chapter is presented in three sections. The first section identifies potential capital and operating funding sources and innovative financing strategies that may be used for the commuter rail service. The second section presents strategies used by a peer group of similar new-start commuter rail systems to fund both capital and operating costs. The third section summarizes funding approaches for consideration.

As discussed in the following chapter, commuter rail services in the U.S. have a variety of management structures, each mostly a product of the area they service. In moving forward, the Anchorage commuter rail service will also need to establish a management structure, most likely a multi-jurisdictional agency composed of the municipalities of Anchorage, Wasilla, Palmer, the Mat-Su Borough and potentially the Alaska Department of Transportation and Public Facilities. Once the agency is formed to firmly articulate the vision of a commuter rail service for the Anchorage area, it would be appropriate for the agency to engage in a detailed funding plan that would seek specific funds for the building and operation of commuter rail in the Anchorage area.

## FUNDING FOR CAPITAL AND OPERATING COSTS

The one-time capital costs for initiating commuter rail service are often more easily met than the ongoing operating subsidy needs of the service. A variety of federal sources of funds are available for a share of the capital cost of the project, whereas little or no federal sources are available to cover long term operating costs. Thus, the focus of the discussion of capital sources is on federal funds and the funding match needed, and the discussion of operating sources focuses on state or local sources of funds.

The availability of funding will depend ultimately on the scope and definition of the project. For purposes of this study, a commuter rail project using the existing freight rail line is assumed to require funding for station and Wasilla car shop construction, communications upgrades, and RDCs (or alternatively push-pull conventional rolling stock). Operating funding is assumed to be needed for the portion of the operating costs not covered by passenger fares.

As the project is further defined, certain specialized federal funding sources may be considered for their applicability to specific project elements. For example, if a commuter rail/bus intermodal transfer facility is needed and is included in the project scope and description, then federal discretionary bus funds might be sought. If the project includes an Intelligent Transportation Systems (ITS) element, then funding for ITS research and development might be used. A list of potential sources targeted for elements not currently assumed to be a part of the core project is provided at the end of the section on capital funding sources.

## CAPITAL SOURCES OF FUNDS

Primary sources of federal capital funds for the commuter rail project are from the Transportation Equity Act for the 21st Century (TEA-21). TEA-21 was enacted June 9, 1998 and authorizes the federal surface transportation programs for highways, highway safety, and transit for the six-year period 1998-2003. It includes both formula and discretionary funding.

The State of Alaska has been successful in securing discretionary funding from TEA-21 in the form of allocations for High Priority Projects (Section 1602), a separate authorization of grants to the rail passenger operations of the Alaska Railroad (Section 7204), New Rail Starts funding for the Girdwood Commuter Rail Project (Section 5309), and various bus allocations (Section 5309). In addition to these discretionary sources of funds, the State receives formula transit funds for bus capital (Section 5307), Congestion Mitigation and Air Quality Improvement funds (CMAQ), and Surface Transportation Program (STP) funds.

There are several sections of TEA-21 from which funds could be available. Given Alaska's success in securing discretionary funds, and the fact that this project represents a major capital investment worthy of the significant effort needed to obtain federal discretionary funds, one of the most likely sources for the commuter rail project is Section 5309 New Rail Starts funds. New Rail Starts funding and other potential federal sources of funding are described below.

### New Rail Starts Funding

Section 5309 New Rail Starts funding is a discretionary funding program that requires projects to be evaluated using adopted criteria. Under TEA-21, the New Starts evaluation process requires that Federal Transit Administration (FTA) establish overall project ratings of "highly recommended," "recommended," or "not recommended." Additionally, for evaluating local financial commitment, the consideration of local funding beyond the required non-federal share has been incorporated into statute. Projects requiring less than $25 million in Section 5309 New Starts funding are exempt from rating.

There is substantial nationwide competition for New Rail Starts funding, resulting in increasingly larger local commitments of funds and smaller federal participation in the projects. The federal New Rail Starts share of funding for the projects that FTA rated for FY 2001 averaged 58 percent. While many criteria are considered in the evaluation process, a target of 50 to 60 percent Section 5309 funds as a share of the capital cost of the project is desirable to help secure a "recommended" or "highly recommended" rating for the project. After FTA has found the project to be worthy of a federal funding commitment through the evaluation process, the federal funding commitment is documented in a Full Funding Grant Agreement, which outlines the federal participation in the project.

The process for qualifying for and obtaining New Rail Starts funding can take several years and requires compliance with federal project development requirements such as preparation of environmental documents. As with all discretionary funding, significant outreach efforts are needed to inform decision-makers of the project and its merits, and to justify the funding requested.

In FY 2000, Congress appropriated $9.8 million in New Rail Starts funds for the Girdwood to Wasilla Corridor Rail Improvement Project. Congressional clarification that ARRC's New Start corridor is Girdwood to Wasilla was received in the 2001 appropriation. In that appropriation, the railroad received an additional $14.9 million in New Start funds. If federal funds are pursued for this project, a funding plan and strategy that address the relationship of the Girdwood Commuter Rail project to the proposed South Central Commuter Rail project must be developed.

## Congestion Mitigation and Air Quality Improvement (CMAQ) and Surface Transportation Program (STP) Funds

These funds are provided to the state on a formula basis and are eligible for use on capital projects such as the proposed commuter rail project. According to the TEA-21 apportionment estimates, Alaska's average 1998-2003 apportionment for STP is $61.8 million and for CMAQ is $15.1 million. The availability of these funds depends on whether they are fully programmed to existing projects and/or whether any could be reprogrammed for the proposed commuter rail project.

## Alaska Railroad Funds

Congress authorized $5.0 million per year from 1998 to 2003 for the ARRC under Section 7204 of TEA-21; the actual amount appropriated has been less than $4.9 million per year of Transit Formula grant funds for capital improvements to the ARRC's passenger operations. ARRC has received several earmarks from the Section 5307 Bus program, and from the Section 5309 Capital program for facilities. Moreover, the Federal Transit Administration (FTA) has recently determined that ARRC may be eligible for the Section 5309 Fixed Guideway Modernization (FGM) formula program.

The availability of these funds depends on whether the funds have been fully programmed for other purposes and/or whether any funds could be reprogrammed by ARRC for the commuter rail project.

## Non-Federal Matching Funds

Although the matching rate for most federal funds is 80 percent federal and 20 percent local, higher local (non-federal) shares tend to be considered more favorably when discretionary federal sources are pursued. For New Rail Starts funding, 40 to 50 percent non-federal share should be planned for the project to be competitive. The non-federal share is usually provided by state or local funds dedicated to transportation or legislatively approved for the project. Some potential sources are described below.

Changes in eligible non-federal match under TEA-21 (Section 1301 of the Act) allow certain locally acquired land to qualify as a part of the non-federal share of the project. Specifically, it allows the fair market value of land lawfully obtained by the State or local government(s) to be applied to the non-Federal share of project costs. Land acquired as a part of the commuter rail project might be eligible to match federal funds on the project.

## Federal Aviation Administration (FAA) – Surface Transportation to Airports

Current law permits the use of certain Federal Aviation Administration (FAA) authorized funding sources for transit-related projects that serve airports. The Passenger Facility Charge (PFC) program provides a source of funds for capital for airport infrastructure. With the FAA's approval, the Ted Stevens International Airport could charge boarding passengers a $1, $2, or $3 facility charge. Some or all of the resulting revenue might be used for the commuter rail capital expenditures at the airport, should the commuter service go there one day. At present, however, an airport commuter rail stop is not included in the service concept. This source is not frequently used for transit services to and from airports.

## Other Federal Sources

As the project is further defined, elements of the project may be eligible for certain federal sources. Examples of these sources include:

- Bus and Bus Facility discretionary grants
- Job Access and Reverse Commute grants
- Transportation and Community and System Preservation pilot program
- Intelligent Transportation Systems Research and Development grants
- Community Oriented Policing (COPS) grants

Further analysis of the eligibility of project elements for these and other sources can be conducted as new elements are defined and a detailed funding plan is prepared.

## State and Local Sources

A complete review of potential state and local sources of funds available for the commuter rail project should be undertaken to develop a comprehensive project funding plan. For new or expanded sources of funds, such an analysis should consider the revenue generation potential, the stability and reliability of the source, the legislative authority needed to create or expand the source of funds, likelihood for voter approval (if necessary), ease of administration, ability to

leverage the funds, and flexibility to use the funds on various transportation projects and for operations and capital needs.

State and local fund sources successfully used by other public transportation agencies for capital projects include:

- Statewide sales taxes dedicated to transportation
- Countywide sales taxes dedicated to transportation
- Motor vehicle fuel taxes
- Motor vehicle registration fees
- Development impact fees

A benefit of some of these sources (if appropriately authorized) is that they can be pledged for short or long term debt financing. For example, the revenue stream can be used to accelerate capital funding for the project using revenue bonds or notes.

Private sector funding through various public/private joint development arrangements has also been used to develop or enhance sites around rail stations and to provide revenues (e.g., from air rights leases, long term ground leases, and access to telecommunications bandwidth on fiber optic lines) for capital projects.

Because commuter rail projects often cross jurisdictional boundaries and serve many communities, local jurisdictions participate in funding capital and operating costs of the project. Funding support is derived from local sales taxes, city general funds, or other transportation funding available to the local jurisdiction. Additionally, such local support has taken the form of station construction and maintenance. For example, the Southern California Regional Rail Authority (operator of the Los Angeles area Metrolink commuter rail service) requires cities to be responsible for stations within their jurisdiction.

## Innovative Financing

***Loans and Loan Guarantees:*** TEA-21 encourages the use of innovative financing techniques, and has assisted agencies in financing capital improvements through the Railroad Rehabilitation and Improvement Financing (RRIF) program and the Transportation Infrastructure Finance and Innovation Act (TIFIA). The RRIF program is intended to make funding available through loans and loan guarantees for railroad capital improvements. TIFIA provides federal credit assistance to major transportation investments of critical national importance. It is designed to fill market gaps and leverage substantial private co-investment by providing supplemental and subordinate capital. Both programs have established qualification criteria including creditworthiness of the agency/project. These programs might be used as a part of an overall funding plan for the commuter rail project once project cash flows are developed and loans and loan guarantees are determined to benefit the project.

***Sale-Leaseback Agreements:*** Because they do not pay taxes, public authorities are not able to take advantage of depreciation allowances under federal tax laws. However, depreciation

deductions are a substantial benefit to private firms with tax liabilities. Under a sale-leaseback agreement, a public authority purchases an asset, sells it to a private firm, and leases it back over time. In exchange for the depreciation benefits, the private firm makes an up-front payment to the public authority.

A sale-leaseback agreement might be considered when new commuter rail vehicles are purchased for the commuter rail project. Recent agreements such as this have yielded a net benefit of 9 to 10 percent of the asset value. This up-front payment is generally unrestricted and can be used at the discretion of the agency for capital or operating purposes. FTA has endorsed this innovative technique for federally procured assets.

***Station-Area Developments:*** Improved transportation access adds value to real estate. The areas around commuter rail stations may become attractive development sites for housing, offices, and businesses that serve commuters. Increasing density around transportation centers not only fulfills the environmental and social goals of transit-oriented development, but also provides an opportunity for public-private partnerships. In cases where the commuter rail operator or local government owns the land around the station, opportunities may exist to derive income from developers in the form of lease payments or land sales. In certain locations, private developers may even be willing to fund the cost of the station as part of a larger development.

***Tax Increment Financing:*** Communities could also fund infrastructure improvements within development areas around stations through tax increment financing. In tax increment financing, counties, municipalities or other units of government create districts in which revenues from future increases in property taxes (resulting from increased assessed property values created by new development and/or better transportation access) are used to finance improvements in the district.

## OPERATING SOURCES OF FUNDS

Operations and maintenance costs for commuter rail systems are generally funded from farebox revenues and various local sources. The sources described below are based on a review of operations funding for other commuter rail systems and the potential financial resources described in the Girdwood Area Transportation Plan (April 9, 1997). Many of these sources can be used for capital purposes as well, and are described in the Capital Sources of Funds section of this chapter.

### Congestion Mitigation and Air Quality Program Funds (CMAQ)

While federal funds are not regularly available for transit operations, CMAQ funds can be used under certain circumstances to subsidize the first three years' operations of new transit service. These funds would come from the State's existing CMAQ allocation, and the start-up of the commuter rail service would compete with other eligible projects in the State. Should they be secured for the commuter service, they would provide short term funding only.

### New or Increased Taxes and Fees

New or increased taxes or fees are likely to be needed to subsidize the commuter rail operation in the long term. As discussed previously, further analysis of these sources is required to determine their viability. The following taxes and fees may be considered to fund the operation of the commuter rail service:

- Property taxes
- Retail sales tax
- Fuel taxes
- Automobile registration fees
- Bed tax (hotel occupancy tax)

### Other Sources

Other potential sources of funding include joint development and real estate development, rents or fees from station-area concessions, advertising, parking fees, access fees for telecommunications bandwidth on fiber optic lines, and ski lift ticket surcharges. Also, federal Section 5307 transit formula funds are available for preventative maintenance.

### Institutional Structure to Support Commuter Rail System Funding

The establishment of a stable funding plan for the capital and operating costs of the proposed commuter rail system will depend in part on the institutional structure and governance of the system. In California, three commuter rail systems are structured as Joint Powers Authorities (JPAs), as allowed under California law: the Peninsula Corridor Joint Powers Board (Caltrain), the Southern California Regional Rail Authority (Metrolink), and the San Joaquin Valley to Silicon Valley Altamont Commuter Express (ACE). Under this arrangement, counties are members of the JPA. As members, the counties agree to certain terms and conditions of membership, including funding formulas.

As members of the JPA, counties are responsible for their share of annual operating subsidies and supporting capital programs by providing a portion of the required local match to other fund sources. This arrangement allows each member agency to determine how it will meet its funding shares, or if a regional, agency-wide approach will be used to secure funding for programs and projects. The strength of the structure is based on the commitments of the participating local jurisdictions to common goals and objectives for the commuter rail service. The concept of a JPA-like multi-jurisdictional agency to sponsor the Anchorage area commuter service is explored further in the following chapter and serves as a potential model for governance of the Anchorage area commuter rail service.

## PEER GROUP ANALYSIS OF FUNDING

Peer group analysis provides a means of identifying successes and challenges faced by entities undertaking the same or similar ventures elsewhere. This peer group analysis focuses on funding the initial capital costs and the ongoing operations and maintenance costs of new-start commuter

rail projects. It provides an overview of the funding plans and strategies used by five comparable commuter rail operations. The experience of these systems is useful in determining what funding approach might work for the commuter rail project in the Anchorage area. These systems are:

- The Coaster, operating a single route from San Diego to Oceanside in California
- Tri-Rail, operating a single route from Mangonia Park to Miami Airport in Florida
- Virginia Railway Express, operating two routes from Washington D.C. to Fredericksburg and Manassas in Virginia
- Trinity Railway Express, operating a single route from Dallas to Richland Hills (eventually to Fort Worth) in Texas
- Sounder, operating a single route from Tacoma to Seattle (eventually to Everett) in Washington

## Peer Group System Experience of Capital Cost Funding

Capital costs include the investments in rolling stock, track and signal improvements, maintenance equipment, and other facilities required to run a commuter rail operation. The capital funding sources of the peer group of five new-start commuter rail systems of similar scope to the Anchorage area commuter rail project are summarized in this section. All five systems were opened for service in the last 10 years.

Although the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) allow up to an 80 percent federal share of capital funds needed for development of new-start commuter rail systems, most recent systems have actually used considerably less. This reflects in part the high level of competition among rail systems around the country for scarce federal funds and the priority given to projects with local funding shares that exceed federal minimums. Moreover, qualifying for federal funding also imposes additional development costs in the form of more stringent procedural requirements, including environmental documentation.

Freight railroads have rarely contributed substantial shares of the costs of providing passenger service over their lines. In some cases, costs of providing passing sidings or upgrading signal systems have been shared when improvements enhance the efficiency of freight operations. These costs are generally a small share of the total capital expenditures required to implement commuter rail service. This leaves tax revenues or bond proceeds generated at the state and local level as the most common sources of capital funding for new-start commuter rail systems.

Table 3-1 summarizes sources of *initial* capital funding for each of the peer group commuter rail systems. The cost of rail right-of-way for systems where track was purchased from freight railroads is not included in the initial capital costs to improve comparability among systems.

**Table 3-1**
**Initial Capital Cost Financing Sources[1]**

| System | Federal | State | Local |
|---|---|---|---|
| Coaster | 0% | 53% | 47% |
| Tri-Rail | 19% | 75% | 6% |
| Virginia Railway Express | 1% | 17% | 82% |
| Trinity Railway Express | 24% | 0% | 76% |
| Sounder | 13% | 0% | 87% |

In general, federal grants are more available for ongoing capital expenditures (such as annual equipment replacement) than for initial capital. The FTA Section 5307 formula grant program makes statutory allocations of funds to systems based on route-miles in operation. As a result, federal funds become relatively more available start-up. In addition, peer group systems have used funds from various federal grant programs designed to support public transportation improvements, including railroad crossing safety improvements, CMAQ-related (congestion mitigation and air quality) improvements, such as additional rolling stock, track capacity enhancements, or park-and-ride facilities, fixed-guideway modernization, and preservation of unused rail corridors.

***Coaster:*** The Coaster has been operated between downtown San Diego and Oceanside, California since 1995 by a county public authority, the North San Diego County Transit District (NCTD). Coaster runs on a single-track freight line purchased for more than $400 million from the former Atchison, Topeka and Santa Fe Railway (ATSF) as part of a larger right-of-way acquisition shared with the Los Angeles Metrolink service. The 43-mile line serves eight stations.[2] ATSF, now the Burlington Northern Santa Fe Railway (BNSF), continues to provide freight service, and Amtrak operates extensive corridor service over the route.

Of approximately $150 million (1995 dollars) in development costs not including right-of-way acquisition, $70 million was derived from a 1987 ballot initiative creating a ½-cent regional sales tax to fund commuter rail and other transportation projects in San Diego. General obligation bonds – authorized by a statewide public referendum in 1990 (Proposition 116) to fund right-of-way and rolling stock for various commuter rail, urban rail transit, and intercity rail projects throughout California – funded a majority of the remaining capital expenses.[3]

Federal grants have been used to fund some ongoing capital improvement and maintenance projects.

[1] Costs associated with right-of-way acquisition not included. Figures derived from Southeast Michigan Council of Governments (SEMCOG) commuter rail study, 1996, and agency contacts and other sources. All percentages are approximate.

[2] Parsons Brinckerhoff. *Northeast Ohio Rail Study (NEORAIL)*, February 1998. *www.pb4d.com/neorail*

[3] Southeastern Michigan Council of Governments (SEMCOG). *Southeastern Michigan Regional Rail Study.* De Leuw, Cather & Company, December 1996.

***Tri-Rail:*** The Tri-County Commuter Rail Authority, a special use authority or district created by the State of Florida, operates the 66-mile Tri-Rail commuter railroad serving 17 stations, including three international airports in southern Florida. Commuter rail service was initiated in 1989 as a means of reducing mobility impacts associated with construction on Interstate 95.

The State of Florida provided funding from its transportation trust fund to cover debt service associated with the $264 million cost of initial right-of-way acquisition from the CSX Transportation (CSXT) railroad. Amtrak intercity trains and CSXT freight trains also use the route. The state also provided funding to cover debt service associated with the $80 million initial cost of track improvements, station construction, and rolling stock. The Federal Railroad Administration (FRA) provided loan guarantees to reduce the financing costs associated with this debt. The state transportation trust fund receives revenue from motor fuel taxes, motor vehicle license fees, motor vehicle initial registration fees, aviation fuels taxes, and rental car surcharge fees.[4]

***Virginia Railway Express:*** The Virginia Railway Express (VRE) operates on two lines serving commuter needs between northern Virginia suburbs and Washington Union Station. In contrast to systems in Southern California and southern Florida, the VRE does not own its right-of-way. VRE contracts with CSXT, Norfolk Southern Railway, and Amtrak for track access.[5]

The initial capital cost of $155 million funded rolling stock and several stations closest to downtown Washington. Local jurisdictions and private railroads own most of the outlying stations. Many local jurisdictions developed park-and-ride facilities around stations at their own expense. Less than 1 percent of the capital funding was provided by the FTA. Bonds supported by the revenues of a 2 percent motor fuel sales tax administered by two regional transportation districts provided nearly two-thirds of the total capital funding. The taxes did not require a public referendum under Virginia law. The Commonwealth of Virginia, through a direct grant from its general fund, and local jurisdictions provided the remainder.[6]

***Trinity Railway Express:*** Trinity Railway Express (TRE) began operations on an initial 10-mile segment between Dallas Union Station and South Irving Transit Center. The current operating segment to Richland Hills in the eastern suburbs of Fort Worth and the planned expansion to Fort Worth are part of a 34-mile former Rock Island rail corridor purchased in 1983 by the cities of Dallas and Fort Worth using a federal transit grant.[7]

One-half of the $70 million cost of developing the initial segment was financed by the Dallas Area Rapid Transit (DART) regional sales tax. As an existing transit service provider, DART qualified for federal Section 9 formula grants applicable to system expansion and development.

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[4] Tri-County Commuter Rail Authority. *Capital Improvement Program Strategic Plan*. Wilbur Smith Associates, 1994.

[5] Southeastern Michigan Council of Governments (SEMCOG). *Southeastern Michigan Regional Rail Study.* De Leuw, Cather & Company, December 1996.

[6] Northern Virginia Transportation Commission. *New Start Handbook.* American Public Transit Association, Commuter Rail Committee, March 1995.

[7] Dallas Area Rapid Transit. *DART Commuter Rail Start Up: Background and Current Status.* DART, June 1995.

Other local funding sources included municipal contributions and railroad contributions associated with making the line suitable for freight service.[8]

***Sounder:*** Sounder commuter rail system is planned to serve 14 stations along 81 miles of track between Everett and Lakewood, Washington, via Seattle and Tacoma by 2003. Sounder began operations between Tacoma and Seattle last year, and shares BNSF tracks with BNSF freight trains and Amtrak passenger trains.

Sounder is sponsored by Sound Transit, the Central Puget Sound Regional Transit Authority. The combined capital expenditures budgeted for commuter rail development through 1999 totaled more than $320 million. Sound Transit has received federal Section 5309 "New Start" earmarked discretionary funds to fund both commuter rail and light rail development. Sound Transit also collects a 0.4 percent Retail Sales and Use Tax and a 0.3 percent Motor Vehicle Excise Tax in its service area. This revenue stream is used to support bonds funding 40 percent of its capital improvement program.[9]

## Peer Group System Experience of Operating Cost Funding

Operating costs are the recurring expenses of running a commuter rail operation. Most commuter rail systems rely on farebox revenues and state or local sources of funding to cover expenses associated with operations and maintenance. TEA-21 does not authorize federal operating assistance for commuter rail operations. Few new-start commuter rail systems recover more than one-half of their operating expenses through passenger fares. A farebox recovery ratio around 25 to 40 percent is more common. The proportion of operating costs covered by farebox revenue is known as the farebox recovery ratio.

Table 3-2 summarizes the sources of funding for each of the peer group commuter rail systems in FY 1996-1997. Ongoing capital expenditures are not included in the operating costs.

**Table 3-2**
**Operating Cost Funding Sources[10]**

| System | Farebox[11] | Other[12] | Federal | State | Local |
|---|---|---|---|---|---|
| Coaster | 20% | 71% | 0% | 0% | 9% |
| Tri-Rail | 29% | 0% | 0% | 36% | 36% |
| Virginia Railway Express | 55% | 6% | 0% | 18% | 18% |
| Trinity Railway Express | 5% | 0% | 0% | 0% | 95% |
| Sounder | N/A | N/A | N/A | N/A | N/A |

[8] Southeastern Michigan Council of Governments (SEMCOG). *Southeastern Michigan Regional Rail Study.* De Leuw, Cather & Company, December 1996.

[9] Central Puget Sound Regional Transit Authority. *1999 Annual Budget.* Sound Transit, 1998.

[10] Figures derived from SEMCOG commuter rail study, 1996, and agency contacts.

[11] Since 1996, farebox recovery ratios have changed significantly in some cases.

[12] Other revenue includes operator-generated income, such as interest, advertising, and right-of-way access fees, such as fiber optic bandwidth and trackage rights.

***Coaster:*** Amtrak operates The Coaster under contract. In addition to farebox revenues, the Coaster derives revenue from its right-of-way by selling usage rights of the line to Amtrak and the BNSF by leasing bandwidth on fiber optic cables, and through crossing fees.[13] Coaster's farebox recovery ratio for the 1998-1999 fiscal year was 25 percent.

***Tri-Rail:*** Tri-Rail is operated by a private operator, Herzog Transit Services, under contract. Farebox revenues in the 1996-1997 fiscal year covered 29 percent of the total operating and non-capital maintenance expenses. The Florida Department of Transportation splits the operating deficit (operating costs not covered by revenues) with the three counties that Tri-Rail serves. No dedicated sources of funding exist in Broward, Dade and Palm Beach Counties to support Tri-Rail operations. The state and each county appropriate funds from their General Funds to subsidize Tri-Rail.[14]

***Virginia Railway Express:*** VRE is operated by Amtrak under contract. The severe traffic congestion along the routes served by the VRE contributes to a high farebox recovery ratio of more than 50 percent of operating expenses. (Later year ratios were not available.) The Virginia Department of Transportation provides over $4 million annually to cover track access fees. Other state and local operating assistance funds the remainder of the operating deficit.[15]

***Trinity Railway Express:*** TRE Express is operated by Herzog Transit Services under contract. The cities of Dallas and Fort Worth lease the right-of-way to the Union Pacific Railroad (UP) and BNSF as a source of income.[16] During 1996, the first partial year of operation, local funding sources, including farebox revenues and track access fee income, covered all operating expenses.[17]

***Sounder:*** Because Sounder began late last year, operating funding data should not be considered representative of a steady-state condition. Accordingly, the data were not sought for this study. Nevertheless, the majority of ongoing operating and capital funding likely will come from sales tax and motor vehicle excise tax proceeds. BNSF is the contract operator, with Amtrak providing equipment maintenance under contract to Sounder.

## SUMMARY

The peer analysis indicates that no single funding strategy or organizational/institutional arrangement is common to new-start commuter rail systems. A variety of funding approaches, operating arrangements, and organizational structures are used to meet the unique circumstances and opportunities available to the commuter rail systems analyzed. However, these experiences

[13] Southeastern Michigan Council of Governments (SEMCOG). *Southeastern Michigan Regional Rail Study.* De Leuw, Cather & Company, December 1996.

[14] Tri-County Commuter Rail Authority. *Capital Improvement Program Strategic Plan*. Wilbur Smith Associates, 1994.

[15] Northern Virginia Transportation Commission. *New Start Handbook.* American Public Transit Association, Commuter Rail Committee, March 1995.

[16] Northern Virginia Transportation Commission. *New Start Handbook.* American Public Transit Association, Commuter Rail Committee, March 1995.

[17] Tri-County Commuter Rail Authority. *Capital Improvement Program Strategic Plan*. Wilbur Smith Associates, 1994.

provide a basis for determining what might work best or should be further analyzed for its applicability to the proposed commuter rail project for the Anchorage area.

Based on the peer review analysis, a preliminary review of available funds, and the commuter rail project as it is currently envisioned, the following funding arrangements are recommended for consideration:

- Federal New Rail Starts discretionary funds should be considered for up to 50 percent of the initial capital cost of the commuter rail project.
- New or expanded state and local sources of funds should be pursued to provide funding matches to capital grants (initial capital funds and ongoing capital investments in the system), and to provide operating subsidies for ongoing operations and maintenance of the system.

Mat-Su already has a sales tax, and therefore the mechanism already exists to collect revenue that could be applied to the commuter rail operating subsidies. No such tax exists in Anchorage, however. It is worth mentioning that Mat-Su and Anchorage can fund their portions of the operating subsidy requirements in whatever ways they feel are appropriate. These could include combinations of mechanisms, which may differ between the jurisdictions.

A comprehensive funding plan should be developed once a multi-jurisdictional agency has been formed to implement and manage the commuter rail service. This plan should include detailed cost estimates for the project and cash flow projections for the capital and operating elements of the plan. The estimates should also include requirements for publicly operated connecting shuttles. Depending on the cash flow needs reflected in the plan, innovative financing techniques can be pursued and incorporated into the plan. The funding plan will be used to secure grant funding and to assist in identifying how new or expanded sources of funds will be used for the commuter rail system.

Undertaking this ambitious commuter rail project will take time to secure grant funds, develop new sources, and establish an organization to carry the project forward and oversee its operation. The final implementation plan schedule will address the time requirements for all aspects of the funding and organizational needs of the project. The type of organization needed to move the project forward is the subject of the following chapter.

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# CHAPTER HIGHLIGHTS

## CHAPTER 4: INSTITUTIONAL STRUCTURE

- The commuter rail service will be sponsored by a multi-jurisdictional agency composed of the municipalities of Anchorage, Wasilla, and Palmer, and the Matanuska – Susitna Borough, and potentially the Alaska Department of Transportation and Public Facilities. The Alaska Railroad will provide dispatching for the service. Either ARRC or an independent contractor will operate the service and maintain the rolling stock under contract to the commuter agency.
- The study reviewed four types of management structures to identify a model appropriate for the Anchorage area, and also to identify ways costs might be shared among the member agencies. The four types of structures included Joint Powers Authorities (JPAs), Special Districts, Transportation Joint Projects or Partnerships consisting of existing transit agencies, and Multimodal Transit Agencies which sponsor commuter rail services.
- Caltrain on the San Francisco Peninsula, Altamont Commuter Express (ACE) between Stockton and San Jose, and the Los Angeles Metrolink system are all examples of commuter rail services sponsored by JPAs.
- The South Florida Tri-Rail system is sponsored by the Tri-County Commuter Rail Authority, a Special District created by the Florida Legislature in the late 1980s.
- Transportation Joint Projects or Partnerships include the Virginia Railway Express (VRE) in the Northern Virginia – Washington D.C. area, and the Trinity Rail Express (TRE), operating between downtown Dallas and the outskirts of Fort Worth. To establish these services, existing transit agencies pooled resources.
- Two commuter rail services sponsored by Multimodal Transit Agencies include Metra, sponsored by the Chicago Regional Transportation Authority (RTA), and The Coaster, sponsored by the North San Diego County Transit District (NCTD). Metra has been part of the RTA since the passage of the RTA Act in 1974. NCTD, which has an extensive bus network, began Coaster in 1995.
- All these services are considered successful implementations of commuter rail. All services have increasing ridership and expanding networks and/or service levels. Most of the services were initiated within the last 10 years.
- The study recommends a JPA structure for an Anchorage area commuter service. No special legislation appears necessary to establish a JPA, as it would be for a Special District. Also, an agency established for the sole purpose of providing commuter rail service, as opposed to a Multimodal Transit Agency, would maintain a commuter rail focus that would aid managers as they navigate the complex course of next steps required for implementation.

- With the exception of The Coaster in San Diego, all the commuter management structures have distinct approaches to sharing capital costs and operating subsidy requirements among their member agencies. Each arrangement is a product of negotiation among the members. NCTD, which sponsors The Coaster, is not a multi-jurisdictional agency.

# Chapter 4
# INSTITUTIONAL STRUCTURE

## INTRODUCTION

When envisioning a commuter rail system with the promise of enhanced lifestyles and congestion relief, perhaps the first image that comes to mind is not how the system will be managed. However, this question of governance is a basic one, for an institutional structure will be necessary to build and operate the system – and to raise the funding to support it on an ongoing basis.

The purpose of this chapter is to address the issue of governance and cost sharing for an Anchorage area commuter rail service. First, whether or not specific enabling legislation is required to establish an interagency administration of the service is explored. The agency would likely consist of the municipalities of Anchorage, Wasilla, Palmer, the Mat-Su Borough, and potentially the Alaska Department of Transportation and Public Facilities (ADOT/PF). As these entities represent the potential users of the service, it would be appropriate that they govern the service's operation on behalf of the users.

Next, nine U.S. commuter rail systems are reviewed in terms of their institutional structures and arrangements for sharing costs not covered by fare revenue, grants, sales of easements and freight operating rights, and advertising, among others sources. Some of these and their approaches to securing federal, state, and local funds were profiled in the preceding chapter. Their separate experiences provide a wealth of insight relevant to this project. The chapter concludes with a recommendation of an institutional structure for the Southern Alaska commuter rail service.

## THE LAW AND A CROSS-JURISDICTIONAL COMMUTER RAIL AGENCY

Commuter rail operations often span jurisdictional lines. It is common to find operations with trains running through various counties and cities. To establish these operations, counties and cities have come together to form common public agencies charged with financing and managing the train service. In California, three cross-jurisdictional commuter rail services are operated by Joint Powers Authorities (JPAs). Provisions allowing the establishment JPAs are found in California law. Illinois, Washington, and Florida, among other states, also have enabling legislation that has permitted interagency agreements for commuter rail operations. Such provisions appear to exist in Alaska law as well[1]. These are cited in Appendix B. Therefore, it appears that no specific enabling legislation is needed for the formation of an agency crossing jurisdictional lines to initiate and manage a commuter rail service for the Anchorage area. The questions that remains is, what type of agency.

[1] Sections 29.35.010, 29.35.020 (a) and (b), 29.35.020 (b), and 20.35.210 (a) of the state statutes. These sections are excerpted in the Appendix B.

## ALTERNATIVE STRUCTURES

Listed below are various examples of public agency institutional structures for commuter rail operations. None of the operations below runs at a profit, or even comes close to covering its operating costs and borrowing costs for capital improvements. By necessity, all are run by public agencies.

In some cases, these agencies span jurisdictional lines, as is the case with JPAs. In others, commuter rail services are simply part of existing multimodal transit agency operations. In all cases, the agencies, as public funding grantees, have the power to obtain federal and state funds for capital improvements. Most of the agencies below receive operating subsidy funds by voter approval of sales taxes or other local revenue generating mechanisms (motor revenue registrations, fuel taxes, hotel occupancy taxes, etc.). Various strategies for pursuing capital and operating funds were the focus of the preceding chapter. The purpose of the discussion that follows is, using the experience of these nine agencies as examples, to identify ways in which a multi-jurisdictional commuter rail agency in the Anchorage area might be structured and how it might share costs among its member agencies.

The commuter railroads' governing authorities and arrangements by which member agencies share their operating subsidy requirements and local capital requirements (costs not covered by state and federal sources and commercial interests) are summarized in Table 4-1. Specifically, the arrangements cited are for those capital and operating costs not covered by non-local sources (state and federal) and any other sources, such as sales of freight rights, fiber optic cable easements, and therefore are the sole responsibilities of the sponsoring agencies. These are the costs that the agencies must share among their members. These arrangements likely will be of significant interest to the public entities which may come together to govern the Anchorage area commuter rail service.

Input was received through conversations with railroad managers during November and December 2000 and early January 2001. The input is categorized below by the type of institutional structure governing the railroads.

### Joint Powers Authorities

This analysis reviewed the institutional structures, staffing and staff functions, and cost sharing arrangements of three California commuter rail agencies headed by Joint Powers Authorities (JPAs). These were Metrolink serving the Los Angeles area, Altamont Commuter Express (ACE) running between Stockton and San Jose, and Caltrain running between San Francisco and San Jose and Gilroy. The formation of JPAs among governmental agencies (including cities, counties, and transportation authorities) is permitted by specific statutes in California. These statutes permit two or more agencies to jointly exercise power common to the contracting parties for various purposes, which have come to include the initiation and management of commuter rail services[2].

[2] California Government Code, Section 6502.

**Table 4-1**
**Nine Commuter Railroad Cost Sharing Practices**
**For Operating Subsidy Requirements and Local Capital Costs**
**(Costs Not Covered by State and Federal Sources)**

| Commuter Railroad | Institutional Structure and Composition | Operating Subsidy Requirement Sharing by Member Agencies | Local Capital Cost Sharing By Member Agencies |
|---|---|---|---|
| *Metrolink*, serving the Los Angeles area. | SCRRA, a JPA made up of five Southern California counties: Los Angeles, Riverside, San Bernardino, Orange, and Ventura. | Each county pays discretionary (variable) costs on a train-mile proration of total system costs; each pays base (fixed) costs based on the number of stations and route-miles in each county. Funds raised through sales taxes; in Ventura, through General Fund. | The costs of a particular upgrade is the responsibility of the county in which the local cost is incurred. Funds raised through sales taxes; in Ventura, through General Fund. |
| *Caltrain* on the San Francisco Peninsula. | PCJPB, a JPA made up of San Francisco, San Mateo and Santa Clara Counties. | Counties pay for the required subsidy based on morning boardings only. Costs covered by sales tax revenues generated by each county. | The three counties pay one third each for local capital improvements. Costs covered by bond issuance. |
| *Altamont Commuter Express (ACE)*, Stockton to Silicon Valley. | ACEJPA, a JPA made up of Santa Clara, Alameda, and San Joaquin Counties. | Counties pay based on a combination of boarding and alightings per county. Funds raised through county sales taxes. | Most funds obtained from non-local sources. Local communities pay for station improvements and construction. |
| *Tri-Rail*, serving the Miami area. | TCCRA, a special authority or district made up of Palm Beach, Broward and Miami-Dade Counties. | Each county pays a one third share through its General Fund. | Funds are obtained from various non-local sources for its capital costs. As a result, no local funds are used for capital improvements. |
| *Trinity Rail Express (TRE)*, serving the Dallas/ Fort Worth area | Joint project of the Dallas Area Rapid Transit, the transit agency for Dallas County, and Fort Worth Transportation Authority, the transit agency for Tarrant County. | Operating subsidy requirements are split on a revenue-per-seat-mile basis between Dallas and Fort Worth transit agencies through county sales taxes. | Local capital costs are responsibility of the transit agency of the county in which the improvement occurs. Funds are raised through county sales taxes. |

***Table 4-1 continued…***

| Commuter Railroad | Institutional Structure and Composition | Operating Subsidy Requirement Sharing by Member Agencies | Local Capital Cost Sharing By Member Agencies |
|---|---|---|---|
| *Virginia Rail Express (VRE),* serving Northern Virginia and Washington D.C. | A transportation partnership between two Northern Virginia transit agencies: the Northern Virginia Transportation Commission and the Potomac and Rappanhannock Transportation Commission. | Operating subsidy requirements are paid by formula among the cities and counties served by the two transit agencies. The formula assigns cost shares based on the number of riders from the cities and counties. Funds generated through gas tax. | Local capital costs presumably are assigned on a formula basis. Sources not identified. |
| *Metra*, serving the Chicago area | Part of a multimodal Regional Transportation District serving six Chicago area counties: McHenry, Lake, Kane, Cook, DuPage, and Wills. | RTA pays for its operating subsidies through sales taxes raised in the six counties. RTA then distributes funds to its various transit services, including *Metra*, by formula. | Sales tax funds not spent on operating subsidy requirements can be converted to capital improvements. |
| *Sounder*, serving Seattle and Tacoma | Part of Sound Transit, the public transit agency serving three Puget Sound Counties: King, Snohomish and Pierce. | Sound Transit pays for its operating subsidies through funds generated through sales taxes and motor vehicle excise taxes in the three counties. A portion of these funds pay for *Sounder* operating subsidy. | Sound Transit pays for its local capital requirements with funds generated through sales taxes and motor vehicle excise taxes in the three counties. A portion of these funds pay for *Sounder* capital costs. |
| *The Coaster*, serving the San Diego area. | North San Diego County Transit District. | Costs are not shared with another agency. Sales tax revenues cover operating cost subsidies. | No sharing of local capital requirements with any other agency. |

***Metrolink:*** Metrolink, formally known as the Southern California Regional Rail Authority (SCRRA), is the commuter railroad serving the Los Angeles area. Metrolink offers weekday and weekend service. On weekdays, it operates 126 trains, carrying about 32,000 passengers. SCRRA is a JPA formed by agreement signed in 1991 by Los Angeles County Transportation Commission, Orange County Transportation Authority, the Riverside County Transportation Commission, the San Bernardino Associated Governments, and the Ventura County Transportation Commission. These agencies represent the counties through which SCRRA operates. The SCRRA administrative board consists of 11 members, representing the member agencies, the counties themselves, and other local interests.

*Staffing and Staff Functions:* SCRRA full-time personnel total about 750. The staff is headed by an Executive Director, who reports to the SCRRA Board. Duties of SCRRA management includes, among other things:

- Oversight of an operating contract signed with the National Railroad Passenger Corporation (Amtrak). Amtrak provides crews for Metrolink trains.
- Oversight of a maintenance of equipment (MOE) contract signed with Bombardier, Inc. Until recently, Amtrak had this contract, but lost it in competitive bidding to Bombardier.
- Oversight of the maintenance of way (MOW) contract with Herzog Transit Services, Inc. for lines controlled by SCRRA.
- Oversight of operating agreements signed with Union Pacific Railroad (UP), the Burlington Northern Santa Fe Railway (BNSF), and Amtrak. In exchange for access onto SCRRA controlled lines, these entities contribute to MOW expenses.
- Ticket sales, marketing, and promotion.
- Dispatching of all train traffic on lines controlled by SCRRA in the Los Angeles area. UP and BNSF operate freight service on several SCRRA owned or controlled lines in the Los Angeles Basin. Also, Amtrak operates both long distance and California Surfliner intercity services on SCRRA controlled lines.

Station services costs (i.e., security and maintenance) are not system costs. They are borne by the communities in which the stations are located. These costs are comparatively light, and likely are funded from General Funds and other sources available to the communities.

*Operating subsidy requirements:* These are paid by the counties based on two formulas. For variable or "discretionary" operating costs (i.e., labor, fuel, and ordinary rolling stock maintenance), the counties pay based on a train-mile proration of these system costs. For fixed or "base" costs (i.e., dispatching, security, marketing, other SCRRA agency costs, and various payments to the freight railroads), each county pays based on the number of SCRRA stations and route-miles in the county.

*Local capital requirements:* Local funds are sought for upgrades only. The cost of the upgrades is the responsibility of the county in which the upgrade occurs. For example, SCRRA would look to San Bernardino County to cover the cost of a bridge improvement in San Bernardino

County. Federal and state funds are used for new construction. No local funds are used for this purpose at the present time.

Four counties – Los Angeles, Riverside, San Bernardino, and Orange – have sales taxes in place, portions of which go toward contributions to SCRRA. In Los Angeles, the sales tax portion is 10 percent, which can be applied to both capital and operating costs. Ventura County, on the other hand, does not have a sales tax that contributes toward SCRRA funding requirements. The county's contribution comes from its General Fund.

***Caltrain:*** Caltrain is the commuter rail service on the San Francisco Peninsula. The service operates 78 trains per weekday between San Francisco and San Jose; eight trains continue to Gilroy, south of San Jose. Weekend service is also provided. Caltrain has an average weekday ridership of about 33,000. Plans exist to extend the service to both Hollister and Salinas, both south of Gilroy. Caltrain owns the rail line between San Francisco and San Jose, and operates on the UP Coast line via trackage rights between San Jose and Gilroy.

The Peninsula Corridor Joint Powers Board (PCJPB) is the successor to the initial JPA established in 1987 to assume operation of commute trains on the corridor. In 1991, the JPA purchased the 46-mile right-of-way between San Francisco and San Jose from the former Southern Pacific Transportation Company (SP, now part of UP) and obtained trackage rights south about 33 miles to Gilroy. The JPA became the PCJPB in 1992, and retained Amtrak rather than SP as operator. The PCJPB membership consists of San Francisco, San Mateo, and Santa Clara Counties. Each county has representatives on the PCJPB.

*Staffing and Staff Functions:* San Mateo County Region Transit District, known commonly as SamTrans, provides management staff for Caltrain, according to a management agency agreement signed by PCJPB and SamTrans. Primary SamTrans duties include, among other things:

- Oversight of the Amtrak operating and maintenance contracts for Caltrain.
- Oversight of an operating contract signed originally with SP, which provides for UP freight service on the PCJPB line via trackage rights.
- Ticket sales, marketing, and promotion.

*Operating Subsidy Requirements:* The counties pay for the operating subsidy requirements based on morning boardings in each county (assumed to represent county of residence) through a portion of sales tax revenues generated in each county.

*Local Capital Requirements:* PCJPB seeks federal and state funds for capital improvements. In addition, San Francisco, San Mateo, and Santa Clara Counties each pays one third of capital improvements not covered by state and federal sources. The counties raise these funds by issuing bonds.

***Altamont Commuter Express:*** Altamont Commuter Express (ACE) is the commuter rail service operating between Stockton in Northern California's San Joaquin Valley and San Jose, the heart

of Silicon Valley. The service operates six trips during weekdays, including a "turn back" run between San Jose and Pleasanton, and carries about 4,000 riders per day. In early 2001, ACE will begin a third round trip between Stockton and San Jose, and will discontinue the turn back operation. ACE trains run on more than 80 miles of UP main line trackage.

The Altamont Commuter Express Joint Powers Authority (ACEJPA) is the administrative authority for ACE. The JPA was formed by agreement among three agencies: the San Joaquin Regional Rail Commission (SJRRC), which itself is a JPA made up of seven cities in San Joaquin County and the County itself; the Alameda County Congestion Management Agency; and the Santa Clara Valley Transportation Authority (VTA). Each of these three agencies has three members serving on the ACEJPA Board. These agencies represent the ACE-served counties: San Joaquin County, Alameda County, and Santa Clara County.

*Staffing and Staff Functions:* SJRRC provides management staff for ACE. The Executive Director for SJRRC serves as the Executive Director for ACEJPA. Primary duties of the Executive Director and staff include, among other things:

- Oversight of operating and maintenance contracts with the service operator, Herzog Transit Services. Herzog provides the crews for ACE trains, and maintains ACE rolling stock.
- Oversight of the operating agreement with UP for trackage rights and dispatching.
- Security.
- Ticket sales, marketing, and promotion.

*Operating Subsidy Requirements:* All three member counties have enacted sales taxes which provide the funding to cover operating subsidy requirements. The allocations of operating subsidy requirements among the counties are made according to boarding and alightings in each county. Currently, these equate to the following approximate shares: San Joaquin County at 23 percent, Alameda County at 34 percent, and Santa Clara at 43 percent.

*Local Capital Requirements:* ACEJPA has received state and federal grants for requirements, including rolling stock and stations. Local communities bear station improvement and construction costs.

## Special Districts

JPAs are specific to California. Other mechanisms have been used to establish cross-jurisdictional commuter rail services. One such mechanism is the formation of Independent Special Districts, which may require the approval of a state legislature. The Special District highlighted here is Tri-Rail, which operates commuter services in the Miami area.

***Tri-Rail:*** Tri-Rail is South Florida's commuter railroad. The service offers both weekday and weekend service. On weekdays, 28 Tri-Rail trains operate between Mangonia Park in the north and the Miami Airport in the south, a distance of 72 miles, and carry about 8,500 riders.

Tri-Rail is governed by the Tri-County Commuter Rail Authority (TCCRA), a special authority or district for Palm Beach, Broward and Miami-Dade Counties. The district was established by the Florida Legislature in the late 1980s. At that time, the Florida Department of Transportation (FDOT) purchased trackage belonging to CSX Transportation, a large freight railroad. FDOT maintains ownership of the right-of-way to this day. Tri-Rail subsequently ordered rolling stock, and began operations in 1989. CSX and Amtrak retained operating rights for freight and intercity passenger services.

The district's administrative board consists of nine members. These include six representatives of Palm Beach, Broward and Miami-Dade Counties (two from each county served by Tri-Rail), a representative appointed by the Governor, a representative from FDOT, and one at-large member.

*Staffing and Staff Functions:* Tri-Rail's Executive Director and staff report to the district board. Their duties include, among other things:

- Oversight of operating and maintenance contracts with Herzog Transit Services. Herzog provides the crews for Tri-Rail trains, and maintains Tri-Rail rolling stock.
- Oversight of operating agreements signed with CSX Transportation and Amtrak that allow access onto FDOT-owned right-of-way for freight and intercity passenger trains in exchange for contributions toward MOW costs and capital improvement projects.
- Ticket sales, marketing, and promotion.

*Operating Subsidy Requirements:* FDOT and Tri-Rail split operating subsidy requirements on a 50 / 50 basis. Of the Tri-Rail half of the operating cost subsidy requirements, one-third is the responsibility of each of the three Tri-Rail-served counties. The counties fund their shares of the subsidy requirements through their General Funds.

*Local Capital Requirements:* Tri-Rail's capital improvement requirements are the responsibility of FDOT as the right-of-way owner and of Tri-Rail as a user. Tri-Rail in turn obtains the funds from various federal and state sources. No local funds are used. An example of how this funding is accomplished can been seen in an ongoing (since 1994) double tracking project. The final group of improvements will cost an estimated $327 million. Of this sum, the three counties (Palm Beach, Broward, and Miami-Dade) will contribute a total of $45 million. However, the contributions will, in effect, come from federal sources, which will ultimately total $257 million. FDOT will pay $70 million.

## Transportation Joint Projects or Partnerships

The two services discussed below are similar in that they require two local transit agencies to jointly establish commuter rail operations across jurisdictional boundaries. These include Trinity Rail Express, a joint project operated by two transit agencies in the Dallas – Fort Worth area, and Virginia Rail Express, a transportation partnership between two regional transportation agencies.

***Trinity Rail Express:*** Trinity Rail Express (TRE) operates a commuter rail service between downtown Dallas and Richland Hills, an eastern suburb of Fort Worth. By late 2001, the line will stretch 34 miles, and link downtown Dallas and downtown Fort Worth. The service is operated as a joint project by Dallas Area Rapid Transit (DART), the transit agency in Dallas County, and the Fort Worth Transportation Authority (also known as the "T"), the transit agency in Tarrant County. TRE offers peak and off-peak service Mondays through Friday, and offers Saturday service as well. Presently, it carries 4,500 daily riders on weekdays. When the service reaches downtown Fort Worth, it is projected to carry 8,000 daily riders.

TRE was formed in 1994, when DART and the T signed an "interlocal agreement" (ILA) establishing the service; no enabling state legislation was required. Among other things, the agreement specifies how the service will be managed and how capital costs and operating subsidies will be covered by the two governing transit agencies.

*Staffing and Staff Functions:* A DBA ("doing businesses as") entity rather than a legal entity, TRE is overseen by both DART and T administrative officers. TRE's Director and staff report to management and advisory committees consisting of DART and T officers. The primary duty of the TRE Director and staff is the oversight of the operating and maintenance contracts with the Herzog Transit Services, which supplies the transit crews and maintenance personnel required to run TRE.

*Operating Subsidy Requirements:* These are covered by DART and T on a revenue passenger-mile basis. Because most of the passenger-miles currently occur in Dallas County, DART is predominantly responsible for the operating subsidies at the present time. DART's contributions are generated through a 1 percent sales tax assessed in Dallas and 12 other Dallas County cities served by DART. The T's contributions are generated by a 0.5 percent sales tax in Fort Worth and three other cities served by the T.

*Local Capital Requirements:* Beyond what may be attained from non-local sources, capital requirements are the responsibility of the transit agency of the county in which the capital expenses are incurred. For example, DART pays for TRE right-of-way improvements in Dallas County, and the T pays for improvements in Tarrant County. Transit agency funds are raised through the previously mentioned sales taxes.

The two agencies contributed rolling stock to the service separately. DART paid for the initial rolling stock (remanufactured RDC 1s[3]) used in off-peak service, and the T supplied rebuilt Bombardier bi-level commuter cars and locomotives used in peak service due to their higher capacities relative to the RDCs.

***Virginia Railway Express:*** Virginia Railway Express (VRE) is the commuter rail service in Northern Virginia, running trains on two lines to and from Washington DC. Offering weekday service only, VRE operates 30 trains and carries an average of about 10,000 riders per day.

[3] Self-propelled Rail Diesel Cars (RDCs) with all coach seating and no restrooms.

VRE is a transportation partnership of the Northern Virginia Transportation Commission (NVTC) and the Potomac and Rappahannock Transportation Commission (PRTC). Neither agency is a Metropolitan Planning Organization. Rather, they operate transit services. NVTC serves Fairfax and Arlington Counties, including the City of Alexandria; its historical focus has been the Washington, DC Metro system. PRTC, which runs buses, serves Prince William and Stafford Counties. No enabling legislation was required to establish the partnership in 1986. However, forming the partnership required the establishment of PRTC and a gas tax to cover operating subsidy requirements. Both agencies elect members to sit on the VRE Operations Board. The Director of the Virginia Department of Rail and Public Transportation (VDRPT) also sits on the board.

*Staffing and Staff Functions:* Reporting to the Operations Board is the Operations Group. The group has a staff of 23 employees, headed by a Chief Operating Officer. Principal duties of the staff include, among other things:

- Oversight of operating contracts with Amtrak. Amtrak provides the crews for VRE trains, and maintains VRE rolling stock. NVTC and PRTC have joint title to the rolling stock.
- Access agreements with the freight railroads over which it operates. These freight railroads are Norfolk Southern Railway, which owns the VRE's Manassas line; and CSX Transportation, which owns VRE's Fredericksburg line.
- Ticket sales, marketing, and promotion.
- Station maintenance and improvement.

*Operating Subsidy Requirements:* Operating subsidies are funded primarily through a 2 percent gas tax in those cities and counties represented by the two transit agencies. These are split among the various cities and counties on the basis of the number of riders from the cities and counties.

*Local Capital Requirements:* As VRE partners, NVTC and PRTC seek capital improvement funding from various federal, state, and local sources. The source of the local funds was not identified in the conversation with VRE. Presumably, areas served by the two transit agencies split costs on a formula basis.

## Commuter Rail Services Operated by Multimodal Transit Agencies

Also discussed are Metra, Sounder, and The Coaster, the commuter rail services in the Chicago, Seattle, and San Diego areas, which operate under the aegis of multimodal transit agencies.

***Metra:*** Metra is the commuter rail service in the Chicago area. Metra offers weekday and weekend service. Weekdays, Metra operates 700 trains, carrying about 300,000 riders on 12 routes stretching north, west and south from downtown Chicago.

Metra is part of a multimodal Regional Transportation Authority (RTA) serving six Chicago-area counties. The RTA is a special purpose unit of local government and a municipal corporation of

the State of Illinois. It was formed in 1974 by a referendum in McHenry, Lake, Kane, Cook, DuPage and Will Counties. The RTA Act, the enabling legislation providing for the formation of the RTA, was also passed at the time. In 1983, the act was amended with substantial changes made to the RTA's organization, funding, and operations. In addition to the Metra commuter rail service, the RTA operates the Chicago Transit Authority (CTA), the subway, bus, and elevated railway networks in Chicago; and Pace, a suburban bus system.

Responsible for policy decisions, the RTA Board is composed of representatives from all six counties, as well as from the CTA. Known as Service Boards, Metra, Pace and CTA each has a board of its own responsible for management and oversight to service-specific issues. Metra's board is composed of representatives from Chicago and the six counties.

*Staffing and Staff Functions:* Headed by an Executive Director, Metra personnel total about 400 administrative staff and 3,000 operating staff. These personnel operate and dispatch trains on various lines that the RTA owns, having purchased these lines from freight railroads over several years. Its crews operate trains on lines that are leased from freight railroads and dispatched by those railroads. Metra's forces also maintain train sets that run on lines owned and leased by Metra. BNSF and UP dispatch and provide crews for Metra trains on their lines in and around Chicago. The freight railroads also maintain the Metra equipment that runs on their lines. Other Metra staff duties include, among other things:

- Oversight of operating and maintenance contracts with BNSF and UP.
- Oversight of a lease agreement with Amtrak for facilities at Chicago Union Station.
- Ticket sales, marketing, and promotion.
- Security and maintenance at some stations (Metra is trying to turn over functions like security and maintenance at some stations to the communities which they serve).

*Operating Subsidy Requirements:* There is no cost sharing for commuter rail services per se among the counties making up the RTA. To cover operating subsidy requirements, the RTA distributes to its three Service Boards (including Metra) revenues generated through a 1 percent sales tax in Cook County and a 0.25 percent sales tax in all the other counties. Eight-five percent of the funds are distributed by formula, and the distribution of the remaining 15 percent is discretionary. The RTA mandates that its various services in total generate a 50 percent farebox recovery, or the portion of operating costs covered by fare revenue. Metra alone generates a 55 to 58 percent farebox recovery – a comparatively high figure made possible by high ridership.

*Local Capital Requirements:* To cover Metra capital requirements, the RTA seeks funds from both federal and state sources. The State of Illinois matches some federal funds on an 80 / 20 basis. In addition, interest earned on a sum generated in a 1989 fare increase contributes toward capital costs. No local funds are utilized for capital requirements, and accordingly there is no local capital cost sharing required for Metra. However, sales tax revenue that was not used for operating cost subsidy requirements can be converted into local contributions for capital costs.

***Sounder:*** Sounder is the Seattle – Tacoma area commuter rail service, presently running four peak-period trains per weekday and carrying about 1,500 riders daily. The full build-out of the

system in 2004 will include 30 trains, with extensions to Everett on the north and Lakewood on the south; 18 of the trains will operate between Seattle and Tacoma. All service will be during peak periods; no weekend service is envisioned at present. Ridership in 2007 is expected to reach almost 13,000 daily riders.

Sounder is operated by Sound Transit, a public transportation agency serving Snohomish, King, and Pierce Counties. Sound Transit is formally known at the Central Puget Sound Regional Transit Authority. It is a multimodal agency operating express buses and light rail services as well as commuter rail.

Sound Transit was created by voter approval in the three counties in 1996. The agency was created under provisions of 1993 Washington State law that permitted the three counties along with various municipalities to agree to the formation of a centralizing authority for serving regional transportation needs. The agency is governed by a board consisting of representatives of the counties, various cities, and the Washington State Department of Transportation.

*Staffing and Staff Functions:* Sounder itself is headed by a Director, who reports to the Sound Transit Executive Director. The primary duty of the Director is to manage contracts with BNSF for operations, and with Amtrak for equipment maintenance, as well as negotiation of railroad access and right-of-way maintenance contracts. Sounder uses BNSF lines, train crews, and dispatchers.

*Cost Sharing:* As with Metra, there is no direct cost sharing for the commuter rail service among counties served, since Sounder is part of Sound Transit, a multimodal, multi-jurisdictional transit agency. As for the agency's costs, a sales and use tax of 0.4 percent and a Motor Vehicle Excise tax of 0.3 percent were approved for Sound Transit's use in the 1996 vote in the three counties. Subsequent to the referendum, the Sound Transit Board also authorized a rental car tax of 0.8 percent in the counties. These taxes fund both capital requirements and operating subsidy requirements for Sound Transit's bus, light rail and commuter rail operations. In addition, Sound Transit seeks federal funds for its various operations. A 1999 state initiative, "I 695", severely restricted the use of state funds for transit use. As a result, the state has not proved a major source of support for Sound Transit's (and accordingly Sounder's) capital and operating needs.

***Coaster:*** The Coaster is the commuter rail service in the San Diego area. It offers weekday and Saturday service, and runs 18 weekday trains, carrying about 4,500 riders per day on its line between Oceanside and San Diego. The Coaster is operated by the North San Diego County Transit District (NCTD), which also operates an extensive bus service in the county north of downtown San Diego. No enabling legislation was required to initiate the service.

In the early 1990s, NCTD purchased right-of-way of the former Atchison, Topeka and Santa Fe Railway (now BNSF) from the Orange County Line to Del Mar, just north of San Diego. San Diego's public transportation agency, the Metropolitan Transit Development Board (MTDB), purchased the right-of-way between Del Mar and downtown San Diego. The entire purchase was of about 45 route-miles, excluding a branch between Oceanside and Escondido which may see a self-propelled Diesel Multiple Unit (DMU) operation in the near term. NCTD maintains all lines south of the Orange County Line to downtown San Diego. Subsequent to the right-of-way

acquisition, NCTD purchased rolling stock and began Coaster operations in 1995. Even though Coaster crosses jurisdictional lines of the transit agencies for North San Diego County and the City of San Diego, management is in the hands on one existing agency, NCTD.

*Staffing and Staff Functions:* There is no specific Coaster institutional structure. Coaster management is the responsibility of NCTD employees, who in turn report directly to NCTD senior management and ultimately to the NCTD Board. The duties of NCTD staff charged with Coaster-specific responsibilities include, among other things:

- Oversight of operating contracts with Amtrak. Amtrak provides the crews for Coaster trains, and maintains Coaster rolling stock and right-of-way.
- Oversight of operating agreements signed with BNSF and Amtrak that allow access onto NCTD owned right-of-way for freight and intercity passenger trains in exchange for contributions toward maintenance of way costs and capital improvement projects.
- Oversight of operating and dispatching contracts with SCRRA. SCRRA operates Metrolink commuter trains north from Oceanside to downtown Los Angeles. These trains run on NCTD's line between Oceanside and the Orange County line – a distance of about five miles. Also, SCRRA trains that "overnight" in Oceanside receive "light maintenance" at the Coaster maintenance facility just north of Oceanside. SCRRA dispatchers in Pomona (east of Los Angeles) dispatch Amtrak, Coaster and SCRRA trains on the NCTD line, as well as other SCRRA lines.
- Ticket sales, marketing, and promotion.
- Station maintenance and improvement.

*Operating Subsidy Requirements:* NCTD covers Coaster's operating subsidy requirements through a 0.5 percent sales tax assessed in San Diego County. NCTD receives 30 percent of the county sales tax revenues for its bus and rail operations. There is no JPA-like structure governing Coaster, and therefore no JPA-like sharing of operating cost subsidies.

*Local Capital Requirements:* To meet capital requirements, NCTD obtains some funds from both BNSF and Amtrak, which utilize the line for their freight and intercity passenger services. These entities contribute because capacity improvements on the line benefit commuter, freight, and intercity passenger services. NCTD uses mostly federal and state funds for capital improvements on the line. There is no JPA-like structure governing Coaster, and therefore no JPA-like sharing of local capital requirements.

## SUMMARY AND RECOMMENDATION

Based on the preceding review, this section outlines a possible institutional structure and staffing arrangement for a Mat-Su – Anchorage commuter rail service.

### Institutional Structure

The preceding review identified four types of institutional structures in place at the nine commuter rail operations. These are:

- Joint Powers Agencies, which run ACE, Caltrain, Metrolink.
- Independent Special District, which runs Tri-Rail.
- Joint projects or partnerships between transit agencies, which run TRE and VRE.
- Multimodal transit agencies, which run Metra, Sounder, and The Coaster.

Of the four structures, a California-style JPA is recommended. This is because a JPA appears to be the most practical alternative for an Anchorage area, multi-jurisdictional commuter rail agency. No specific enabling legislation appears necessary, as is the case for Independent Special District. A JPA-like structure would have an exclusive commuter rail focus, which would be helpful in building a successful, commuter-oriented service. The governing agency would be a voluntary association of various government agencies representing jurisdictions served by commuter rail. Participants may include the municipalities of Anchorage, Wasilla, Palmer, and the Mat-Su Borough. Because the service will have an impact on the state's highway system by diverting commuters from cars to trains, the Alaska Department of Transportation and Public Facilities may have an interest in becoming a part of the agency. Each of these entities could be represented on the commuter rail agency's governing board. Day-to-day responsibilities would be in the hands of a professional management staff.

Alternatively, a partnership of the area's bus transit agencies – People Mover in Anchorage and MASCOT in Mat-Su – could be formed for commuter rail. This, too, might not require enabling legislation. However, doing so would require these operators to joint venture in order to develop a distinct commuter rail service at a time when they are building their existing operations. Also, the commuter rail service could be incorporated into the larger of the two bus operators, People Mover. However, assuming a commuter rail operation may detract from People Mover's core competence in bus operations.

## Staffing and Staff Functions

Reporting to the agency's governing board would be a limited agency staff, consisting of a General Manager, a Controller of Finances, and administrative assistants. Prior to start-up of operations, the primary duties of the staff would include, among other things:

- Acquisition of federal and state funds for capital requirements, i.e., stations, rolling stock, and the Wasilla car shop.
- Analysis of environmental impacts of new station construction, noise, and emissions.
- The building of stations and the Wasilla car shop, and the acquisition of rolling stock.
- Negotiation of operating and maintenance agreements with the Alaska Railroad Corporation (ARRC), which would provide the trackage rights and dispatching for the service's trains.
- Negotiation with an independent contractor, or alternatively with ARRC, which would provide train crews and MOE forces.

- Negotiation of transit integration agreements with People Mover in Anchorage and MASCOT in Mat-Su. These transit agencies will provide shuttle services to and from commuter trains.
- Negotiation of other contracted services, including security and light maintenance forces, legal counsel, auditing, and operational and management consulting.

Once the commuter service is operational, continuing duties of the management staff would include, among other things:

- Oversight of contracts signed with the ARRC and other service providers.
- Ticket sales, marketing, and promotion.
- Station improvements.

The costs for agency staff and contracted operations and services were included in the financial plan appearing in Chapter 2.

Most, but not all, funding for capital requirements may come from federal and state sources, not all will. Most of the counties comprising the SCRRA / Metrolink system, for example, contribute funds generated by sales taxes to cover both capital and operating costs. As for operating subsidy requirements, these will likely be raised partially, if not entirely, on the local level. All of the nine commuter rail agencies reviewed here look to local sources (through special taxes or General Funds) for operating subsidy requirements. In all likelihood, an Anchorage area commuter rail service will as well. Accordingly, the first question before any multi-jurisdictional agency will be how to develop a comprehensive funding plan and strategy, including local sources. And in planning for local contributions to local capital and operating subsidy requirements, one issue quickly surfaces. That is, how will these contributions be shared among the member entities?

## Cost Sharing

There are various ways to share costs among a commuter railroad's member agencies. All approaches are arbitrary, for there is no "right way" to share costs other than on the basis to which the member entities agree. In other words, cost sharing should be a matter of negotiation.

It is clear that the various methods by which local costs are split reflect attempts at spreading costs among member agencies equitably. Whether the driving factor is boardings, or boarding and alightings, or route miles, the attempt is to link costs with benefits derived in some fair way that the member agencies can live with. And getting to that point will require negotiation.

In sum, possible means of splitting operating costs include:

- Train-mile proration per county for "discretionary" (variable) operating costs, and on the basis of a combination of route-mile and number of stations in a county for "base" (fixed) operating costs (Metrolink).
- Morning boardings only per county for operating costs (Caltrain and VRE).
- A combination of morning and evening boardings per county for operating costs (ACE).
- A strict equal percentage split of operating costs per county (Tri-Rail).
- Revenue per seat-mile basis per county (TRE).

Possible means of splitting local capital costs include:

- Costs of improvements are the responsibility of the county in which upgrade occurred (Metrolink and TRE).
- A strict equal percentage split of local capital costs per county (Caltrain).

# CHAPTER HIGHLIGHTS

## CHAPTER 5: NEXT STEPS

- Local governments in the Anchorage area need to join together to create a commuter rail Joint Powers Authority (JPA) management agency. The Alaska Department of Transportation and Public Facilities (ADOT/PF) also is a potential participant. The JPA will be responsible for setting policy, and for providing management and financial oversight for the commuter service operated under contract by an independent contractor or ARRC.
- Securing funding will be a primary task for the new commuter rail agency. It will need to develop a detailed funding plan that identifies all potential federal, state, and local sources of both capital and operating funds. The agency also will need to work out cost-sharing agreements with its local government members, defining how each partner will contribute to the costs of the service.
- The commuter rail agency will need staff. The initial need is for a Project Manager who can oversee contracts for preliminary engineering, environmental studies, rolling stock procurement, and station and facility construction. Over time, this responsibility will shift to a General Manager responsible for day-to-day operation of the system. The agency will need a controller responsible for finance issues, and clerical assistants.
- Preliminary engineering will be necessary to establish design criteria and specifications, and to prepare detailed cost estimates. This work will need to be coordinated with ongoing rail and highway projects accomplished by ARRC and ADOT/PF.
- Environmental analysis may be required if the agency seeks federal funds, particularly for any improvements outside of existing rail rights-of-way, such as stations and the Wasilla car shop.
- Final engineering and construction will need to be coordinated with ARRC and ADOT/PF, and will follow completion of the preliminary engineering. This level of design will provide construction plans, and may be executed by private contractors or by railroad personnel.
- Rolling stock procurement will include final evaluation and selection of equipment, and preparation of specifications for purchase and/or remanufacturing as necessary.
- Operations planning refinements may be necessary because needs of both commuters and the ARRC may change over time. Schedules, crew requirements, and staffing needs will be refined in a continuing process, even after service is initiated.
- Operating agreements will need to be negotiated with the ARRC for track access and dispatching services. Needed also will be contracts for the provision of train crews and equipment maintenance forces, either by ARRC or an independent contractor. If ARRC provides these services, ARRC union contracts will need to be reviewed, and negotiations may be necessary for any contract changes brought about by the commuter service.

- Other service agreements will be needed for station maintenance service, revenue collection and ticket machine maintenance, and similar incidental functions that likely will be contracted to service providers.
- Transit integration will be essential to move commuters efficiently between home and train, and between train and work locations. Cooperative negotiations with People Mover and MASCOT will be needed to work out operating and funding arrangements for integration of transit services.
- The commuter agency will need to hire support staff to assist the General Manager initiate services. These staffers will include a controller of finances and administrative assistants. The staff will arrange for the provision of legal, accounting, marketing, and technical consulting services for the agency on an ongoing basis.
- Debugging all systems and equipment prior to start-up should be included in all procurement and construction contracts, with provision for remedies in event of any failures discovered.

# Chapter 5
# NEXT STEPS

## INTRODUCTION

This chapter analyzes what needs to be done in the short term to move the concept of Anchorage area commuter rail service forward to reality. First of numerous tasks is forming a multi-jurisdictional agency. This agency, similar to a California-style Joint Powers Authority (JPA), will consist of the municipalities of Anchorage, Wasilla and Palmer, the Mat-Su Borough and potentially the Alaska Department of Transportation and Public Facilities (ADOT/PF). Its initial responsibility will be to secure funding of both capital improvements and operating subsidy requirements. It must also decide how to share system costs that are not covered by federal funds, state funds, and other non-local sources.

With funding in place, other elements of a service can be addressed. A Project Manager, reporting to the JPA's Board, should be hired. The Project Manager's duties will include working with ARRC and ADOT/PF on the preliminary engineering of improvements required for commuter rail service. At the same time, the Project Manager would contract for the environmental analysis of the impacts of these improvements and of potential mitigation. The Project Manager conceivably could be retained to oversee the actual implementation of the capital improvements and the acquisition of rolling stock.

At some point, the Project Manager for implementation will transition to a General Manager for the service. The change in responsibilities is best described as a shift from building the system to running the commuter trains. The General Manager's role will involve negotiations with ARRC for train dispatching and track access, negotiations with ARRC or an independent contractor for train crews and MOE forces, negotiations with People Mover and MASCOT for transit service at the stations, applications for additional funding, and refinement of operating plans, and system "debugging" prior to start-up, perhaps as soon as 2005.

## ESTABLISHING AN INSTITUTIONAL STRUCTURE

Because the service will cross jurisdictional lines, a multi-jurisdictional agency is an appropriate structure for the governance of an Anchorage area commuter rail service. As noted in the previous chapter, establishing such a structure appears permissible under Alaska law. Jurisdictions served by commuter trains must come together to form an agency, whose goals will be to secure funding for the service, implement the required improvements if funding can be obtained, and finally initiate and manage the service. Formation can simply be a matter of agreement among various jurisdictions on these three fundamental goals.

A California-style Joint Powers Authority serves as a model for an Anchorage area commuter rail agency. Chapter 4 profiles three such JPAs. In all three cases, the JPAs consist of jurisdictions (California counties) served. Their principal tasks are securing funding for capital

improvements and operations, and management of the service. The responsibilities of a multi-jurisdictional agency for Anchorage area commuter service would be the similar. Likely participants would include the municipalities of Anchorage, Wasilla, and Palmer, and the Mat-Su Borough. And because the service will have an impact on the state's highway system by diverting commuters from cars to trains, ADOT/PF may also have an interest in becoming part of the agency. Either elected representatives or senior staff of the member agencies would serve on the commuter agency's governing board.

## COMMUTER RAIL FUNDING PLAN

Once formed, the agency should turn its attention to securing capital and operating funds for the service. Required capital improvements include stations, a car shop in Wasilla, and rolling stock. Since the service at start-up can be expected to generate fare revenue of only about 22 percent of operating costs (assuming RDCs operated on a Minimal Service Level between Wasilla and Anchorage by an independent contractor), there will be operating subsidy requirements. While federal funding (such as CMAQ funds) may be found to offset some or all operating subsidy requirements in the short term, the requirements will need a local funding source in the long term.

Accordingly, the agency should undertake a comprehensive funding plan, which will thoroughly explore all potential funding sources – federal, state, and local. The analysis will project the funding needs over time, and will articulate a specific plan on how these needs will be covered. A funding consultant with a proven record in detailing financing plans for commuter rail agencies could perform this analysis.

The agency members must also decide how they will share capital and operating costs that are not covered by federal or other non-local funding sources. Each of the three JPAs profiled in Chapter 4 addressed this issue in its own way. Indeed, the solutions were products of negotiations among the member agencies of each JPA. It is anticipated that the members of an Anchorage area commuter rail JPA likewise would craft a cost sharing solution based on their particular needs.

In order to take these initial steps, JPA members should agree to jointly cover the attendant expenses. Foreseeable needs include paying a financial consultant to perform the funding plan, covering meeting costs, and paying a consultant to pursue grants for which the service would be eligible.

## PURSUING FUNDS AND HIRING A PROJECT MANAGER

Once the funding opportunities become clear, the agency will need to pursue funding sources. The agency may do so by relying on consultant assistance to file applications for various grants. The immediate goal will be to obtain sufficient funds in order to hire a Project Manager who will, among other things, initiate the preliminary engineering of capital improvements and the environmental analysis relative to these improvements.

The Project Manager will be a driving force behind the project, assumed here to be implementation of minimal Wasilla-only service by 2005. Primary tasks for the Project Manager will be contracting for preliminary engineering and environmental analysis. Since the track north of Anchorage is currently being improved, the preliminary engineering and environmental analysis will focus on:

- Preliminary engineering design of five stations, i.e., Wasilla, Matanuska, Eagle River, Elmendorf, and Anchorage, and of a Wasilla car shop.
- Environmental analysis of the impacts of station and service facility construction and operation.
- Final engineering design and construction.
- Rolling stock design and procurement.

The Project Manager will report directly to the multi-jurisdictional commuter rail agency's governing board.

At some point, the Project Manager will yield responsibility to a General Manager, whose focus will be implementing the service rather than building the system. The General Manager's staff will consist of a controller and two clerical assistants. In total, their duties will include day-to-day management of the system. Prior to the service start-up, specific tasks will include:

- Refinement of operating plans.
- Negotiation of operating agreements with ARRC for sharing dispatching and maintenance of way costs allocated to commuter services.
- Negotiation of train crew and equipment maintenance forces with either the ARRC or an independent contractor.
- Negotiation of contracts with other service providers, i.e., security personnel, revenue collectors and facility maintainers.
- Negotiation of transit integration agreements with People Mover and MASCOT.
- Hiring of staff and selection of additional contract services, i.e., legal, accounting, marketing, and technical consulting.
- Rigorous testing of rolling stock and other equipment and facilities to "debug" the service prior to start-up.

Following in the steps of the Project Manager, the General Manager will report directly to the agency's governing board.

To assist the Project Manager, and later the General Manager, in contracting for services and in the various negotiating agreements, the JPA should secure or retain the services of attorneys skilled in these details.

Beyond the technical details of implementing services, which are discussed below, one of the primary duties of the Project Manager, and subsequently the General Manager, will be to advocate the service and explain its merits to the public. Inevitably, there will be naysayers and opponents who will fight commuter rail in the press and in other venues. The service managers must be capable of communicating the benefits of the system and building public support.

## PRELIMINARY ENGINEERING

This study's research pertaining to stations concentrated on the likely costs of acquiring land, building essential structures such as a platform and shelters, and providing specific amenities like parking, bus turn around areas, lighting, and ticket vending machines (TVMs). In several locations, final station sites have not yet been identified. These include Matanuska, Eagle River, and Elmendorf. Likewise, a location for the Wasilla car shop has not been precisely determined. Moving forward, the Project Manager should accomplish the following tasks pertaining to the preliminary engineering design (PE) of these facilities:

- Based on ridership projections and the commuter profile appearing in Chapter 1, develop program of user needs for stations (e.g., proximity to population centers and ease of access).
- Evaluate potential rail station and car shop sites, assessing opportunities and constraints of potential sites against user needs for those sites.
- Based on a selection of likely candidate sites, develop a concept site master plan layout for each site.
- Expand on the prototypical station concept sketches appearing in the Appendix for architectural elements, such as pedestrian shelters, that would be used at all stations.
- Develop a sketch to the same level of detail for a Wasilla car shop.
- Develop a set of design standards covering furniture (in-shelter seating), lighting, signage, landscaping, etc., that could be employed on all stations.
- Refine the preliminary cost estimates for improvements at each site.
- Develop a specific design and costs for each station and for the car shop.

Private contractors, including engineers and architects, would perform this work under the supervision of the Project Manager. For planning purposes, this study assumes the contractors will complete this work within a year and a half from January 2002. The longer time frame is realistic, given that preliminary engineering is to a degree dependent on an environmental assessment of the project. That is, PE will provide solutions to the environmental impacts that will need mitigation. Preliminary engineering must be coordinated with ARRC, as the facility work will involve ARRC property.

The Project Manager will represent the interests of the commuter rail service with regard to track improvements performed by Alaska Department of Transportation and Public Facilities as a

result of new highway construction north of Bird Point to South Anchorage. By doing so, the Project Manager would facilitate the agency's extension of service to Girdwood, should the agency decided to go there one day.

## ENVIRONMENTAL ANALYSIS

Should the commuter rail agency seek federal funds for this project, an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) likely will be required. While improvements within existing rail rights-of-way may be exempt from environmental review, this is not true of improvements outside of the rights-of-way. Station and service facilities may be outside the existing right-of-way. Seeking federal funds for these various improvements likely will trigger the need for the EA / EIS process. In Chapter 3, Federal Transit Administration (FTA) "New Starts" funding was identified as a potential funding source.

Projects which are proposed for federal funding by the FTA must meet the requirements of the National Environmental Policy Act (NEPA). NEPA requires federal agencies to carefully consider the environmental effects of the projects that they propose to fund before making a decision to proceed. Like other federal agencies, the FTA relies on past experience with a wide variety of mass transit projects to select the appropriate level of environmental impact assessment and review. Among these are the EA and the more detailed EIS processes. Many types of projects can be processed with minimal or no environmental documentation. Major projects involving substantial new construction and greater off-site impacts are handled with specially prepared environmental documents and a formal review-and-comment process. The environmental process for rail construction projects is typically 18 to 24 months. As the initial phase of operations will be between Anchorage and Wasilla with no new right-of-way construction required, the time frame will be shorter.

Key issues that an environmental analysis of the commuter rail service will address may include the following:

- Land use and planning: compatibility of station site development and overnighting facilities with current land plans.
- Geologic concerns: presence of fault zones.
- Transportation: potential for traffic delays at crossings.
- Biological resources / wetlands: potential station sites might be located in wetlands areas (e.g., Matanuska or Parks / Glenn Highway interchange).
- Noise: sensitive noise receptors are alongside the right-of-way.
- Cultural resources: depots and other historic resources exist along the right-of-way (e.g., the existing passenger terminal in Anchorage, which will be used by the commuter service during the off-season).

This work, performed by private contractors, can occur in tandem with preliminary engineering, as the two efforts will be intrinsically related.

## FINAL ENGINEERING AND CONSTRUCTION

As with preliminary engineering, final engineering design of improvements must be coordinated with ARRC. The goal will be to produce designs for the construction of station and service facilities. Working with the ARRC, the Project Manager will lead the agency's efforts in getting the engineering design of station and service facilities under contract. Final design and construction likely will be done using private contractors. This work would take about two years to complete from the summer of 2003.

## ROLLING STOCK PROCUREMENT

The rolling stock discussion in Chapter 2 outlined the equipment options for the rail service. Of all types reviewed, remanufactured RDCs appear to offer the superior combination of characteristics that would be desirable for an Anchorage area commuter rail service. Among other things, RDCs are "known quantities" to the Alaska Railroad which may be charged with running them and maintaining them. They are fully compliant with FRA standards regarding crashworthiness for operation on track shared with freight trains and conventional passenger trains. They also can be operated bi-directionally, eliminating the need for wyes to turn the equipment. Finally, there appear to be sufficient RDCs on the market, which could be remanufactured for commuter rail service.

Procurement of these vehicles will entail sizable design costs compared to the traditional "off the shelf" locomotive-hauled train set. Though the shell of each car, its frame, chassis, wheel sets and engine will be the same, the interior and all electrical systems will be new. As noted in Chapter 3, several of these cars were remanufactured for the Trinity Rail Express commuter service in Dallas, and the experience there suggests a price tag per car of about $2 million (in year 2000 dollars), including the used equipment purchase. The remanufacturing design would be performed by a contractor, overseen by the Project Manager, preferably in consultation with ARRC personnel who may be contracted to maintain it. Lead-time for a remanufactured Budd car could be as long as two years. Assuming a start-up in late 2005 (following termination of summer trains and before the advent of adverse winter weather), the Project Manager should place the order for the equipment for no later than summer 2003.

However, before this, the Project Manager should investigate thoroughly the feasibility of acquiring RDCs and having them remanufactured. This would involve site visits to the current owners of the equipment in Canada and the eastern United States. For this effort, the Project Manager may wish to employ a private contractor skilled in assessing the potential of this equipment for remanufacturing. If the Project Manager determines that the equipment does not exist in sufficient number or cannot be remanufactured economically, then Project Manager should anticipate placing an order for conventional locomotive-hauled rail equipment.

## OPERATIONS PLANNING REFINEMENTS

While this study recommends a Minimal Service Level for Wasilla-only operations, it should be noted that start-up is several years away. The needs of the potential rail commuters may change over time, requiring refinement of schedule times. Also, since the service will operate on track shared with ARRC, the railroad's changing needs must also be taken into account. Specific refinements would likely involve:

- Fine-tuning schedules in accordance with changing commuter needs and ARRC's now unforeseen future operating demands.
- Fine-tuning crew requirements, which may vary with schedule changes.
- Fine-tuning staffing needs, i.e., maintenance, security and administration.

With rolling stock and facilities projects underway, the Project Manager's role will transition to that of a General Manager, whose initial focus will be on bringing the system into operation. A critical area for his attention will be fine tuning the operating plans to ensure that they meet the as yet unknown needs of the potential riders and of the ARRC. Specifically, any revisions of schedules to accommodate rider needs must be thoroughly tested against the ARRC traffic patterns between Wasilla and Anchorage to determine if conflicts between passenger and train schedules exist and how they might be resolved. Plans should continue to be refined up to the first day when trains actually run, so that the system can be made as efficient, effective, and safe as possible.

## OPERATING AGREEMENTS

While the commuter rail agency will sponsor the service, the Alaska Railroad, at a minimum, will provide track capacity and dispatching personnel essential to the service under contract. To this end, the General Manager will be charged with developing operating agreements for the agency with ARRC for the commuter rail service. With regard to provision of crews and maintenance forces, ARRC will compete for these contracts. Should it succeed, ARRC would assign personnel to work and maintain the commuter trains. Their employer will continue to be ARRC, and the terms of their existing labor contracts with ARRC will be in force. This would mean that any changes in the existing contract provisions that may be sought for the commuter rail service will have to be negotiated first between the ARRC and the unions representing its employees assigned to commuter duty.

The General Manager also will negotiate with ARRC regarding:

- Provisions for sharing track between Wasilla and Anchorage.
- Use or purchase of right-of-way for stations and the Wasilla car shop.
- Use of the existing Anchorage Passenger Terminal during the off-season for passenger boarding and alighting.

- Use the Denali Star for reverse commute trips, along with appropriate revenue / cost sharing agreements.

The ARRC might facilitate the start-up of commuter service by purchasing the RDC rolling stock, provide for remanufacturing, and then leasing it to the commuter rail agency. In doing so, the ARRC would relieve the agency and its management of various administrative tasks related to the procurement and remanufacturing of the equipment, and thereby lower costs for the agency. Such an arrangement would require a separate agreement.

## OTHER SERVICE AGREEMENTS

The General Manager will have to contract with service providers. Needed will be contracts for the following:

- Train crews and equipment maintenance forces provided by an independent contractor, should ARRC not be selected for the provision of these services.
- Custodian services for station and service facilities.
- Revenue services: personnel who will collect ticket revenues from TVMs at stations.
- Lease of administrative offices and appropriate office equipment and furnishings.
- Lease of utility vehicles for agency managers.

With regard specifically to transportation and equipment maintenance services, the JPA will hire either an independent contractor or the ARRC to perform these functions. JPA employees will not be running or maintaining trains. Rather, JPA staff will oversee the performance of those providing the transportation and equipment maintenance services. In the same way, JPA employees will oversee all other contracted services.

## TRANSIT INTEGRATION

The transit services in Anchorage and Mat-Su have expressed a willingness to work toward a meaningful integrated transit alternative for rail passengers. Additional focus should be on developing of a specific transit integration plan. This plan should detail the physical facilities and equipment required to implement real transit integration. Physical facilities would include sufficient room at stations for bus turn-arounds. Equipment would include ticket vending machines (TVMs) that print tickets with transfers to local buses. The presence of TVMs will be a key factor for effective fare integration.

Most importantly, the General Manger should commence negotiations with People Mover and MASCOT with regard to the specifics of an integrated transit service. Specifics should include:

- Identifying connections between trains and buses
- Allocation of turn-around space at stations
- A fare integration methodology

Specifics should also include establishing of a common transit user information "hot line", e.g., 1-800-BUS-RAIL and a Website, by which transit users could obtain schedule information for both modes. Also, schedule information should be available from People Mover and MASCOT call-in information systems and from their Websites (www.peoplemover.org and www.valleyrides.com).

## HIRING SUPPORT STAFF

The General Manager's staff will include a controller and two clerical assistants. These personnel should be hired as the General Manager's need for them develops. All staff should be in place by 2005, several months in advance of initiation of service in the fall of 2005, as the agency's work load will grow during the run-up to start-up.

To support service initiation, the staff will need appropriate legal, accounting, marketing and technical consulting expertise. Accordingly, the General Manager and the controller should bring these service providers on line also as the need for them develops.

## DEBUGGING THE SYSTEM AND CUTTING THE RIBBON

Once the stations are built, TVMs installed, and the rolling stock delivered, all systems must be thoroughly tested to ensure they will operate without problems at start-up. The General Manager must include the timelines for this pre-operations testing in the service's implementation schedule. Procurement and construction contracts should include appropriate provisions and remedies for any functional failures discovered during testing. Once the trains and all ancillary services have been debugged, the agency can initiate service.

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# South Central Rail Network
# Commuter Study and Operation Plan

**Final Report**
**January 15, 2002**

# Appendices

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# Appendix A
# RIDERSHIP CALCULATION TABLES

Tables A-1 and A-2 detail the calculation of the number of weekday commuters from Mat-Su and Girdwood bound for workplaces in Anchorage during the winter and summer in the year 2005. Assumptions include:

## Mat-Su – Anchorage (Table A-1)

- A Mat-Su commuter base of 9,500
- An Eagle River commuter base of 8,700
- The same workplace dispersion patterns as for Anchorage residents
- Higher capture rates allocated to longer commutes and areas with comparatively short shuttle rides
- Wintertime capture rates higher than summer

## Girdwood – Anchorage (Table A-2)

- A Girdwood commuter base of 750
- The same workplace dispersion patterns as for Anchorage residents
- Higher capture rates allocated to longer commutes and areas with comparatively short shuttle rides
- Wintertime capture rates higher than summer

**Table A-1**

**Mat-Su - Anchorage Inbound Commuter Rail Forecast for Winter 2005**

| Areas | % of Jobs | Matsu Capture Rate | ER Capture Rate | # of Matsu Commuters | # of ER Commuters | Total Commuters |
|---|---|---|---|---|---|---|
| Elmendorf | 4.3% | 6% | 1.5% | 25 | 6 | 30 |
| Downtown | 15.0% | 7% | 1.8% | 100 | 23 | 123 |
| Midtown | 14.3% | 6% | 1.5% | 82 | 19 | 100 |
| AIA | 3.5% | 5% | 1.0% | 17 | 3 | 20 |
| Dimond | 6.2% | 4% | 0.8% | 24 | 4 | 28 |
| University | 10.2% | 5% | 1.0% | 48 | 9 | 57 |
| Total | | | | 294 | 63 | 358 |

Asumptions:
Base of Matsu commuters: 9,500
Base of Eagle River commuters: 8,700

**Mat-Su - Anchorage Inbound Commuter Rail Forecast for Summer 2005**

| Areas | % of Jobs | MSB Capture Rate | ER Capture Rate | # of Matsu Commuters | # of ER Commuters | Total Commuters |
|---|---|---|---|---|---|---|
| Elmendorf | 4.3% | 5% | 1.3% | 20 | 5 | 25 |
| Downtown | 15.0% | 6% | 1.5% | 86 | 20 | 105 |
| Midtown | 14.3% | 5% | 1.3% | 68 | 16 | 83 |
| AIA | 3.5% | 4% | 0.8% | 13 | 2 | 16 |
| Dimond | 6.2% | 3% | 0.6% | 18 | 3 | 21 |
| University | 10.2% | 4% | 0.8% | 39 | 7 | 46 |
| Total | | | | 244 | 53 | 296 |

Asumptions:
Base of Mat-Su commuters: 9,500
Base of Eagle River commuters: 8,700

**Table A-2**

**Girdwood - Anchorage Inbound Commuter Rail Forecast for Winter 2005**

| Areas | % of Jobs | GW Capture Rate | # of GW Commuters |
|---|---|---|---|
| Elmendorf | 4.3% | 4% | 1 |
| Downtown | 15.0% | 6% | 7 |
| Midtown | 14.3% | 4% | 4 |
| AIA | 3.5% | 4% | 1 |
| Dimond | 6.2% | 6% | 3 |
| University | 10.2% | 4% | 3 |
| Total | | | 19 |

Asumption:
Base of Girdwood commuters: 750

**Girdwood - Anchorage Inbound Commuter Rail Forecast for Summer 2005**

| Areas | % of Jobs | GW Capture Rate | # of GW Commuters |
|---|---|---|---|
| Elmendorf | 4.3% | 3% | 1 |
| Downtown | 15.0% | 5% | 6 |
| Midtown | 14.3% | 3% | 3 |
| AIA | 3.5% | 3% | 1 |
| Dimond | 6.2% | 5% | 2 |
| University | 10.2% | 3% | 2 |
| Total | | | 15 |

Asumption:
Base of Girdwood commuters: 750

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# Appendix B
# MAT-SU COMMUTER SURVEY

The analysis of the Mat-Su commuter telephone survey conducted by Craciun Research Group in February of this year is presented in this appendix. Included are a description of research methods, the research findings, and an appendix including an analysis of why commuters would not want to take a commuter train, and the survey form itself.

Wilbur Smith Associates requested the survey on behalf of the Alaska Railroad Corporation.

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**A Marketing Research Report**

***Prepared for***

# Wilbur Smith Associates and The Alaska Railroad Corporation

February 9, 2001

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# I. BACKGROUND

In October 2, 2000, Jean Craciun, President/CEO of Craciun Research Group, Inc. (CRG) was invited to attend a meeting coordinated by Debby Bloom Consulting to discuss conducting market research for Wilbur Smith Associates (WSA) who is currently under contract with The Alaska Railroad Corporation (ARRC). Bruce E. Carr, Director, Project Administration ARRC asked CRG to design a study to understand more fully the market potential of Matanuska-Susitna Borough (MatSu) residents' travel patterns, current behaviors and perceptions, as well as interest in a proposed commuter rail service to Anchorage. A proposal for both quantitative and qualitative research was submitted and accepted by WSA on behalf of ARRC. It was agreed upon by our clients that the following research design would best meet the study objectives. This project would be conducted in two phases: 1.) quantitative telephone survey involving a minimum of four hundred MatSu commuters; and 2.) qualitative research consisting of two focus group research sessions with MatSu commuters.

Beginning on January 2 - 20, 2001, CRG contacted through a CATI telephone interview 1502 MatSu residents to assess interest and determine the feasibility of running a commuter rail service between the Valley and Anchorage. *The proposed train service we studied was one that would run on weekdays twice in the morning, leaving Wasilla between 6 and 7 a.m. and returning from Anchorage twice in the evening between 5 and 6 p.m.*

Two focus groups were held January 30 and February 1, 2001 at Craciun Research Group's Focus Group Facility in Anchorage. The two groups were comprised of MatSu residents who were identified by a screening process as fitting the profile of regular commuters who worked in the selected cluster areas in Anchorage and who had indicated interest in commuting by train within the specified timeframes. The focus group report is due to our clients on February 15, 2001.

Contained in the following report are the research findings of the survey with MatSu residents.

# II. RESEARCH METHODS

***Survey Instrument***

This survey instrument was designed by CRG, reviewed by WSA and approved by The Alaska Railroad Corporation.

Telephone interviews were conducted January 2 – 20, 2001. Professional interviewers conducted telephone calls utilizing our Computer Assisted Telephone Interviewing (CATI) system. This state-of-the-art technology allowed the Craciun Research Group interviewing team to conduct customized, interactive interviews with both speed and accuracy. The average length of time to conduct each survey was 11 minutes.

***The Sample***

The actual number of phone contacts that would be required to complete our study was originally an undetermined number of households; but we wanted to talk with a minimum of four hundred potential commuters. There were actually 10,950 calls that yielded 1502 contacts who were screened to be MatSu residents, including 398 people who travel to Anchorage regularly for work and 20 who travel for school, *for a total sample size of four hundred and eighteen (N=418) commuters.* These four hundred and eighteen commuters were asked further questions to determine the nature of their commute – how often the came to Anchorage, whether they did so in a regular pattern, whether their starting and ending times fit with the proposed train times and whether their days off were Saturday and Sunday. Those who traveled in a pattern that would fit with the proposed train schedules were asked further questions about possible obstacles to rail participation; as well as background that might provide selling points for using the train.

All fifteen hundred and two of the respondents were asked for demographic data, and almost all respondents who ever travel to Anchorage were asked how frequently they might use a commuter rail service.[1]

The margin of error for the sample of N=418 is $\pm$4.8 percent. In other words, the odds are 19 out of 20 that if researchers sought to survey all MatSu households, the findings would differ from the actual results by no more than 4.8 percentage points in either direction.[2]

The sampling error is not the only way in which survey findings may vary from the findings that would result from talking to every resident in the population studied. Survey research is susceptible to human and mechanical errors as well, such as interviewer recording and data handling errors. However, the standardized procedures used by the Craciun firm keep errors of this kind to a minimum.

[1] About one hundred respondents who travel to Anchorage less often than once a week were not asked about taking the train. This omission did not significantly affect the validity of the "train" question.

[2] The margin of error for the sample of commuters whose travel fit the proposed train schedule (179) is $\pm$7.2 percent.

### *The Interviews*

Craciun Research Group employs twenty associates who work on quantitative studies. Interviewers are trained in the skills needed to keep non-response to a minimum; this is particularly true in cases where length of the survey may discourage participation. Interviewers answer frequently asked questions, use vocabulary relevant to the study, and accurately record responses to all questions.

Five+ callback attempts were made to minimize bias that would result from relying on a sample of only those respondents who are easily contacted. All information gathered was kept strictly confidential.

### *The Analysis*

Members of the Craciun research team, employing the statistical capacity of The Survey System and SPSS[3], analyzed the sample. The primary procedures reported are frequencies and crosstabulations.

### *Notes to readers:*

Included in the presentation of each response is a summary or example of any significant findings, followed by relevant tables. All percentages in the narrative are rounded to the nearest whole percentage point.

In many cases a few respondents failed to answer a question. Unless the percentage of those who failed to answer is significant, these people are not included in the totals on which the percentages are based. Percentages in the tables occasionally do not add to exactly 100% because of rounding.

Crosstabulations describe data that may be related in some way. In many crosstabulations, categories are combined or omitted because the numbers are too small to be statistically significant. This manipulation may change the totals on which percentages are based, but does not affect the relationships between percentages.

Crosstabulations may be used to indicate differences (or lack of differences) between subgroups of people. When a lack of difference is being shown, a footnote is appended to the table indicating that the differences are not "statistically significant".[4]

[3] Trademark registered.

[4] Statistical significance is determined by using a chi-square test with a significance factor of less than .05. The chi square test is used by researchers to determine whether a result may be due to random variation, and is sensitive to sample size, since large random variation may occur in small samples.

# III. RESEARCH FINDINGS

## A. TRAVEL AND COMMUTING PATTERNS

**Question**

***First of all, does anyone in your household commute to Anchorage on a regular basis, either to work or school?***

***How often do you go to Anchorage?***

Four hundred and eighteen MatSu households (28%) have at least one member who works or goes to school in Anchorage. Three hundred people (20%) from these households come to Anchorage at least five days a week.

**TABLE A1.1: HOUSEHOLD TRAVEL TO ANCHORAGE**

| | | |
|---|---|---|
| Respondent: | | |
| Works in Anchorage | 398 | 26.5% |
| Goes to school in Anchorage | 20 | 1.3% |
| Subtotal, Anchorage Commuters. | 418 | 27.8% |
| Neither, but goes occasionally.. | 779 | 51.9% |
| No one in household goes | 305 | 20.3% |
| Total | 1502 | 100.0% |
| Goes to Anchorage: | | |
| Five or more days a week | 300 | 20.0% |
| One to four days a week | 237 | 15.8% |
| Every couple of weeks | 155 | 10.3% |
| Once or twice a month | 272 | 18.1% |
| Less often | 129 | 8.6% |
| No answer | 104 | 6.9% |
| No one travels to Anchorage | 305 | 20.3% |
| Total | 1502 | 100.0% |

The following table summarizes travel to Anchorage. It divides people who come into Anchorage fewer than five days a week (one to four days) between commuters who travel for work/school or travel occasionally.

**TABLE A1.2: SUMMARY OF HOUSEHOLD TRAVEL TO ANCHORAGE**

| | | |
|---|---|---|
| Valley population: | | |
| Commutes five days to Anchorage. | 300 | 20.0% |
| Commutes one to four days..... | 90 | 6.0% |
| Occasionally-one to four days | 147 | 9.8% |
| Commutes or goes in less often.. | 660 | 43.9% |
| No one in household ever goes... | 305 | 20.3% |
| | | |
| Total..... | 1502 | 100.0% |

**Question**

***Let's begin with some general questions about your commute. Do you work regular hours and have regular days off?***

***Do any of your shifts start between 7:30 and 8:30 in the morning on weekdays?***

***What time do you start?***

***What time do you get off?***

Eighty-seven percent (87%) of the three hundred people who come to Anchorage five days a week or more have regular hours and days off.

**TABLE A2.1: OVERALL WORKING PATTERNS OF FIVE DAY COMMUTERS**

| | | |
|---|---|---|
| Commuter has: | | |
| Regular hours | 262 | 87.3% |
| Irregular but some shifts begin between 7:30 and 8:30AM | 27 | 9.0% |
| Irregular, all shifts begin at other times | 11 | 3.7% |
| Total | 300 | 100.0% |

A number of people with regular hours do not start or finish work during the target times and/or do not have Saturday and Sunday off.

**TABLE A2.2: SHIFT DETAILS OF COMMUTERS WHO WORK REGULAR HOURS**

| | | |
|---|---|---|
| **Regular shifts start:** | | |
| 7:00AM to 7:29AM | 80 | 30.5% |
| 7:30AM to 7:59AM | 31 | 11.8% |
| 8:00AM to 8:29AM | 66 | 25.2% |
| 8:30AM to 8:59AM | 13 | 5.0% |
| 9:00AM to 9:30AM | 15 | 5.7% |
| Any other time | 57 | 21.8% |
| **Total** | 262 | 100.0% |
| **Regular shifts end:** | | |
| 3:30PM to 3:59PM | 34 | 13.0% |
| 4:00PM to 4:29PM | 56 | 21.4% |
| 4:30PM to 4:59PM | 44 | 16.8% |
| 5:00PM to 5:29PM | 55 | 21.0% |
| 5:30PM to 6:00PM | 29 | 11.1% |
| Any other time | 44 | 16.8% |
| **Total** | 262 | 100.0% |
| **Days off:** | | |
| Sat & Sun | 229 | 87.4% |
| Any other | 33 | 12.6% |
| **Total** | 262 | 100.0% |

Of all the MatSu residents interviewed:

*12% commute to Anchorage in the targeted pattern;

*8% commute to Anchorage regularly but not in the targeted pattern; and

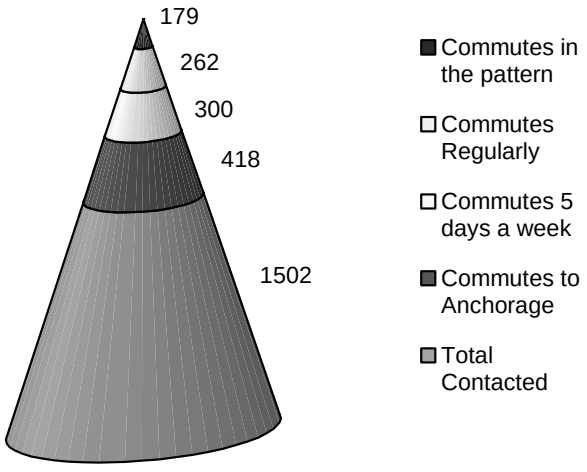
*60% travel to Anchorage irregularly.

Of the 1502 residents contacted, 418 are commuters (who work or go to school in Anchorage), 300 of them travel five days a week, while 262 work regular hours (not rotating shifts).

Of the two hundred and sixty-two, 179 begin and end work in the desired targeted times and have Saturday and Sunday off.

**TABLE A2.3: SUMMARY OF COMMUTER TRAVEL**

| | | |
|---|---|---|
| Commuter: | | |
| Commutes in the pattern | 179 | 11.9% |
| Commutes out of the pattern | 121 | 8.1% |
| Travels irregularly | 897 | 59.7% |
| Does not travel to town | 305 | 20.3% |
| Total | 1502 | 100.0% |



**Question**

***Which of the following is closest to where you live –***

***In Wasilla, (South Church Road at the railroad tracks)***
***The Palmer Fairgrounds***
***Parks/Glen Interchange***

***I will read a list of areas in Anchorage. Please tell me if you work in or near any of them.***

***Elmendorf Air Force Base***
***Downtown***
***Midtown***
***Ted Stevens Anchorage Airport***
***Dimond Center***
***University and Hospital area***

The nearest proposed MatSu station to about half (49%) of the profiled commuters is the Wasilla Station. Of these commuters to Anchorage, half work or go to school downtown (26%) or midtown (24%).

**TABLE A3.1: CLOSEST STATION LOCATION**

| | | |
|---|---|---|
| Closest proposed station: | | |
| Wasilla | 88 | 49.2% |
| Palmer Fairgrounds | 41 | 22.9% |
| Parks/Glenn Interchange | 46 | 25.7% |
| Unsure | 4 | 2.2% |
| Total | 179 | 100.0% |

**TABLE A3.2: AREA OF WORK OR SCHOOL**

| | | |
|---|---|---|
| Work or school is near: | | |
| Elmendorf | 32 | 17.9% |
| Downtown | 46 | 25.7% |
| Midtown | 42 | 23.5% |
| Ted Stevens Airport | 15 | 8.4% |
| Dimond Center | 11 | 6.1% |
| University/Hospital | 11 | 6.1% |
| None of the above | 22 | 12.3% |
| Total | 179 | 100.0% |

**Question**

***How many miles a day one way is your commute?***

***How much time in minutes does it take one-way in the summer?***

***How much time in the winter?***

Most people say they commute between 40 to 59 miles (average 49) which in the summer takes them 40 to 59 minutes (average 52) and in the winter 60 to 69 or more minutes (average 66).

**TABLE A4.1: COMMUTER MILES AND TIME, ONE WAY**

| | | |
|---|---|---|
| **Miles one way:** | | |
| 30 to 39 | 10 | 5.7% |
| 40 to 49 | 78 | 44.6% |
| 50 to 59 | 68 | 38.9% |
| 60 to 69 | 15 | 8.6% |
| 70 and up | 4 | 2.3% |
| **Total** | 175 | 100.0% |
| **Average** | 49 | |
| **Minutes one way in summer:** | | |
| 25 to 29 | 1 | .6% |
| 30 to 39 | 10 | 6.0% |
| 40 to 49 | 50 | 29.8% |
| 50 to 59 | 41 | 24.4% |
| 60 to 69 | 54 | 32.1% |
| 70 and up | 12 | 7.1% |
| **Total** | 168 | 100.0% |
| **Average** | 52 | |
| **Minutes one way in winter:** | | |
| 25 to 29 | 1 | .6% |
| 30 to 39 | 2 | 1.1% |
| 40 to 49 | 16 | 9.1% |
| 50 to 59 | 24 | 13.7% |
| 60 to 69 | 62 | 35.4% |
| 70 and up | 70 | 40.0% |
| **Total** | 175 | 100.0% |
| **Average** | 66 | |

An attempt was made to verify the average miles and minutes reported by respondents for their commutes.

To create the table below, we used information respondents provided regarding the nearest railroad stop and the nearest work location in Anchorage. We then produced a table of the approximate distances respondents travel as they commute, with Wasilla to South Anchorage assumed to be the longest distance and the Interchange to East Anchorage assumed to be the shortest.

The table was then arranged in descending distances, along with the average reported miles and times for each pair. The number of respondents for each pair is quite small, so the results are somewhat irregular, but generally the reported miles and minutes descend with the distances traveled.

**TABLE A4.2: AVERAGE MILES AND TIME TRAVELED FOR VARIOUS COMMUTES**

| | Miles one way: | Minutes one way summer: | Minutes one way winter: | Number of commuters |
|---|---|---|---|---|
| Distance traveled: | | | | |
| Wasilla to South (Airport, Dimond)..... | 51 | 59 | 77 | 10 |
| Wasilla to Midtown..... | 52 | 55 | 72 | 22 |
| Wasilla to Downtown..... | 47 | 50 | 62 | 22 |
| Wasilla to East (Elmendorf, University) | 51 | 57 | 71 | 24 |
| Palmer to South..... | 48 | 50 | 65 | 7 |
| Palmer to Midtown..... | 48 | 55 | 66 | 9 |
| Palmer to Downtown..... | 50 | 51 | 64 | 13 |
| Palmer to East..... | 46 | 47 | 63 | 7 |
| Interchange to South..... | 51 | 62 | 78 | 9 |
| Interchange to Midtown..... | 46 | 51 | 61 | 10 |
| Interchange to Downtown..... | 44 | 51 | 58 | 8 |
| Interchange to East..... | 46 | 48 | 61 | 12 |

Only profiled commuters who answered all five questions are included in this table.

## B. REQUIREMENTS AND OPPORTUNITIES FOR RAIL COMMUTING

**Question**

***Other than for lunch, do you stay in one building or at one location during your work day?***

***Do you use your own car when you need to go to another location?***

***About how often do you go to another location?***

Most (87%) of the 179 "Profiled Commuters" do not need their car as part of their job.

**TABLE B1: SUMMARY OF IN TOWN USE OF COMMUTERS' VEHICLES**

| | | |
|---|---|---|
| Commuter: | | |
| Does not need car for work..... | 156 | 87.2% |
| Needs car at least weekly..... | 20 | 11.2% |
| Needs car occasionally..... | 3 | 1.7% |
| Total..... | 179 | 100.0% |

**Question**

***How often do you work overtime, for at least an hour?***

***Do you know in advance when you will have to work overtime?***

Overtime requirements or after school needs could be a hindrance toward regular usage for 48% of the 179 profiled commuters.

**TABLE B2: OVERTIME**

| | | |
|---|---|---|
| **Works overtime/stays after school:** | | |
| Daily | 21 | 11.7% |
| Almost every day | 24 | 13.4% |
| Once or twice a week | 40 | 22.3% |
| Once every two weeks | 7 | 3.9% |
| Less often | 49 | 27.4% |
| Never | 36 | 20.1% |
| Unsure | 2 | 1.1% |
| **Total** | 179 | 100.0% |
| **Respondent:** | | |
| Knows about overtime in advance | 52 | 36.4% |
| Sometimes knows | 20 | 14.0% |
| Never knows | 71 | 49.7% |
| **Total** | 143 | 100.0% |
| **Summary: Commuter works overtime:** | | |
| Often enough to be a hindrance | 85 | 47.5% |
| Less often | 58 | 32.4% |
| Never | 36 | 20.1% |
| **Total** | 179 | 100.0% |

**Question**

***Do you drive alone?***

***Do you carpool with household members, others or both?***

***Do you use your own vehicle, someone else's vehicle or take turns?***

Seven in ten (71%) commuters drive to Anchorage alone. Forty-two percent (42%) of those who drive in with other people take turns driving.

**TABLE B3: RIDE SHARING**

| | | |
|---|---|---|
| Commuter: | | |
| Drives to town alone | 126 | 70.8% |
| Drives with household members only | 16 | 9.0% |
| Drives with others only | 32 | 18.0% |
| Drives with both | 4 | 2.2% |
| Total | 178 | 100.0% |
| Carpooler uses: | | |
| Respondent's car | 4 | 11.1% |
| Others' car | 12 | 33.3% |
| Take turns | 15 | 41.7% |
| Mostly respondent's | 1 | 2.8% |
| Mostly others' | 2 | 5.6% |
| No answer | 2 | 5.6% |
| Total | 36 | 100.0% |

**Question**

***Do you pay for parking in Anchorage?***

***How much a month?***

Only 5% of the drivers have to pay for parking in Anchorage.

**TABLE B4: PARKING FEES IN ANCHORAGE**

| | | |
|---|---|---|
| **Respondent:** | | |
| Pays for parking in Anchorage... | 9 | 5.0% |
| Does not... | 170 | 95.0% |
| **Total...** | **179** | **100.0%** |
| **Parking cost per month:** | | |
| $10... | 2 | 22.2% |
| $36... | 1 | 11.1% |
| $40... | 3 | 33.3% |
| $60... | 1 | 11.1% |
| Unsure... | 2 | 22.2% |
| **Total...** | **9** | **100.0%** |

**Question**

***Have you ever lived in a place where there was good public transportation at a reasonable cost?***

***Have you ever used public transportation on a regular basis?***

***For the most part, did you find it very satisfactory, somewhat satisfactory, somewhat unsatisfactory, or very unsatisfactory?***

One in three (31%) MatSu residents have in the past used public transportation on a regular basis and 57% of them found it to be very satisfactory.

**TABLE B5: PAST EXPERIENCE WITH PUBLIC TRANSPORTATION**

| | | |
|---|---|---|
| Commuter has: | | |
| Lived with good P.T. and used it | 44 | 24.6% |
| Not Lived with good P.T. but used P.T. | 12 | 6.7% |
| Lived with good P.T. and not used it | 36 | 20.1% |
| Neither, lived with nor used P.T. | 87 | 48.6% |
| Total | 179 | 100.0% |
| Public Transport was: | | |
| Very satisfactory | 32 | 57.1% |
| Somewhat satisfactory | 20 | 35.7% |
| Very unsatisfactory | 4 | 7.1% |
| Total | 56 | 100.0% |

**Question**

***How many passenger vehicles are there in your household?***

***How many licensed drivers?***

Most of the commuters (89%) have one or more vehicles for each licensed driver.

**TABLE B6: RATIOS OF VEHICLES TO LICENSED DRIVERS IN HOUSEHOLD**

| | | |
|---|---|---|
| Household has: | | |
| Fewer vehicles than drivers.. | 21 | 11.7% |
| A vehicle for each driver.... | 110 | 61.5% |
| More vehicles than drivers... | 48 | 26.8% |
| | | |
| Total..... | 179 | 100.0% |

**Question**

***Do you have children under 18 in your household?***

***Does having your vehicle in Anchorage ever make things difficult for other members of your household?***

***About how often does that happen?***

Forty-nine percent (49%) of commuter households have children under 18. Eleven percent of commuters who take vehicles to Anchorage report it makes things difficult for those at home.

**TABLE B7.1: CHILDREN IN HOUSEHOLD OF COMMUTERS**

| | | |
|---|---|---|
| Household has: | | |
| Children under 18 | 87 | 48.6% |
| Does not | 92 | 51.4% |
| Total | 179 | 100.0% |

**TABLE B7.2: PROBLEM CREATED FOR THE HOUSEHOLD BY HAVING A VEHICLE IN ANCHORAGE**

| | | |
|---|---|---|
| Problems for the household occur: | | |
| Daily | 5 | 2.8% |
| Once or twice a week | 8 | 4.5% |
| Once every two weeks | 1 | .6% |
| Less often | 6 | 3.4% |
| Unsure | 3 | 1.7% |
| Never | 156 | 87.2% |
| Total | 179 | 100.0% |

**TABLE B7.3: PRESENCE OF CHILDREN IN THE HOUSEHOLD AND INCONVENIENCE CAUSED BY DRIVING TO TOWN**

| | Household has: | | TOTAL |
|---|---|---|---|
| | Children under 18 | Does not | |
| Having vehicle in Anchorage: | | | |
| Causes problems for household | 16.1% | 6.5% | 11.2% |
| Does not | 83.9% | 90.2% | 87.2% |
| Unsure | | 3.3% | 1.7% |
| Number | 87 | 92 | 179 |

Column percentages

## C. LIKELIHOOD OF USING A COMMUTER RAIL SERVICE

**Question** [5]

***If there were a one- hour train ride, priced reasonably, that left between 6 and 7 in the morning and returned from Anchorage between 5 and 6 in the evening and connected conveniently with buses on the Anchorage end, how often would you use it - Every time you go in, most times, sometimes, rarely, or never? (ASKED OF ALL RESPONDENTS)***

Seventeen percent (17%) of all MatSu residents interviewed would take the train every time or most times.

**TABLE C1.1: WOULD THEY TAKE THE TRAIN?**

| | | |
|---|---|---|
| **Respondent would take the train:** | | |
| **Every or most times** | | |
| **Every time** | 86 | 6.2% |
| **Most times** | 155 | 11.1% |
| **Subtotal, Every or most times** | 241 | 17.3% |
| **Some times** | 217 | 15.6% |
| **Less or never** | | |
| **Rarely** | 226 | 16.2% |
| **Never** | 366 | 26.2% |
| **Depends** | 22 | 1.6% |
| **Unsure** | 18 | 1.3% |
| **Does not go to town** | 305 | 21.9% |
| **Subtotal, Less often, never** | 937 | 67.2% |
| **Total** | 1395 | 100.0% |

Column percentages
Some respondents did not answer this question have been omitted from the calculations

[5] One hundred and four people who travel to Anchorage less than once a week were omitted from this question.

A third (33%) of the commuters who drive to Anchorage five or more days a week, and a third (34%) of the profiled commuters say they would use a commuter train every time or most of the times they come to Anchorage.

Thirty-two percent (32%) of the commuters, who do not fit the profile exactly, also report that they would use the rail service. (Note: The question does not indicate it would run only weekdays.)

**TABLE C1.2: LIKELIHOOD OF COMMUTING BY SUMMARY OF HOUSEHOLD TRAVEL TO ANCHORAGE**

| | Valley population: | | | | TOTAL |
|---|---|---|---|---|---|
| | Commutes five days to Anchorage | Commutes one to four days | Goes in one to four days | Commutes or goes in less often | |
| Would take the train: | | | | | |
| Every, most times.... | 33.3% | 30.0% | 12.9% | 17.3% | 22.1% |
| Some times..... | 15.8% | 15.6% | 23.1% | 21.9% | 19.9% |
| Less or never..... | 50.8% | 54.4% | 63.9% | 60.8% | 58.0% |
| Number..... | 297 | 90 | 147 | 556 | 1090 |

Column percentages

**TABLE C1.3: LIKELIHOOD OF COMMUTING BY SUMMARY OF COMMUTER TRAVEL**

| | Commuter: | | | TOTAL |
|---|---|---|---|---|
| | Commutes in the pattern | Commutes out of the pattern | Travels irregul-arly | |
| Would take the train: | | | | |
| Every, most times.... | 34.1% | 32.2% | 17.9% | 22.1% |
| Some times..... | 15.6% | 16.1% | 21.4% | 19.9% |
| Less or never..... | 50.3% | 51.7% | 60.7% | 58.0% |
| Number..... | 179 | 118 | 793 | 1090 |

Column percentages

Where commuters work or go to school offers no statistically significant differences in their likelihood of using the train regularly.[6]

**TABLE C1.4: LIKELIHOOD OF COMMUTING BY AREA WHERE RESPONDENTS WORK OR GO TO SCHOOL**

| | Work or school is near: | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | Elmendorf | Downtown | Midtown | Ted Stevens Airport | Dimond Center | University/Hospital | None of the above | |
| Would take the train: * | | | | | | | | |
| Every, most times | 28.1% | 41.3% | 28.6% | 46.7% | 18.2% | 72.7% | 18.2% | 34.1% |
| Some times..... | 15.6% | 15.2% | 14.3% | 13.3% | 27.3% | 9.1% | 18.2% | 15.6% |
| Less or never.... | 56.3% | 43.5% | 57.1% | 40.0% | 54.5% | 18.2% | 63.6% | 50.3% |
| Number..... | 32 | 46 | 42 | 15 | 11 | 11 | 22 | 179 |

Column percentages
* Indicates the differences are not statistically significant.

**TABLE C1.5: LIKELIHOOD OF COMMUTING BY CLOSEST STATION LOCATION**

| | Closest proposed station: | | | | TOTAL |
|---|---|---|---|---|---|
| | Wasilla | Palmer Fair grounds | Parks/ Glann | Unsure | |
| Would take the train:* | | | | | |
| Every, most times.... | 36.4% | 41.5% | 26.1% | 34.1% | |
| Some times..... | 12.5% | 14.6% | 19.6% | 50.0% | 15.6% |
| Less or never..... | 51.1% | 43.9% | 54.3% | 50.0% | 50.3% |
| Number..... | 88 | 41 | 46 | 4 | 179 |

Column percentages
* Indicates the differences are not statistically significant.

[6] Although the percentages fluctuate, the number of respondents are very small, which affects statistical significance.

People who drive 70 minutes or more in the winter are significantly more likely to consider commuting by train, than are those who commute shorter times in the winter.

**TABLE C1.6: LIKELIHOOD OF COMMUTING BY MILES AND HOURS OF A ONE-WAY COMMUTE**

| | Miles or hours one-way: | | | | TOTAL |
|---|---|---|---|---|---|
| | 25 to 49 | 50 to 59 | 60 to 69 | 70 and up | |
| MILES | | | | | |
| Would take the train:* | | | | | |
| Every, most times.... | 31.8% | 38.2% | 33.3% | 25.0% | 34.3% |
| Some times..... | 14.8% | 17.6% | 6.7% | 25.0% | 15.4% |
| Less or never..... | 53.4% | 44.1% | 60.0% | 50.0% | 50.3% |
| Number..... | 88 | 68 | 15 | 4 | 175 |
| MINUTES IN SUMMER | | | | | |
| Would take the train:* | | | | | |
| Every, most times.... | 24.6% | 31.7% | 44.4% | 25.0% | 32.7% |
| Some times..... | 18.0% | 17.1% | 7.4% | 25.0% | 14.9% |
| Less or never..... | 57.4% | 51.2% | 48.1% | 50.0% | 52.4% |
| Number..... | 61 | 41 | 54 | 12 | 168 |
| MINUTES IN WINTER | | | | | |
| Would take the train: | | | | | |
| Every, most times.... | 15.8% | 33.3% | 29.0% | 44.3% | 34.3% |
| Some times..... | 5.3% | 4.2% | 22.6% | 14.3% | 14.9% |
| Less or never..... | 78.9% | 62.5% | 48.4% | 41.4% | 50.9% |
| Number..... | 19 | 24 | 62 | 70 | 175 |

Column percentages
* Indicates the differences are not statistically significant.

Profiled commuters who do not need their vehicle in town and those who never work overtime are more likely to consider the rail commuting service.

People who Rideshare appear to be more likely to take the train but the differences are not statistically significant.

**TABLE C1.7: LIKELIHOOD OF COMMUTING BY IN-TOWN USE OF CONSUMERS' VEHICLES**

| | Commuter: | | | TOTAL |
|---|---|---|---|---|
| | Does not need car for work | Needs car at least weekly | Needs car occasionally | |
| Would take the train: | | | | |
| Every, most times.... | 37.8% | 10.0% | | 34.1% |
| Some times..... | 15.4% | 15.0% | 33.3% | 15.6% |
| Less or never..... | 46.8% | 75.0% | 66.7% | 50.3% |
| Number..... | 156 | 20 | 3 | 179 |

Column percentages

**TABLE C1.8: LIKELIHOOD OF COMMUTING BY OVERTIME**

| | Summary: Commuter works overtime: | | | TOTAL |
|---|---|---|---|---|
| | Often enough to be a hindrance | Less often | Never | |
| Would take the train: | | | | |
| Every, most times.... | 27.1% | 32.8% | 52.8% | 34.1% |
| Some times..... | 20.0% | 13.8% | 8.3% | 15.6% |
| Less or never..... | 52.9% | 53.4% | 38.9% | 50.3% |
| Number..... | 85 | 58 | 36 | 179 |

Column percentages

**TABLE C1.9: LIKELIHOOD OF COMMUTING BY RIDESHARING**

| | Commuter: | | | | TOTAL |
|---|---|---|---|---|---|
| | Drives to town alone | Drives with household members only | Drives with others only | Drives with both | |
| Would take the train:* | | | | | |
| Every, most times.... | 31.7% | 43.8% | 37.5% | 25.0% | 33.7% |
| Some times..... | 18.3% | 6.3% | 9.4% | 25.0% | 15.7% |
| Less or never..... | 50.0% | 50.0% | 53.1% | 50.0% | 50.6% |
| Number..... | 126 | 16 | 32 | 4 | 178 |

Column percentages

People who have lived where there was good, reasonable public transportation are significantly more likely to consider using a commuter rail service than are those who have not.

**TABLE C1.10: LIKELIHOOD OF COMMUTING BY FAMILIARITY WITH PUBLIC TRANSPORTATION**

| | Has lived where there is: | | | TOTAL |
|---|---|---|---|---|
| | Good, reasonable public transport | Has not | No answer | |
| Would take the train: | | | | |
| Every, most times.... | 41.3% | 27.4% | 50.0% | 34.1% |
| Some times..... | 20.0% | 10.5% | 50.0% | 15.6% |
| Less or never..... | 38.8% | 62.1% | | 50.3% |
| Number..... | 80 | 95 | 4 | 179 |

Column percentages

**TABLE C1.11: LIKELIHOOD OF COMMUTING BY PAST REGULAR USE OF PUBLIC TRANSPORTATION**

| | Has used public transport: | | TOTAL |
|---|---|---|---|
| | On a regular basis | Has not | |
| Would take the train:* | | | |
| Every, most times.... | 41.1% | 30.9% | 34.1% |
| Some times..... | 19.6% | 13.8% | 15.6% |
| Less or never..... | 39.3% | 55.3% | 50.3% |
| Number..... | 56 | 123 | 179 |

Column percentages
* Indicates the differences are not statistically significant.

A shortage of vehicles in the household does encourage commuter rail service usage.

**TABLE C1.12: LIKELIHOOD OF COMMUTING BY ADEQUACY OF VEHICLES IN HOUSEHOLD**

| | Household has: | | | TOTAL |
|---|---|---|---|---|
| | Fewer vehicles than drivers | A vehicle for each driver | More vehicles than drivers | |
| Would take the train:* | | | | |
| Every, most times.... | 42.9% | 32.7% | 33.3% | 34.1% |
| Some times..... | 14.3% | 14.5% | 18.8% | 15.6% |
| Less or never..... | 42.9% | 52.7% | 47.9% | 50.3% |
| Number..... | 21 | 110 | 48 | 179 |

Column percentages
* Indicates the differences are not statistically significant.

**TABLE C1.13: LIKELIHOOD OF COMMUTING BY INCONVENIENCE OF DRIVING**

| | Having vehicle in Anchorage: | | TOTAL |
|---|---|---|---|
| | Causes problems for household | Does not | |
| Would take the train:* | | | |
| Every, most times.... | 50.0% | 32.1% | 34.1% |
| Some times..... | 10.0% | 16.0% | 15.3% |
| Less or never..... | 40.0% | 51.9% | 50.6% |
| Number..... | 20 | 156 | 176 |

Column percentages
* Indicates the differences are not statistically significant.

## D. DEMOGRAPHICS

The average age of the respondent is 47.8 years old. The average length of residency in the MatSu Valley is 18 years and the median household income $51,550. Eighty-nine percent (89%) are homeowners.

**TABLE D1.1: DEMOGRAPHIC MAKE-UP OF SAMPLE**

| | | |
|---|---|---|
| Gender: | | |
| Male | 720 | 48.0% |
| Female | 780 | 52.0% |
| Total | 1500 | 100.0% |
| Age: | | |
| 18 to 29 | 140 | 9.5% |
| 30 to 39 | 238 | 16.1% |
| 40 to 49 | 484 | 32.8% |
| 50 to 59 | 339 | 23.0% |
| 60 and older | 274 | 18.6% |
| Total | 1475 | 100.0% |
| Residence in MatSu | | |
| Under 5 years | 106 | 7.1% |
| 5 to 9 years | 225 | 15.1% |
| 10 to 19 years | 564 | 37.7% |
| 20 to 29 years | 373 | 24.9% |
| 30 and up | 227 | 15.2% |
| Total | 1495 | 100.0% |
| Education: | | |
| Less than High School | 121 | 8.1% |
| High School graduate/ GED | 336 | 22.6% |
| Some college or technical | 576 | 38.7% |
| Four year degree | 315 | 21.1% |
| Post graduate | 142 | 9.5% |
| Total | 1490 | 100.0% |
| Income: | | |
| Less than $25,000 | 191 | 14.8% |
| $25,000 to $40,000 | 259 | 20.1% |
| $41,000 to $55,000 | 253 | 19.6% |
| $56,000 to $70,000 | 243 | 18.8% |
| $71,000 to $99,000 | 202 | 15.6% |
| $100,000 or more | 143 | 11.1% |
| Total | 1291 | 100.0% |
| Respondent: | | |
| Own | 1311 | 88.8% |
| Rent | 165 | 11.2% |
| Total | 1476 | 100.0% |

Column percentages

More men than women are commuting but there is no difference in their likelihood of using the proposed commuter rail service.

**TABLE D1.2: TRAVEL SUMMARY, COMMUTER SUMMARY AND LIKELIHOOD OF COMMUTING BY GENDER**

| | Gender: | | TOTAL |
|---|---|---|---|
| | Male | Female | |
| Valley population: | | | |
| Commutes five days to Anchorage | 26.7% | 13.7% | 19.9% |
| Commutes one to four days..... | 6.5% | 5.5% | 6.0% |
| Goes in one to four days..... | 9.4% | 10.1% | 9.8% |
| Commutes or goes in less often. | 37.6% | 49.7% | 43.9% |
| No one in household ever goes.. | 19.7% | 20.9% | 20.3% |
| Number..... | 720 | 780 | 1500 |
| Commuter: | | | |
| Commutes in the pattern..... | 15.7% | 8.5% | 11.9% |
| Commutes out of the pattern.... | 11.0% | 5.3% | 8.0% |
| Travels irregularly..... | 53.6% | 65.4% | 59.7% |
| Does not travel to town..... | 19.7% | 20.9% | 20.3% |
| Number..... | 720 | 780 | 1500 |
| Would take the train: * | | | |
| Every, most times..... | 22.6% | 21.7% | 22.1% |
| Some times..... | 17.9% | 21.7% | 19.9% |
| Less or never..... | 59.5% | 56.5% | 57.9% |
| Number..... | 514 | 575 | 1089 |

Column percentages

* Indicates the differences are not statistically significant.

Older people, sixty and up, are less likely to come to Anchorage and are less likely to take the train if they do come to Anchorage.

**TABLE D1.3: TRAVEL SUMMARY, COMMUTER SUMMARY AND LIKELIHOOD OF COMMUTING BY AGE**

| | Age: | | | | TOTAL |
|---|---|---|---|---|---|
| | 18 to 29 | 30 to 39 | 40 to 59 | 60 and older | |
| Valley population: | | | | | |
| Commutes five days to Anchorage | 24.3% | 22.7% | 23.0% | 6.6% | 20.0% |
| Commutes one to four days..... | 8.6% | 8.0% | 6.1% | 3.3% | 6.1% |
| Goes in one to four days..... | 10.0% | 8.8% | 10.0% | 10.9% | 10.0% |
| Commutes or goes in less often. | 32.1% | 31.9% | 34.8% | 50.0% | 36.9% |
| No one in household ever goes.. | 25.0% | 28.6% | 26.2% | 29.2% | 27.1% |
| Number..... | 140 | 238 | 823 | 274 | 1475 |
| Commuter: | | | | | |
| Commutes in the pattern..... | 11.4% | 13.9% | 14.2% | 3.6% | 11.9% |
| Commutes out of the pattern.... | 12.9% | 8.8% | 8.7% | 2.9% | 8.1% |
| Travels irregularly..... | 60.0% | 57.6% | 57.6% | 67.9% | 59.7% |
| Does not travel to town..... | 15.7% | 19.7% | 19.4% | 25.5% | 20.3% |
| Number..... | 140 | 238 | 823 | 274 | 1475 |
| Would take the train: * | | | | | |
| Every, most times..... | 23.8% | 24.7% | 22.7% | 16.5% | 22.0% |
| Some times..... | 25.7% | 18.8% | 19.2% | 21.1% | 20.1% |
| Less or never..... | 50.5% | 56.5% | 58.1% | 62.4% | 57.9% |
| Number..... | 105 | 170 | 604 | 194 | 1073 |

Column percentages
* Indicates the differences are not statistically significant.

The longer the residence in the MatSu area, the less likely someone is to come to Anchorage, except irregularly, and the less likely to take a commuter train.

**TABLE D1.4: TRAVEL SUMMARY, COMMUTER SUMMARY AND LIKELIHOOD OF COMMUTING BY RESIDENCE IN THE MATSU**

| | Residence in MatSu: | | | | TOTAL |
|---|---|---|---|---|---|
| | Under 5 years | 5 to 9 years | 10 to 29 years | 30 and up | |
| Valley population: | | | | | |
| Commutes five days to Anchorage | 38.7% | 21.3% | 20.0% | 10.1% | 20.0% |
| Commutes one to four days..... | 10.4% | 8.4% | 5.5% | 3.5% | 6.0% |
| Goes in one to four days..... | 7.5% | 8.4% | 10.5% | 9.7% | 9.8% |
| Commutes or goes in less often. | 20.8% | 36.4% | 38.2% | 40.5% | 37.1% |
| No one in household ever goes.. | 22.6% | 25.3% | 25.8% | 36.1% | 27.1% |
| Number..... | 106 | 225 | 937 | 227 | 1495 |
| Commuter: | | | | | |
| Commutes in the pattern..... | 18.9% | 13.3% | 12.5% | 4.8% | 11.9% |
| Commutes out of the pattern.... | 19.8% | 8.0% | 7.5% | 5.3% | 8.1% |
| Travels irregularly..... | 43.4% | 60.0% | 61.5% | 60.4% | 59.8% |
| Does not travel to town..... | 17.9% | 18.7% | 18.6% | 29.5% | 20.2% |
| Number..... | 106 | 225 | 937 | 227 | 1495 |
| Would take the train: | | | | | |
| Every, most times..... | 36.6% | 23.8% | 21.7% | 14.5% | 22.2% |
| Some times..... | 18.3% | 29.2% | 19.4% | 13.1% | 20.0% |
| Less or never..... | 45.1% | 47.0% | 59.0% | 72.4% | 57.9% |
| Number..... | 82 | 168 | 692 | 145 | 1087 |

Column percentages

People with lower educational attainment are less likely to be employed in Anchorage.

**TABLE D1.5: TRAVEL SUMMARY, COMMUTER SUMMARY AND LIKELIHOOD OF COMMUTING BY EDUCATION**

| | Education: | | | | TOTAL |
|---|---|---|---|---|---|
| | High School/ GED or less | Some college or technical | Four year degree | Post graduate | |
| Valley population: | | | | | |
| Commutes five days to Anchorage | 14.7% | 23.3% | 22.2% | 20.4% | 20.1% |
| Commutes one to four days..... | 5.5% | 5.6% | 7.9% | 5.6% | 6.0% |
| Goes in one to four days..... | 8.8% | 10.1% | 8.9% | 14.8% | 9.9% |
| Commutes or goes in less often. | 37.6% | 35.9% | 35.2% | 42.3% | 36.9% |
| No one in household ever goes.. | 33.5% | 25.2% | 25.7% | 16.9% | 27.0% |
| Number..... | 457 | 576 | 315 | 142 | 1490 |
| Commuter: | | | | | |
| Commutes in the pattern..... | 8.1% | 13.2% | 14.3% | 14.8% | 12.0% |
| Commutes out of the pattern.... | 6.6% | 10.1% | 7.9% | 5.6% | 8.1% |
| Travels irregularly..... | 58.4% | 60.1% | 57.8% | 66.9% | 59.7% |
| Does not travel to town..... | 26.9% | 16.7% | 20.0% | 12.7% | 20.1% |
| Number..... | 457 | 576 | 315 | 142 | 1490 |
| Would take the train: * | | | | | |
| Every, most times..... | 20.1% | 21.0% | 26.6% | 23.7% | 22.2% |
| Some times..... | 18.8% | 21.0% | 20.6% | 17.8% | 19.9% |
| Less or never..... | 61.2% | 58.0% | 52.8% | 58.5% | 57.8% |
| Number..... | 304 | 429 | 233 | 118 | 1084 |

Column percentages

* Indicates the differences are not statistically significant.

People from households with higher incomes are more likely to work in Anchorage, but not more likely to take the proposed commuter rail service.

**TABLE D1.6: TRAVEL SUMMARY, COMMUTER SUMMARY AND LIKELIHOOD OF COMMUTING BY INCOME**

| | Income: | | | | | TOTAL |
|---|---|---|---|---|---|---|
| | Less than $25,000 | $25,000 to $40,000 | $41,000 to $70,000 | $71,000 to $99,000 | $100,000 or more | |
| Valley population: | | | | | | |
| Commutes five days to Anchorage | 5.8% | 10.8% | 25.6% | 32.2% | 30.8% | 21.3% |
| Commutes one to four days..... | 2.6% | 4.6% | 7.1% | 5.9% | 7.7% | 5.8% |
| Goes in one to four days..... | 6.8% | 10.4% | 9.9% | 11.4% | 10.5% | 9.8% |
| Commutes or goes in less often. | 39.8% | 45.2% | 36.9% | 26.7% | 25.9% | 36.2% |
| No one in household ever goes.. | 45.0% | 29.0% | 20.6% | 23.8% | 25.2% | 26.9% |
| Number..... | 191 | 259 | 496 | 202 | 143 | 1291 |
| Commuter: | | | | | | |
| Commutes in the pattern..... | 3.1% | 5.4% | 15.3% | 20.8% | 19.6% | 12.9% |
| Commutes out of the pattern.... | 2.6% | 5.4% | 10.3% | 11.4% | 11.2% | 8.4% |
| Travels irregularly..... | 57.1% | 69.1% | 57.9% | 50.0% | 55.9% | 58.6% |
| Does not travel to town..... | 37.2% | 20.1% | 16.5% | 17.8% | 13.3% | 20.1% |
| Number..... | 191 | 259 | 496 | 202 | 143 | 1291 |
| Would take the train: * | | | | | | |
| Every, most times..... | 25.7% | 19.6% | 21.3% | 30.7% | 21.5% | 23.0% |
| Some times..... | 21.0% | 22.3% | 22.6% | 12.4% | 15.0% | 19.8% |
| Less or never..... | 53.3% | 58.2% | 56.1% | 56.9% | 63.6% | 57.2% |
| Number..... | 105 | 184 | 394 | 153 | 107 | 943 |

Column percentages

* Indicates the differences are not statistically significant.

Renters are more likely than non-renters to take a commuter rail service.

**TABLE D1.7: TRAVEL SUMMARY, COMMUTER SUMMARY AND LIKELIHOOD OF COMMUTING BY HOME OWNERSHIP**

| | Respondent: | | TOTAL |
|---|---|---|---|
| | Own | Rent | |
| Valley population: | | | |
| Commutes five days to Anchorage | 20.5% | 15.8% | 20.0% |
| Commutes one to four days..... | 6.3% | 4.2% | 6.0% |
| Goes in one to four days..... | 10.1% | 8.5% | 9.9% |
| Commutes or goes in less often. | 37.6% | 33.9% | 37.2% |
| No one in household ever goes.. | 25.6% | 37.6% | 26.9% |
| Number..... | 1311 | 165 | 1476 |
| Commuter: | | | |
| Commutes in the pattern..... | 12.3% | 9.7% | 12.0% |
| Commutes out of the pattern.... | 8.2% | 6.1% | 8.0% |
| Travels irregularly..... | 60.6% | 54.5% | 59.9% |
| Does not travel to town..... | 18.9% | 29.7% | 20.1% |
| Number..... | 1311 | 165 | 1476 |
| Would take the train: * | | | |
| Every, most times..... | 21.5% | 30.1% | 22.3% |
| Some times..... | 19.6% | 23.3% | 20.0% |
| Less or never..... | 58.9% | 46.6% | 57.7% |
| Number..... | 973 | 103 | 1076 |

Column percentages

* Indicates the differences are not statistically significant.

# IV. APPENDIX

## A. VOICE CAPTURE ANALYSIS

**Question**

***Why not? (Reason for or not wanting to take the train "every time," "most of the time," or "some of the time.")***

Over half of respondents who claimed that they would "rarely" or "never" take the train cited time factors (53%) as the primary reason. Specifically, they indicated that their schedules would not be compatible with the proposed train schedule (41%). Another perceived barrier was desire for mobility (34%), either in general (16%) or specifically for their job (13%).

| | | |
|---|---|---|
| **Time factors** | **108** | **53%** |
| Job schedule is different from train schedule/ job schedule is unpredictable | 84 | 41% |
| Takes too long to get to destination | 19 | 10% |
| Carpooling is quicker | 3 | 1% |
| Time factors-other | 2 | 1% |
| **Desire for mobility** | **67** | **33%** |
| Need car in town/at lunch/or on the way home | 32 | 16% |
| Use a car for my job | 25 | 13% |
| Don't want to use the bus | 7 | 3% |
| Desire for mobility-other | 3 | 1% |
| **General reluctance to try new transportation** | **37** | **18%** |
| Skeptical about how it would work | 21 | 10% |
| Enjoy driving | 11 | 5% |
| General reluctance to try new transportation-other | 5 | 3% |
| **Cost factors** | **12** | **6%** |
| Perceived cost too high | 5 | 2% |
| Costs more than current car/van pool | 7 | 4% |
| **Other** | **20** | **10%** |
| General inconvenience | 4 | 2% |
| Public transportation not available where I work | 3 | 1% |
| Don't go to Anchorage often enough | 4 | 2% |
| Other | 9 | 5% |

Total # of respondents was two hundred and three MatSu residents (n=203)
Percentages add up to more than 100% because some respondents gave more than one answer.

## B. SURVEY INSTRUMENT

1. Hello, my name is _____, and I'm with Craciun Research Group, an Alaskan company. We would like to take a few minutes of your time to ask your opinions about important transportation issues. Your responses will be kept strictly confidential and I will be happy to answer any questions you might have at the end of the survey. (LOCATE PERSON AND MAKE APPOINTMENT AS NECESSARY) (IF RESPONDENT ASKS - THIS SURVEY SHOULD TAKE ABOUT 10 MINUTES)

(5)
- ❑ 1 Male
- ❑ 2 Female

2. Can we use our computers to digitally record your answers to certain questions?

(6)
- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

3. First of all, does anyone in your household commute to Anchorage on a regular basis, either to work or school? (ASK TO SPEAK WITH THAT PERSON, IF NOT HOME, MAKE APPOINTMENT) (IF NO ONE COMMUTES, ASK TO SPEAK WITH SOMEONE THAT GOES TO ANCHORAGE OCCASSIONALY DURING THE DAY ON A WEEKDAY. IF NO ONE GOES TO ANCHORAGE ENTER "NO ONE")

(7)
- ❑ 1 Yes, WORK (ASK FOR THEM)
- ❑ 2 Yes, SCHOOL (ASK FOR THEM)
- ❑ 3 No, goes occasionally
- ❑ 4 No one goes to Anchorage
- ❑ 5 Don't Know/No Answer

[IF THE ANSWER IS 4-5, THEN SKIP TO QUESTION 38]

4. How often do you go to Anchorage? (READ LIST)

(8)
- ❑ 1 5 to more days a week
- ❑ 2 1 to 4 days a week
- ❑ 3 Every couple of weeks
- ❑ 4 Once or twice a month
- ❑ 5 Less often

[IF THE ANSWER IS NOT 1, THEN SKIP TO QUESTION 35]

5. Let's begin with some general questions about your commute. Do you have regular hours and have regular days off?

(9)
- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

[IF THE ANSWER IS 1, THEN SKIP TO QUESTION 7]

6. Do any of your shifts start between 7:30 and 8:30 in the morning on weekdays?

(10)
❑ 1 Yes
❑ 2 No
❑ 3 Don't Know/No Answer

[IF THE ANSWER IS 1-5, THEN SKIP TO QUESTION 35]

7. What time do you start?

(11)
❑ 1 7:00 AM to 7:29 AM
❑ 2 7:30 AM to 7:59 AM
❑ 3 8:00 AM to 8:29 AM
❑ 4 8:30 AM to 8:59 AM
❑ 5 9:00 AM to 9:30 AM
❑ 6 Any other time

8. What time do you get off?

(12)
❑ 1 3:30 PM to 3:59 PM
❑ 2 4:00 PM to 4:29 PM
❑ 3 4:30 PM to 4:59 PM
❑ 4 5:00 PM to 5:29 PM
❑ 5 5:30 PM to 6:00 PM
❑ 6 Any other time

9. What are your days off?

(13)
❑ 1 Sat & Sun
❑ 2 Other

[IF THE ANSWER TO QUESTION 7 IS 6, THEN SKIP TO QUESTION 35]
[IF THE ANSWER TO QUESTION 8 IS 6, THEN SKIP TO QUESTION 35]
[IF THE ANSWER TO QUESTION 9 IS 2, THEN SKIP TO QUESTION 35]

10. Other than for lunch, do you stay in one building or at one location during your day in town?

(14)
❑ 1 Yes
❑ 2 No
❑ 3 Don't Know/No Answer

[IF THE ANSWER TO QUESTION 10 IS 1, THEN SKIP TO QUESTION 13]

11. Do you use your own car when you need to go to another location?

(15)
❑ 1 Yes
❑ 2 No
❑ 3 Don't Know/No Answer

12. About how often do you go to another location?

(16)

- ❑ 1 Daily
- ❑ 2 Almost every day
- ❑ 3 Once or twice a week
- ❑ 4 Once every two weeks
- ❑ 5 Less often
- ❑ 6 Don't Know/No Answer

13. How often do you work overtime or stay after school for at least an hour?

(17)

- ❑ 1 Daily
- ❑ 2 Almost every day
- ❑ 3 Once or twice a week
- ❑ 4 Once every two weeks
- ❑ 5 Less often
- ❑ 6 Never
- ❑ 7 Don't Know/No Answer

[IF THE ANSWER IS 6, THEN SKIP TO QUESTION 15]

14. Do you know in advance when you will have to stay late?

(18)

- ❑ 1 Yes
- ❑ 2 Sometimes
- ❑ 3 No
- ❑ 4 Don't Know/No Answer

15. I will read a list of areas in Anchorage. Please tell me if you work or go to school in or near any of them.

(19)

- ❑ 1 Elmendorf Air Force Base
- ❑ 2 Downtown
- ❑ 3 Midtown
- ❑ 4 Ted Stevens Anchorage Airport
- ❑ 5 Dimond Center
- ❑ 6 University and hospital area
- ❑ 7 None of the above

[IF THE ANSWER TO QUESTION 15 IS NOT 7, THEN SKIP TO QUESTION 17]
[IF THE ANSWER TO QUESTION 2 IS NOT 1, THEN SKIP TO QUESTION 17]

[The next two questions are necessary for CATI programming.]

16. Where DO you work or go to school?

_____

_ (5)

[IF THE ANSWER TO QUESTION 15 IS NOT 7, THEN SKIP TO QUESTION 9999]
[IF THE ANSWER TO QUESTION 2 IS 1, THEN SKIP TO QUESTION 9999]

17. Where DO you work or go to school?

(7-56) _____

18. Do you drive alone?

(20)
- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

[IF THE ANSWER IS 1 OR 3, THEN SKIP TO QUESTION 21]

19. Do you carpool with household members, others or both?

(21)
- ❑ 1 Household only
- ❑ 2 Others only
- ❑ 3 Both
- ❑ 4 Don't Know/No Answer

[IF THE ANSWER IS 1 OR 4, THEN SKIP TO QUESTION 21]

20. Do you use your own vehicle, someone else's vehicle or take turns?

(22)
- ❑ 1 Own
- ❑ 2 Other's
- ❑ 3 Take turns
- ❑ 4 Mostly own
- ❑ 5 Mostly other's
- ❑ 6 Unsure

21. How many miles a day one way is your commute? (IF DON"T KNOW OR NO ANSWER ENTER "999")

Enter miles one way .._____ (23-25)

22. How much time in minutes does it take one way in the summer? (INTERVIEWER CONVERT TO MINUTES, IF NO ANSWER ENTER "999")

Enter minutes it takes one way .. _____ (26-28)

23. How much time in the winter? (INTERVIEWER CONVERT TO MINUTES, IF NO ANSWER ENTER "999")

Enter minutes it takes one way .. _____ (29-31)

24. Do you pay for parking in Anchorage?

(32)
- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

[IF THE ANSWER IS NOT 1, THEN SKIP TO QUESTION 26]

25. How much a month? (INTERVIEWER CONVERT TO MONTHLY CHARGE, IF DON'T KNOW, THEN ENTER "999")

Enter monthly dollars spent .._____ (33-35)

26. Have you ever lived in a place where there was good public transportation at a reasonable cost?

(36)
- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

27. Have you ever used public transportation on a regular basis?

(37)
- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

[IF THE ANSWER IS NOT 1, THEN SKIP TO QUESTION 29]

28. For the most part, did you find it very satisfactory, somewhat satisfactory, somewhat unsatisfactory, or very unsatisfactory?

(38)
- ❑ 1 Very satisfactory
- ❑ 2 Somewhat satisfactory
- ❑ 3 Somewhat unsatisfactory
- ❑ 4 Very unsatisfactory
- ❑ 5 Don't Know/No Answer

29. How many passenger vehicles are there in your household?

(39)
- ❑ 1 One
- ❑ 2 Two
- ❑ 3 Three
- ❑ 4 Four
- ❑ 5 Five or more
- ❑ 6 None
- ❑ 7 Don't Know/No Answer

30. How many licensed drivers?

(40)

- ❑ 1 One
- ❑ 2 Two
- ❑ 3 Three
- ❑ 4 Four
- ❑ 5 Five or more
- ❑ 6 None
- ❑ 7 Don't Know/No Answer

31. Do you have children under 18 in your household?

(41)

- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

32. Does having your vehicle in Anchorage ever make things difficult for other members of your household?

(42)

- ❑ 1 Yes
- ❑ 2 No
- ❑ 3 Don't Know/No Answer

[IF THE ANSWER IS NOT 1, THEN SKIP TO QUESTION 34]

33. About how often does that happen?

(43)

- ❑ 1 Daily
- ❑ 2 Almost every day
- ❑ 3 Once or twice a week
- ❑ 4 Once every two weeks
- ❑ 5 Less often
- ❑ 6 Don't Know/No Answer

34. Which of the following is closest to where you live --

1) In Wasilla, (South Church Road at the railroad tracks)
2) The Palmer Fairgrounds
3) Parks/Glen Interchange

(44)

- ❑ 1 In Wasilla
- ❑ 2 Palmer Fairgrounds
- ❑ 3 Parks/Glen Interchange
- ❑ 4 Don't Know/No Answer

35. If there were a one hour train ride, priced reasonably, that left between 6 and 7 in the morning and returned from Anchorage between 5 and 6 in the evening and connected conveniently with buses on the Anchorage end, how often would you use it - Every time you go in, most times, sometimes, rarely, or never? (IF ASKED, OFFER REASONABLY PRICED IS "ABOUT $4-5 ONE WAY.)(IF DEPENDS ON TIME, RESPOND THAT THERE MIGHT BE 2 TRAINS, ONE AT 6 AND ONE AT 6:45, RETURNING AT 5 AND 5:45)

(45)

- ❑ 1 Every time
- ❑ 2 Most times
- ❑ 3 Some times
- ❑ 4 Rarely
- ❑ 5 Never
- ❑ 6 Depends on time (SEE ABOVE)
- ❑ 7 Unsure

[IF THE ANSWER TO QUESTION 3 IS NOT 1-2, THEN SKIP TO QUESTION 38]

[IF THE ANSWER TO QUESTION 35 IS NOT 3-5 OR 7, THEN SKIP TO QUESTION 38]
[IF THE ANSWER TO QUESTION 2 IS NOT 1, THEN SKIP TO QUESTION 37]

[Next two questions are required for CATI programming]

36. Why wouldn't you use it more often?

_____

_ (6)

[IF THE ANSWER TO QUESTION 35 IS NOT 3-5 OR 7, THEN SKIP TO QUESTION 9999]
[IF THE ANSWER TO QUESTION 2 IS 1, THEN SKIP TO QUESTION 9999]

37. Why wouldn't you use it more often?

_____

(57-306) _____

_____

38. The following questions are for statistical purposes only. In what year were you born?

Enter year as a 4 digit number .. _____ (46-49)

39. How long have you lived in the Matanuska Valley (USE 0 FOR LESS THAN ONE YEAR, 99 FOR REFUSED)

Number of years in Mat Valley .._____ (50-51)

40. Do you own your home or rent?

(52)
- ❑ 1 Own
- ❑ 2 Rent
- ❑ 3 Don't Know/No Answer

41. How many years of formal education have you had the opportunity to complete?

(53)
- ❑ 1 Some high school or less
- ❑ 2 High school or GED
- ❑ 3 Some college or technical school
- ❑ 4 Four-year degree
- ❑ 5 Postgraduate degree
- ❑ 6 Don't Know/No Answer

42. What is your total household income? (READ LIST)

(54)
- ❑ 1 Less than $25,000
- ❑ 2 $25,000 to $40,000
- ❑ 3 $41,000 to $55,000
- ❑ 4 $56,000 to $70,000
- ❑ 5 $71,000 to $100,000
- ❑ 6 Over $100,000
- ❑ 7 Don't Know/No Answer

43. That was the last question. Thank you for your time.

(55)
- ❑ 1 PRESS "1" TO CONTINUE

[IF THE ANSWER IS 1, THEN SKIP TO QUESTION 1009]

# Appendix C
# MAT-SU COMMUTER FOCUS GROUPS

The analysis of the Mat-Su commuter focus groups conducted by Craciun Research Group in February of this year is found in this appendix. The analysis includes the research findings, CRG's recommendations based on the findings, and an appendix including the focus group discussion guide.

Wilbur Smith Associates requested the focus groups on behalf of the Alaska Railroad Corporation.

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**A Marketing Research Report**

*Conducted for*

# Wilbur Smith Associates and the Alaska Railroad Corporation

February 14, 2001

# CONTENTS

# I. BACKGROUND

In November 2000, Craciun Research Group, Inc., was contracted by Wilbur Smith Associates (WSA) on behalf of the Alaska Railroad Corporation (ARRC) to design and conduct research to understand more fully the market potential of a commuter rail service from the Matanuska-Susitna Borough (MatSu) to Anchorage. To meet the project objectives, a design for both quantitative and qualitative research was approved and conducted in two phases: 1.) Quantitative telephone survey of four hundred MatSu commuters (N=400), and 2.) Qualitative research consisting of two focus group research sessions with MatSu commuters. Phase One of the study, the quantitative survey, was conducted between January 2 – 20, 2001 and the analysis and report were completed February 9, 2001.

The two focus groups of Phase Two were held January 30 and February 1, 2001 at Craciun Research Group's Focus Group Facility in Anchorage. The two groups were comprised of MatSu residents who were identified by a screening process as fitting the profile of regular commuters who worked in the selected cluster areas in Anchorage and who had indicated interest in commuting by train within the specified timeframes. The focus groups explored more fully the attitudes and opinions of these commuters toward the commuter rail proposal.

The following report analyzes and summarizes the opinions of the two groups.

# II. RESEARCH FINDINGS

## A. KEEP IT SIMPLE

Members of the MatSu Valley residents' focus groups emphasized the need for simplicity in design, planning, execution, and marketing for rail commuting between the MatSu Valley and Anchorage. They said their minimum requirements are three trains to Anchorage in the morning and four to the Valley in the evening. The trains must be punctual. They want at least one and preferably two fast express trains that go non-stop between the Parks and Glenn Highway Interchange and Anchorage. They need secure parking at both locations, reliable and quick shuttles in Anchorage, and cost effectiveness for the riders. The focus group participants also requested that Valley residents be informed about the commuter rail service in a realistic and simple format.

### 1. SEVERAL TRAINS TO ACCOMMODATE FLEXIBLE SCHEDULES OF COMMUTERS

The participants of the focus groups observed that Alaskan commuters have a wide range of work schedules. They want the service to include three or four trains in the morning and evening to accommodate the flexible schedules of commuters. They generally agree that morning trains should leave from Wasilla at 6:00, 7:00, and 8:00. Evening trains should leave Anchorage at 3:00, 4:00, 5:00, and 6:00.

***a. Morning Schedule*:**

Alaska is different. I think there is a larger percentage [of people] here working different work schedules than you would find in some other areas.

So many people work alternate work schedules. So they are starting anywhere from 6:00 to 9:00.

I agree. I started a van pool and that was the hardest thing to get that group of people that work that schedule. That was the hardest part. Most of the people in the van pool are 7:30 to 4:30. But then there are the 8:00 to 5:00 and the 9:00 to 6:00. So trying to get that group coordinated was the toughest part of organizing it.

It's going to be real hard to fit with everybody's schedule, because everybody has a different schedule.

I think they need to make a study on when the traffic comes in, because people start at 7:00, 7:30, 8:00, 9:00, there is all those different times.

If it left the Parks and the Glenn at 6:00, if the train started rolling at 6:00 for the ones that start at 7:00 or 7:30, that would work for me.

Don't get too close together.

I can't start [work] until 8:00 because I have to go see customers who don't start until 8:00.

So if it left at 6:00, 7:00, 8:00, would that work for you?

Oh, yeah.

I think that would be real good.

***b. Evening Schedule**:*

And the flexibility, if you had these different ones, let's say something came up that you needed to get back, that would be a selling point. A lot of people don't ride the van, because, hey, the van has a group and it serves the group and it has a set schedule and you can't deviate.

I could have gotten a lot more ridership in my van if I had one that left [Anchorage] at 3:00. It is amazing to me that some people start at 7:30 and they are off at 3:00.

At 3:00, 4:00, 5:00, or 6:00-- or something like that.

Yeah, because there are times that I have to get back home because of the kids or something and leave work early and it's amazing how many people are there on that highway from 3:30 or 4:00.

**2. SHORT COMMUTE TIME AND PUNCTUALITY**

The focus group participants were adamant about the necessity for quick trains, because they have additional travel time at each end. If total commute time is longer when they take the train, they are more likely to drive their vehicles. They want trains to leave exactly on time, not late and not early.

Time. I think that is important. From what time you leave and what time you arrive, time.

It's got to be timely. If the commute from the point of when you leave to the time you get to work is more than an hour and fifteen minutes or so, most people are going to shy away.

Or the waiting time for the train to leave.

If it is at the top of the hour, and you can count on it.

If my total commute time is more than 2-1/2 hours a day, I ain't interested.

I think it is a good idea if you can make it work. But time is precious.

It's time, it's the speed, speed.

The thought of it not getting to work on time!

And fast, fast.

Because it is one hour. I don't want to give anybody more than an hour, because I can make it in an hour.

The whole fact is how long it takes me to leave from when I leave home now to when I get to work. If I tried the rail service, would it be a comparable amount of time? I leave my home about 7:00, and I'm in my office at 8:10. It would have to be something comparable, and I live a long ways out.

It takes about an hour to get to Anchorage if the weather is really great. Sometimes like a snow day, like today, oh my gosh it takes way more than an hour and a half!

Perpetually just on time. I am not early, I am just on time. They are going to have to be reliable and right on time.

### 3. EXPRESS TRAINS

Valley residents in our groups do not want the trains to stop at Eagle River or Elmendorf because stopping would make their commutes too long. They suggested that one or two express trains be established that leave from the Parks and Glenn Highway interchange and go straight through to Anchorage with no intervening stops. One member suggested that if the Railroad decides to have one of the trains originate in Palmer and stop in Wasilla, then that should be the train that also stops in Eagle River and Elmendorf.

I don't see how they can drive a train sixty-five miles an hour and make it in an hour?

All within sixty-six minutes?

Yeah, that is what they are saying here.

I don't think so.

Nah, it would be tough.

They say right now it takes about an hour to get a train down from Wasilla to Anchorage currently, and that is without all these stops.

We could have an express from Wasilla to Anchorage, and that Palmer train can stop at all those places.

I think the train ride to be acceptable to get ridership is going to have to be about forty minutes.

Because you have to get from there to your other point plus!

And when you said stopping at Elmendorf and Eagle River, forget it.

If I lived in Eagle River, then I don't need a train.

The more stops you have, the more time. And you know there is only an acceptable time frame that people are going to give this.

Yeah, because time is money, too.

I didn't quite understand the stops in Elmendorf and Eagle River because that doesn't seem that far.

Every time you stop you are adding to that. And time is the thing that is going to kill you.

You might have one [train] that gets there in forty minutes. And one that gets there in two hours.

First one and then the Express!

Yeah, the Express.

One Express train.

I wouldn't mind, if the express picked up at Wasilla and picked up there at the Matanuska [Parks and Glenn Highways] and then shot in...

...Then shot into Anchorage...

...Yes, that would be okay.

### 4. SECURE PARKING AT BOTH LOCATIONS WITH EASE OF EXITS

The members of the MatSu Valley residents focus groups feel that the Railroad should provide secured parking lots at both ends of the commute, one at the Parks and Glenn Highway interchange and another at the Anchorage depot. "Secure" for them means well lit with plenty of visibility, security guards or troopers who check on the cars, and possibly a fence to deter vandalism. The moderator probed for real vandalism concerns and both groups agreed it was on the rise. Covered parking and plug ins are not necessary, because they do not want to increase costs and their fares. Open parking lots make it easier to spot vandals. While a couple of folks pondered that it would be nice if there were plug ins, most were more concerned about the increase in costs. Easy exit from the lots is important, as commuters do not want to be hung up with traffic jams as they attempt to drive out at the same time.

> Secured parking. We have a woman on our van [who] drives in on Monday and drives home on Friday night. She takes her vehicle from that point.

Secured parking. So we don't get our vehicles broken into.

Not necessarily [covered or with hook-ups].

You need secured parking. I left my vehicle here [Anchorage] and it was vandalized. And secured parking, if you are going to leave your vehicle here, it is a good incentive.

Both ends [Anchorage and in the Valley].

We spend a lot of money on our cars.

[Vandalism] is getting worse. It's an issue that is getting worse as you go, so it's something to consider. Because the more toys that you put on your cars, the car phones and the CDs.

My thinking is that they ought to build a big parking lot, make it a secure parking lot, and a depot right at the Parks and the Glenn. If anybody in the Valley wants to, they can get to that point.

Troopers can drive by that very easily from that location.

If it was a fenced thing, like the parking places you have here in Anchorage, where I was keeping my car, you have a card they issue and you swipe it and you get in. Not just anybody can get in.

My problem has been finding secured parking. So if that secure parking is at both ends, you have solved that problem.

That would be a big selling point.

Better parking. Big huge parking lot. They are going to have to make a big, new lot if they stop at the Parks and Glenn.

What I would need would be some place that I could leave my car. I would leave it in Anchorage. And I would need some place that I know that it wouldn't be vandalized.

I think the parking lot should be open. So when the high-school kids come in with their baseball bats [they can be seen].

Security is important, so it should be open.

If you only have one car and you go back, and it's all busted up.

You haven't seen those cars out there in Knik Road. People put them out to sale and within two days somebody has busted out all the windows out of it.

You need a big, lighted parking lot. I leave my car at Walmart in the parking lot everyday. The Walmart clerks do keep an eye on it. When they go out to get the carts, they look.

Access, in and out. If you get all the people coming off the train time there has to be more than just one lane going out. You have to have good access to get out to the main roads.

### 5. RELIABLE AND QUICK SHUTTLES

Members of the focus groups were spontaneous in their desire for special bus service in Anchorage to get them from the train to central locations throughout the city and to their work places. None of them feel they can rely on the current bus service in Anchorage. They eagerly accepted the possibility that "mini-express" shuttle buses will be available to them at the train depot in Anchorage to take them quickly to a variety of centrally located drop off places, such as the Sixth Avenue bus station.

The one thing that would make a difference is the bus schedules in Anchorage. If it was convenient, and it is not now. I wouldn't even consider taking a bus, but if it was improved, it may help.

And routes and the timing. I think that would be a major consideration.

Bus service. If it is not convenient for me to get to work or to match the train schedule, I am not going to do it.

I would say the biggest concerns to get people to ride is dealing with the buses. We got "Mascot" [MatSu bus service] out in the Valley now and that is growing and it is a great service. But typically, people who live out in the Valley, they prefer not to live in a city. So most people don't have first-hand experience with riding buses. And it's intimidating. Plus, Anchorage bus system is not that convenient.

It doesn't matter to me where [the Anchorage depot] is, if you can get me there within an hour. As long as the bus is there waiting to take you away.

Having dedicated buses that are there to pick-up purely commuter riders, and know that you are not going to stop and pick up all the other people along the way.

You could have like five buses going to different sections of town.

The bus schedule is terrible in Anchorage. You can't rely on it.

If you are thinking in terms of a bus at this end to get us to work, then maybe there could be the Mascot that could do a route in the mornings to pick people up to get them to the train, too.

For some people, the bus schedule would work, as long as you can get them from the train station to the [Sixth Avenue bus station] where they could catch those buses.

They need to make it tie-in with the bus system or the connections.

Then you hear the Municipality of Anchorage, they are talking about cutting their bus schedule back. [Laughter]

Now they just get us to Anchorage and say, "Get out! [Laughter] You are on your own now."

You would have to have buses lined up down there just shooting them through town. If they could just shoot from there to midtown to Dimond, just straight through on "C" Street.

I do not trust the current bus service to handle the commuters.

And that's it; we can't trust them. I mean it's there right now and right now it's free but it's free because it wasn't cut and so they take advantage of the federal grant.

The railroad might want to have their own bus.

It's O.K. to have central areas where the buses could stop. A good place for it would be at the Sixth Avenue bus station.

It would have to be some major centers.

But not stop as much as the bus does. Like a mini-express.

## 6. COST EFFECTIVENESS FOR RIDERS

Members of the focus groups report that they are putting approximately thirty thousand miles on their vehicles per year for the commute or one hundred miles per day, and their expenses for commuting are between $100 and $250 per month. They expect that fares for the train and shuttles will be less than their current expenses. They thought they might pay between $70 to $150 per month for train tickets. They would prefer to buy their tickets on a monthly basis.

I just did my taxes last night, and I have been working since August. I have a diesel, so that is a little different, but I have spent about $600 in fuel, plus I purchased the vehicle.

I put on fourteen thousand miles on my vehicle in six months. I've got one-hundred miles a day that I am putting for my commuting.

If you commute and work five days a week, there is thirty-five thousand miles a year on your vehicle.

I got tired of wearing out my vehicle so I started a van pool and that is $72 a month for one hundred miles round-trip.

I bought my car new in January of last year so it's been almost exactly a year. I've got thirty thousand miles.

Mine is two years old and it's got sixty-two thousand on it.

I know it costs us $250 just for gas.

The most important thing is you keep the cost within the range between $70 to $120 a month.

I would be willing to pay up to $150, if I had that flexibility of being able to put my bike on if I wanted to.

If it's more than $150 a month and you are riding five days a week, I think it would kill it.

I spend about $100 a month on a Subaru.

I pay $185 a month. If [train fare] is $100 a month, that would be good. I'd save $85.

I pay about $150 a month.

For those that have to do it five days a week, they should be able to buy monthly or yearly or something to get a price break.

## 7. SUGGESTIONS FOR GETTING VALLEY RESIDENTS TO TRY THE SERVICE

Members of the focus groups spontaneously offered suggestions for marketing rail service to commuters. They advised the Railroad to advertise the service better than the Share-A-Ride van service does now. They suggested that advertising should be realistic and clearly stated.

A big selling point is that commuting by rail will be simple and cost effective for riders. The groups' members agreed that the system should be working perfectly from the first day of service. Commuters will evaluate it and tell others immediately, especially if their experiences are negative, as these participants agreed happened to Alaskans in their disappointments over the SeaLife Center in Seward.

***Verbatim Discussion by January 30th Focus Group:***
Advertise. Advertise a lot. A lot of positive advertising. A Share-A-Ride van thing doesn't do as well as it could because they don't have a lot of good advertising. Let people know that they could make their own schedule.

There is definitely room for improvement.

I agree. A good marketing package to really let people know how it's going to work, how easy it could work for them, that it is cost efficient.

I would say that what they need to do is to tie-in with the bus system or the connections.

And make it real.

Yeah, make it clear, make it simple, make it easily understood with their marketing on that. That's good because that is going to be a big selling point.

Because of the costs, and "How can I do this?"

***Verbatim Discussion from February 1st Focus Group:***
My advice would be to have all the bugs worked out before it starts on day one. Don't start off and then the next day we'll do it this way. It's got to work perfect from day one, or it's going to turn people back to their cars.

We'll try it and with good experience, they continue. If a bad experience...

They'll tell others right away.

The word will go out just like Alaska SeaLife.

Alaska SeaLife opened their doors to the fanfare saying, "We are going to show you cuddly animals and you know you are going to be able to touch them and it's going to be like *SeaWorld*. And we got down there and we found out that it was a technical place, where we could hear about the mating seasons of pigeons or seabirds or something. But it wasn't what they advertised.

## B. AMENITIES SECONDARY TO LOW FARES

The focus groups participants were concerned with keeping the fares low by avoiding expensive amenities. They want the train to be clean. Amenities they would like are coffee and newspapers available for purchase; spacious and comfortable seats suitable for sleeping; clean restrooms; a place to stow large items such as skis, bikes, and mopeds; overhead racks for smaller items such as bulky winter clothing; and a quiet ride for sleeping and reading. Although one responded that a computer hookup "would be nice," he agreed with the others that keeping fares low is more important. Furthermore, they expect the trip to take between forty-five and sixty minutes, which they perceive as too short to care about the Internet.

Coffee!

Newspaper and clean. And probably a bathroom.

You could sleep on the train.

You can bring your bike.

Coffee and newspaper.

Good lighting to read.

I think it's almost too short of a commute to [connect computers].

You got to keep the cost down.

Yeah, that's the most important thing is you keep the cost within the range. Some place to put our coats. You think about the wintertime. I wear two different shoes, the shoes I wear to get to work and the shoes I wear at work. And I have a blazer on and a jacket.

Spacious seats.

Room above.

You want something, because people are going to bring skis along sometimes or snowboards. So you want a storage or a [baggage] car you can throw it all in and get it all out of the way. Because people can bring mopeds or bicycles that they can get down at the rail yard and just bike.

Even the city buses have that for bikes now.

I'd like it to be clean.

## C. TAKING CARS AND PICKUPS ON THE TRAIN

### 1. January 30th Focus Group

Members of the January 30th focus group agreed that a viable solution to needing one's own vehicle in Anchorage is to take it on the train. They decided that this was feasible for those who are not able to utilize the shuttles, such as sales people who need their own vehicles to call on customers. They suggested that the system could be efficient, as it was for the passenger train that serviced Whittier by carrying vehicles on train flat beds.

The auto passengers would remain in their vehicles for the train trip, and they would be loaded on first and off last. They mentioned the efficiency also of ferries that take on vehicles.

The members of this focus group discussed the possibility that a train so burdened may not be able to get enough speed to make the trip from Wasilla to Anchorage in a timely manner (forty-five minutes for this group). So they suggested that only one train each way per day would carry cars or pickups, and that would be the non-express train that also stopped at Eagle River and Elmendorf.

***Verbatim Discussion Focus Group:***

How are you going to get around in Anchorage? That's a big consideration for me. Even though I can work by going to one place and then come home, you like to drive around.

If you are adding a [train] car that you can drive your car onto.

Uh, huh. That would be a cool idea.

I have to have a vehicle for my job in town. But I have to have a way to get to the depot.

Because that is a big thing. We are so used to driving our vehicles. We need a vehicle everywhere we go.

I'm not sure what they have in mind per car because that is time-consuming to load cars and unload cars.

I like the idea of taking the cars on the train. I used to go to Whittier a lot, years ago and ...

...But doesn't that take time?

Actually it didn't then, because you got there early enough. And you knew that it left at 6:00.

Right, everybody got on. They drove forward until they stopped you until the train left. It didn't take us that long.

[Moderator]: So that would be a value add?

It is [a value] if the train conductors are dedicated. He said, "O.K., we are leaving; that's it."

You sit in your car and ride.

Yeah.

Ferries go on time and they are loading cars. If you are not in line to get on the ferry, you don't go.

Right, yeah, there is just a deadline. They will close the thing, and they won't load any more autos after a certain time.

Yeah.

It depends on how you set up the loading and unloading, so if you got to where it's a speedy deal, and you are not waiting a half hour to unload ...

[Moderator]: So you think this is a big issue for valley residents, that they have this option?

Yeah.

Yeah, I think it would be a selling point.

Yes.

Because a lot of us, where I work, I don't see anyway that this is ever going to work for me to have to get to both ends.

Well, you don't need it if there is something else.

But I think it's probably a pipedream that you think you can do this within that time frame, load a vehicle and unload a vehicle. I don't think the reality of that would be feasible. Plus the cost of building all that to set it up. I don't know, so I really think that might be a pipedream.

But if you don't need your vehicle, you are off the train and running. Whereas if I need my vehicle, I know that is a factor that I build in the time.

If you are taking your car, you are going to have to get there early to load it. If you are not, you get there five minutes before you leave.

Then you also know it's going to take you longer.

Right.

Then, once you get off the train, you got your vehicle so you don't have to worry about the bus either.

There is also a safety thing. I think it would limit the speed of the train by loading a vehicle.

It would.

Versus, none of that where you have a short, fast, train to get you there and take you back. If you add all that other, you got to tie [the vehicles] down if you are over a certain speed, and all these safety considerations that slows everybody down.

What if the early 6:00 a.m. is like slow motion? Do a variety.

Cars and everything else. The later one, and the earlier ones get there right away. Create some flexibility.

**2. February 1st Focus Group**

Members of the February 1st focus group thought of taking vehicles on the train, but quickly squelched the idea. Although the January group had a member who needed her car to perform her duties for work, the February group did not. Consequently they were more willing to dismiss the notion of loading vehicles, because they were not motivated by the needs of one of their group members.

***Verbatim Discussion by Focus Group:***

[Moderator]: This is your train; it needs to meet your needs. It can have on it whatever you want or don't want. It's going to be designed with you in mind. What is an option that this group hasn't thought about yet? Come on, I'm pushing on you now. Come on Valley people.

Hot tub. [Laughter]

[Moderator]: You had the bikes on it. You had the mopeds.

Continental breakfast.

Cars. Put the cars on the train. Flatbeds on the train.

[Moderator]: Do you want that? Is that something?

Nah. [All the group members shake their heads "no."]

[Moderator]: You don't care.

It is not that big of a commute.

No, it's not.

Loading and unloading.

[Moderator]: Who would like that idea? Anybody? [Nobody.] That is interesting. It came out in the other group that Whittier worked all right. O.K., back on the train. What else on it? Computer hook-ups? Does anybody use a computer on the train?

Nah, [Laughter].

[Moderator]: She is laughing, why are you laughing?

Why don't you take the motor home to work? [Laughter]

## D. CONCERN FOR MOOSE ON THE TRACKS AND DERAILMENTS

Both MatSu Valley resident focus groups mentioned the possibility of derailments and problems with moose. They feel that the Alaska Railroad might be too slow if the right-of-way is given to freight trains and moose. They mentioned the possibility of derailments, because there have been more rail accidents than usual in the recent past. They also acknowledged that the Railroad is in the process of making repairs and "getting their act together."

> If you leave the Valley and you are halfway, and all of a sudden there is a coal train with coal cars coming. So you pull off to the side and you sit there while that big train goes that brings in more money than the commuter train does.
>
> Or a derailment.
>
> Oh, god. That's Alaska Railroad!
>
> Or hitting a moose or something.
>
> And what happens if something happens to the train and it derails, and I'm depending upon it to get to work? What is my alternative?
>
> I think you would have a more serious consideration. [Laughter]
>
> [Moderator]: How many train derailments have you seen in the valley this last winter?
>
> They are supposed to be fixing that [the faulty rails].
>
> How long have they said they were going to do that?
>
> [The Railroad doesn't] have a very good record.
>
> Not this last year they don't.
>
> Dumping fuel and stuff, last winter. They have got to straighten their act up.
>
> And one of those accidents happened right on the way that the commuter train would go through.
>
> Moose on the track. Derailments. [Laughter] Or do they kind of wave them off?
>
> So what are they going to do about all the moose that run up and down the track? Are we just going to run over them?

[Moderator]: So that is just a side concern? A train killing moose, not the moose getting us?

We sign our names, and then go down the list. "O.K., you get the first moose kill." [Laughter]

## E. EMPLOYER AND GOVERNMENT CONTRIBUTIONS TO COMMUTERS

The focus group members did not expect employers to assist them with the costs of their commute, but they would be pleased for any help they could offer. The participants thought that maybe some of the larger employers could be convinced to offer grants for the commute, if several of their employees live in the Valley. One participant mentioned that financial incentives might be given by the State or Borough.

***Verbatim Discussion by January 30th Focus Group:***
[Moderator]: Should an employer get in on that?

Yes.

Sure, that would be great.

We don't have a State tax. I was trying to think we could do it that way. In California where I lived, there were tax incentives when you did certain kinds of conservation measures in your home. To implement some kind of a rebate or a tax incentive.

Oh, yes. Oh, yes.

[Moderator]: Would that make a difference?

Wouldn't hurt; that is for sure.

Wouldn't hurt.

Or a break on your borough taxes. I mean because you are not adding for the road maintenance. Or something like that, because anytime you can do something that is going to hit the pocketbook, that is what people are going to buy in.

Or getting an employer to match. You know when you give to your University, a grant? And your employer can do a matching grant and get a tax write-off for it. I mean a matching grant or whatever type of a program or something, so that he is paying or she is paying half of your monthly pass but he is getting a break.

[Moderator]: Does that matter to people in the Valley?

Saving them a buck? They will be interested. Yes.

Most of my experience with employer involvement when it comes to the Valley is, "You chose to live there."

Uh, huh. That's right. [Chuckle]

***Verbatim Discussion by February 1st Focus Group:***
[Moderator]: Now should employers help pay for those shuttles to and from your work?

Nah.

No.

No.

[Moderator]: So it's got to be figured out as part of the costs of the commute.

It could be State funds. My employer is the State.

[Moderator]: All right. So you are with the State. Do you think some employers, like the hospital or the State, might do shuttles on their own?

No, it's just like our cars. They don't pay for our gas or our insurance.

[Moderator]: So it's going to have to be figured out from this project.

I think some of the larger employers; they are trying everything right now to make how we work easier. And so instead of getting our raises, because they are recognizing that is not the reason we stay in the job, they are trying to figure out what else. And so if enough of us... Right now in my office, in my office there is three of us that commute. If we take the same organization downstairs, there is probably maybe seven of us total.

[Moderator]: So they could organize?

Yeah. That's seven people. And if we said, "Yeah, we are doing this, and this would be a nice thing for us," then that might be the reason to do it.

If some large employer that has a lot of people commuting in, it might benefit them to help out.

Because you don't have the stress from driving. You are nice and relaxed and get to work, and they are more cheerful. They are not trying to fight off all that anger from...

It might relieve congestion, too, about the parking and that kind of stuff.

## III. RECOMMENDATIONS

- Offer a more flexible schedule than proposed. Consider offering at least three trains in the morning leaving the Parks and Glenn Highway interchange at 5:00, 6:00, and 7:00; return trains would leave from Anchorage in the evening at 3:00, 4:00, 5:00, and 6:00.

- Offer an Express Train. At least one, and preferably two of the trains each way should be express trains, that is non-stop between the Parks and Glenn Highway interchange and Anchorage in only forty-five minutes. The remaining trains may stop at Eagle River or Elmendorf and complete the trip between the two depots in sixty to sixty-six minutes. Extensions of the train into Palmer or Wasilla could be added.

- Trains should leave the two major depots hourly, on the hour or half-hour to make it easier for passengers to remember.

- Covered Parking and plug ins are not needed. Some people will drive their cars to Anchorage on Mondays and leave them parked there each night until Friday.

- Dedicated, reliable, and efficient shuttles in Anchorage are necessary, but they are not so important in Wasilla and Palmer. Commuters will drive and park in the mornings in the Valley or be dropped off by family members.

- Train and shuttle fares combined should be less than it costs to operate a vehicle between the Valley and Anchorage. Some would tolerate up to $150/month, but the preferred rate is closer to $100/month.

- Trains should include the capacity to load on bicycles, mopeds, skis, and bulky winter clothing.

- Trains need to have comfortable, roomy seats because many commuters will sleep and Valley residents deplore crowding. Provide individually controlled lights for reading, clean restrooms, and the opportunity to purchase coffee and newspapers.

- Have all of the above in place before the first train operates, and make it perfect from the beginning.

- Advertisements should be "real," that is simple and informative and not too slick.

- Work with employers, the State, and other governmental entities to find financial incentives to encourage train commuters.

- And finally, making it possible for skeptical Valley residents to take their vehicles with them into Anchorage may be what it takes to win commuters to the trains. It needs to be done efficiently (without slowing down the system for other commuters), and publicized in a simple and realistic manner.

# APPENDIX

ARRC Discussion Guide
January 28 and February 1, 2001
**[TARGET SEGMENT: MatSu Residents who answered selected survey questions]**

**I. INTRODUCTION**: Today we are here to gain a better understanding of what people living in the Valley think about the whole idea of a commuter rail service. We are specifically interested in your needs and wants for amenities and services that would be required for you to consider taking a train into Anchorage. We would also appreciate learning from you, what you believe people from MatSu, potential commuters, think are important considerations as part of this new rail service.

**SHOW AND TELL ARRC PROGRAM OF PROJECTS PACKET**

## II. WARM-UP: General Discussion of Rail Commute & Experience with Service

Let's begin with the big picture. We really do not need any detail at this time, but rather general comments.

1. Did you ever ride a commuter rail service in another city, as a tourist, while you lived or worked there? How many commuted for work on a daily basis?

2. What does the group think, in general about a commuter rail service from MatSu Borough to Anchorage? Good idea or bad idea? Are people in the Valley open to such an idea in your opinion?

3. Everyone here responded to our survey and expressed an interest in a commuter rail service but now what I am wondering is what would it actually take to get you to try it out? What kind of incentive would be necessary to get you on it that first time?
*(Note: What would encourage you to try it? Curiosity/PR offering/EXPLORE)*

4. I'm just curious as to how much we are paying now for auto commutes, gas, maintenance, parking, what else do we pay for? What do we guess round trip costs?

## III. IN-DEPTH: Details of Services and Amenities

Now we need to explore in detail what is best for the customer of this new commuter rail service? Lots of documents are being written explaining what has mattered elsewhere, but this is Alaska and we do it our way, so let's read the following pages to learn about the issues that we need to consider in this discussion. As you read please keep in mind:

1. **What are the *Alaskan key service attributes* and what matters most to you?**

**PASS OUT HANDOUTS FOR REVIEW RIDERSHIP EVAL. REFER TO PG 15-16**

2. [UNAIDED] Is there a Key Service Attribute that is particularly important to you? Is one more valuable toward your participation than another? Why?

**[WATCH FOR: comments regarding Choice of departure times; Convenience regarding access to parking at residence end/shuttle to work once in town; Value for money as compared to auto trip expenses; trip length of time; and Reliability issues. Note any comments on rates but hold until later]**

3. [AIDED] Let's think about the details that have been explained: thus far we know that our trains would operate only on weekday business days, with no Saturday, Sunday or holiday service. The Wasilla trains depart at 6 and 6:45am, arriving in Anchorage at 7:06 & 7:15. Dedicated bus shuttles will meet each train and distribute passengers to key drop sites. Intermediate stops will be made at Matanuska, Eagle River, and Elmendorf. Travel time from Wasilla to Anchorage is estimated to take one hour (to 66 minutes). Return in the afternoon, trains leave at 5 and 5:45pm. Shuttles pick up riders and drive them to Anchorage station (at or near the Old Depot) just prior to train departure.

**4.** What works best for you in this plan**?** *(Note: Explain train pick up sites as Wasilla, south church street; Glenn and Parks Hwy junction; explore shuttle impact)* **[WATCH FOR: watch for flexible work schedules that do not fit the patterned trip; parking expectations on residence side; seasonality of usage probe summer vs. winter requirements e.g. plug-ins, covered parking etc.; what should be provided for comfort on board; how much should it cost and who is paying; what if the commute is longer than an hour probe concerns.]**

5. Let's talk about some of the amenities or services on board, that would be an added value to your commute experience? Computer hook-up, etc?
6. Should employers help pay for commute?
7. Are you interested in learning more about the train? Why do you want to use this commuter train?

## IV. IN-DEPTH: Barriers to Commuter Rail Service

1. Let's switch our attention as a group to **focus on barriers to this commuter rail service**. What first comes to mind when I say: Alaskan issues not experienced elsewhere? **[PROBE: Weather; value for the money; animals and security issues; specify problems in detail to be worked out.]**
2. What else is important to you about this service that has not been mentioned yet?

## V. WRAP - UP:

What is the single most important piece of advice that you could give the Alaska Railroad and all the people working on this project, if they want to provide you with this new commuter rail service in Alaska?

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# Appendix D
# SCHEDULES

This appendix includes schedules for the Minimal and Expanded Service Levels of Wasilla-only service and of Wasilla and Girdwood services.

Assumptions include:

- 66-minute travel time between a South Church Road station in Wasilla and the Anchorage depot
- 57-minute travel time between Girdwood and the Anchorage depot
- Area residents would be able to ride existing summer trains between Mat-Su and Anchorage and between Girdwood and Anchorage, and pay commute-level fares
- Commuter trains will have priority over freight trains and summertime passenger trains

# Figure D-1
# Minimal Service Schedules
# Wasilla-Anchorage

*Read Down* *Read Up*

| C1 | Coastal Classic | C3 | Glacier Discovery | Denali Star | Location | Denali Star | C2 | C4 | Glacier Discovery | Coastal Classic |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:00 | --- | 6:45 | --- | 18:20 | Wasilla | 9:45 | 18:06 | 18:51 | --- | --- |
| 6:18 | --- | 7:03 | --- | --- | Matanuska | --- | 17:50 | 18:35 | --- | --- |
| 6:46 | --- | 7:31 | --- | --- | Eagle River | --- | 17:23 | 18:08 | --- | --- |
| 6:58 | --- | 7:43 | --- | --- | Elmendorf | --- | 17:10 | 17:55 | --- | --- |
| 7:06 | --- | 7:51 | --- | 20:15 | Anchorage | 8:15 | 17:00 | 17:45 | --- | --- |
| --- | 6:45 | --- | 10:00 | --- | Anchorage | --- | --- | --- | 21:45 | 22:25 |
| --- | --- | --- | --- | --- | Spenard | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | Dimond Center | --- | --- | --- | --- | --- |
| --- | 8:15 | --- | 11:30 | --- | Girdwood | --- | --- | --- | 20:15 | 20:55 |
| | to Seward | | to Whittier | | | | | | from Whittier | from Seward |

Shaded area represents commute train year-round schedules
(Commute trains operate weekdays only)
Other trains shown are daily summer season trains on existing schedules

Equipment Turns
Set 1: C1, C2
Set 2: C3, C4

# Figure D-2
# Minimal Service Schedules
# Wasilla-Anchorage-Girdwood

*Read Down* *Read Up*

| | Coastal | | Glacier | | Denali | | | Denali | | | Glacier | Coastal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | Classic | C3 | Discovery | C5 | Star | Location | C2 | Star | C4 | C6 | Discovery | Classic |
| 6:00 | --- | 6:45 | --- | --- | 18:20 | Wasilla | --- | 9:45 | 18:06 | 18:51 | --- | --- |
| 6:18 | --- | 7:03 | --- | --- | --- | Matanuska | --- | --- | 17:50 | 18:35 | --- | --- |
| 6:46 | --- | 7:31 | --- | --- | --- | Eagle River | --- | --- | 17:23 | 18:08 | --- | --- |
| 6:58 | --- | 7:43 | --- | --- | --- | Elmendorf | --- | --- | 17:10 | 17:55 | --- | --- |
| 7:06 | --- | 7:51 | --- | --- | 20:15 | Anchorage | --- | 8:15 | 17:00 | 17:45 | --- | --- |
| --- | 6:45 | --- | 10:00 | 17:45 | --- | Anchorage | 7:23 | --- | --- | --- | 21:45 | 22:25 |
| --- | --- | --- | --- | 17:56 | --- | Spenard | 7:13 | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | 18:07 | --- | Dimond Center | 7:01 | --- | --- | --- | --- | --- |
| --- | 8:15 | --- | 11:30 | 18:42 | --- | Girdwood | 6:25 | --- | --- | --- | 20:15 | 20:55 |
| | to | | to | | | | | | | | from | from |
| | Seward | | Whittier | | | | | | | | Whittier | Seward |

Shaded area represents commute train year-round schedules
(Commute trains operate weekdays only)
Other trains shown are daily summer season trains on existing schedules

Equipment Turns
Set 1: C1, C4
Set 2: C3, C6
Set 3: C2, C5

# Figure D-3
# Expanded Service Schedules
# Wasilla-Anchorage

*Read Down* *Read Up*

| | Coastal | | | Glacier | | Denali | | | Denali | | | Glacier | Coastal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | Classic | C3 | C5 | Discover | C7 | Star | Location | C2 | Star | C4 | C6 | C8 | Discover | Classic |
| 6:00 | --- | 6:45 | 9:30 | --- | 15:00 | 18:20 | Wasilla | 9:06 | 9:45 | 14:36 | 18:06 | 18:51 | --- | --- |
| 6:18 | --- | 7:03 | 9:48 | --- | 15:18 | --- | Matanuska | 8:50 | --- | 14:20 | 17:50 | 18:35 | --- | --- |
| 6:46 | --- | 7:31 | 10:16 | --- | 15:46 | --- | Eagle River | 8:23 | --- | 13:53 | 17:23 | 18:08 | --- | --- |
| 6:58 | --- | 7:43 | 10:28 | --- | 15:58 | --- | Elmendorf | 8:10 | --- | 13:40 | 17:10 | 17:55 | --- | --- |
| 7:06 | --- | 7:51 | 10:36 | --- | 16:06 | 20:15 | Anchorage | 8:00 | 8:15 | 13:30 | 17:00 | 17:45 | --- | --- |
| --- | 6:45 | --- | --- | 10:00 | --- | --- | Anchorage | --- | --- | --- | --- | --- | 21:45 | 22:25 |
| --- | --- | --- | --- | --- | --- | --- | Spenard | --- | --- | --- | --- | --- | --- | --- |
| --- | --- | --- | --- | --- | --- | --- | Dimond Center | --- | --- | --- | --- | --- | --- | --- |
| --- | 8:15 | --- | --- | 11:30 | --- | --- | Girdwood | --- | --- | --- | --- | --- | 20:15 | 20:55 |
| | to | | | to | | | | | | | | | from | from |
| | Seward | | | Whittier | | | | | | | | | Whittier | Seward |

Shaded area represents commute train year-round schedules
(Wasilla-Anchorage Commute trains operate weekdays only)
Other trains shown are daily summer season trains on existing schedules

Equipment Turns
Set 1: C3, C2, C5, C4, C7, C6
Set 2: C1, C8

# Figure D-4
# Expanded Service Schedules
# Wasilla-Anchorage-Girdwood

*Read Down* *Read Up*

| | Coastal | | | | Glacier | | | Denali | | | | Denali | | | | | Glacier | Coastal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | Classic | C3 | C5 | C7 | Discover | C9 | C11 | Star | Location | C2 | C4 | Star | C6 | C8 | C10 | C12 | Discover | Classic |
| 6:00 | --- | 6:45 | | 9:30 | --- | 15:00 | --- | 18:20 | Wasilla | --- | 9:06 | 9:45 | 14:36 | --- | 18:06 | 18:51 | --- | --- |
| 6:18 | --- | 7:03 | | 9:48 | --- | 15:18 | --- | --- | Matanuska | --- | 8:50 | --- | 14:20 | --- | 17:50 | 18:35 | --- | --- |
| 6:46 | --- | 7:31 | | 10:16 | --- | 15:46 | --- | --- | Eagle River | --- | 8:23 | --- | 13:53 | --- | 17:23 | 18:08 | --- | --- |
| 6:58 | --- | 7:43 | | 10:28 | --- | 15:58 | --- | --- | Elmendorf | --- | 8:10 | --- | 13:40 | --- | 17:10 | 17:55 | --- | --- |
| 7:06 | --- | 7:51 | | 10:36 | --- | 16:06 | --- | 20:15 | Anchorage | --- | 8:00 | 8:15 | 13:30 | --- | 17:00 | 17:45 | --- | --- |
| 7:10 | 6:45 | --- | 8:30 | --- | 10:00 | --- | 17:45 | --- | Anchorage | 7:23 | --- | --- | --- | 15:58 | --- | 17:38 | 21:45 | 22:25 |
| 7:21 | --- | --- | 8:41 | --- | --- | --- | 17:56 | | Spenard | 7:13 | --- | --- | --- | 15:48 | --- | 17:28 | --- | --- |
| 7:32 | --- | --- | 8:52 | --- | --- | --- | 18:07 | --- | Dimond Center | 7:01 | --- | --- | --- | 15:36 | --- | 17:16 | --- | --- |
| 8:07 | 8:15 | --- | 9:27 | --- | 11:30 | --- | 18:42 | --- | Girdwood | 6:25 | --- | --- | --- | 15:00 | --- | 16:40 | 20:15 | 20:55 |
| | to | | | | to | | | | | | | | | | | | from | from |
| | Seward | | | | Whittier | | | | | | | | | | | | Whittier | Seward |

Shaded area represents commute train year-round schedules
(Wasilla-Anchorage Commute trains operate weekdays only)
Other trains shown are daily summer season trains on existing schedules

Equipment Turns
Set 1: C1, C12
Set 2: C3, C4, C7, C6, C9, C10
Set 3: C2, C5, C8, C11
Note: Set 1 weekends operates C1 (from Wasilla on Saturday), C12 (to Wasilla on Sunday); Set 3 weekends operates C2, C5, C8, C11

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# Appendix E
# OPERATING COSTS FOR MINIMAL SERVICE

Appendix E presents a spreadsheet analysis of projected operating costs for a Minimal Service Level of Wasilla-only service with trains operating weekdays during peak periods. Costs in Table E-1 are stated in Year 2000 dollars.

Assumptions include:

- Two train sets
- One crew assigned to each train set; crews provided by an independent contractor
- A crew consists of an engineer (or operator) and a conductor
- Rail Diesel Car (RDC) rolling stock
- Mat-Su – Anchorage train sets include two three-car RDC 1 train sets

## Table E-1
## Wasilla - Anchorage Minimal Service Level with Non-ARRC Crews and MOE Forces

### Operating Costs

Equipment: 2 train sets consisting of rebuilt RDCs.
Frequencies: 45-minute at Peak.
Two crews. Two crew persons per train set.

| **Transportation** | Wages & | | |
|---|---|---|---|
| *Labor* | Salaries | Employees | Cost |
| Train Operator-Regular | 60,320 | 2 | 120,640 |
| Train Operator-Relief crew | 6,032 | 2 | 12,064 |
| Train Operator-Fringes | 25,938 | 2 | 51,875 |
| Train Conductor-Regular | 60,320 | 2 | 120,640 |
| Train Conductor-Relief Crew | 6,032 | 2 | 12,064 |
| Train Conductor-Fringes | 25,938 | 2 | 51,875 |
| Supervisor-Regular | 75,000 | 1 | 75,000 |
| Supervisor-Overtime | | 1 | - |
| Supervisor-Fringes | 32,250 | 1 | 32,250 |
| Dispatchers Shared with ACCR-Regular | 67,329 | 0.3 | 22,219 |
| Dispatchers Shared with ACCR-Overtime | | 0.3 | - |
| Dispatchers Shared with ACCR-Fringes | 28,951 | 0.3 | 9,554 |
| Office Staff-Regular | 35,000 | 1 | 35,000 |
| Office Staff-Fringes | 15,050 | 1 | 15,050 |
| Total | | | 558,231 |
| *Other* | | | |
| Low value tools and equipment | | | 400 |
| Other outside services | | | 400 |
| Total | | | 800 |
| Total transportation costs | | | **559,031** |

| *Assumptions* | |
|---|---|
| Relief crew for vacation, sick days, personal days, training | 10% |
| Fringes | 43% |
| Miscellaneous tools per operator | 200 |
| Outside services per operator: taxi, cell phone charges, etc. | 200 |
| Commuter service share of dispatcher time | 33% |

| **Maintenance of Equipment** | **273,000** |
|---|---|

| *Assumptions* | |
|---|---|
| Anticipated annual train miles Wasilla - Anchorage | 45,500 |
| Anticipated annual train miles Girdwood - Anchorage | - |
| Anticipated annual RDC car miles for both services | 136,500 |
| Maintenance cost per RDC car mile | 2 |

| | | |
|---|---|---|
| **Fuel** | | **108,108** |
| *Assumptions* | | |
| Gallons per train mile Wasilla - Anchorage | 1.20 | |
| Gallons per train mile per Girdwood - Anchorage | 0.00 | |
| Anticipated annual train miles Wasilla - Anchorage | 45,500 | |
| Anticipated annual train miles Girdwood - Anchorage | - | |
| Price per gallon for diesel per Traffic World | 1.80 | |
| Allowance for spillage and idling | 10% | |
| **Maintenance of Way** | | **25,512** |
| *Assumptions* | | |
| Tons per RDC (65 tons per RDC plus 5 tons of load) | 70 | |
| Tons per train set Wasilla - Anchorage | 210 | |
| Tons per train set Girdwood - Anchorage | 0 | |
| Anticipated annual train miles Wasilla - Anchorage | 45,500 | |
| Anticipated annual train miles Girdwood - Anchorage | - | |
| Cost per ton mile Wasilla - Anchorage | 0.00267 | |
| Cost per ton mile Girdwood - Anchorage | 0.01635 | |
| **Maintenance Facility at Wasilla** | | |
| Contract maintenance of shop | | 75,000 |
| Supplies (cleaning and repair) | | 5,000 |
| Utilities (heated building) | | 50,000 |
| Total | | **130,000** |
| **Station Services** | | |
| *Contracted Services* | | |
| Custodian Services | | 75,000 |
| Revenue Services | | 75,000 |
| Telephonic Info. Services Shared with People Mover / MASCOT | | 5,000 |
| Total | | 155,000 |
| *Other* | | |
| Materials and Supplies | | 10,000 |
| Utilities | | 20,000 |
| Communications charges | | 10,000 |
| Total | | 40,000 |
| Total station services | | **195,000** |
| *Assumptions* | | |
| Number of Stations | 5 | |
| Materials and Supplies per Station | 2,000 | |
| Utilities per Station | 4,000 | |
| Communications charges estimate | 2,000 | |

| | | | |
|---|---|---|---|
| **Insurance and Claims** | | | **800,000** |
| *Assumptions* | | | |
| Liability insurance | 600,000 | | |
| Property and comprehensive protection | 100,000 | | |
| Non insured passenger/workers compensation | 100,000 | | |
| Self insurance retention | | | |
| **General and Administrative** | | | |
| *Labor* | | | |
| General Manager-Regular | 100,000 | 1 | 100,000 |
| General Manager-Fringes | 35,000 | 1 | 35,000 |
| Controller-Regular | 80,000 | 1 | 80,000 |
| Controller-Fringes | 28,000 | 1 | 28,000 |
| Accounting Clerk-Regular | 41,600 | 1 | 41,600 |
| Accounting Clerk-Fringe | 14,560 | 1 | 14,560 |
| Administrative assistant-Regular | 20,800 | 1 | 20,800 |
| Administrative assistant-Fringes | 7,280 | 1 | 7,280 |
| Total | | | 327,240 |
| *Other* | | | |
| Contract legal, accounting and consulting services | | | 48,000 |
| Contract marketing services | | | 48,000 |
| Automotive | | | 67,200 |
| Telecommunications | | | 9,600 |
| Telephone equipment rental | | | 6,000 |
| PC rentals | | | 6,000 |
| Copier | | | 6,000 |
| Office supplies | | | 2,400 |
| Travel and meetings | | | 3,000 |
| Office lease | | | 28,800 |
| ARRC contract manager-Regular | | | 45,000 |
| ARRC contract manager-Fringes | | | 19,350 |
| Transportation and maintenance contingency | | | 92,109 |
| Total | | | 381,459 |
| Total general and administrative | | | **708,699** |

| *Assumptions* | |
|---|---|
| Fringes | 35% |
| Legal, accounting and consulting fees per month | 4,000 |
| Advertising per month | 4,000 |
| Auto / pickup truck expense per month ($1000/car; $1800/pickup) | 5,600 |
| Telecommunications per month | 800 |
| Phone equipment per month | 500 |
| Personal computers | 5 |
| PC rental per month | 100 |
| Copiers | 1 |
| Copier rental per month | 500 |
| Office supplies per month | 200 |
| Payroll service per month | 160 |
| Postage and express per month | 100 |
| Coffee and water per month | 25 |
| Subscriptions per month | 25 |
| Travel and meetings per month | 250 |
| Office lease per month (includes janitorial services) | 2,400 |
| Contingency percentage of total contracted labor | 10% |
| Contractor general manager (ARRC) | 45,000 |
| Contractor fringes | 43% |

| | |
|---|---|
| Total O&M Costs | **2,799,350** |

Summary of Operating Costs

| Cost Category | Estimate | Percent |
|---|---|---|
| Transportation | 559,031 | 20% |
| Maintenance of Equipment | 273,000 | 10% |
| Fuel | 108,108 | 4% |
| Maintenance of Way | 25,512 | 1% |
| Facility Maintenance | 130,000 | 5% |
| Station Services | 195,000 | 7% |
| Insurance | 800,000 | 29% |
| General and Administrative | 708,699 | 25% |
| Total | 2,799,350 | 100% |

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# Appendix F
# CAPITAL IMPROVEMENTS

This appendix includes spreadsheet calculations of capital costs for stations, the Wasilla car shop, an overnighting facility in Girdwood, and right-of-way improvements south of Anchorage to lower travel times between Girdwood and Anchorage to a more car competitive 57 minutes.

Schematic designs of three station types having capacities of 150, 100 and 50 persons are also included.

Table F-1
Station Cost Estimate

**Stations for Wasilla-only and Full Corridor Services**

| Station Location | Facility Capacity | Parking Capacity | Access Road | Platform | Ticket Machines | Total Building | Parking Lot | ROW Costs | Landscaping | Misc. Costs | Site Costs | Cost per ft$^2$ | Contingency | Engineering | Construction | Total Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wasilla** | 150 | 300 | $0 | $104,070 | $260,000 | $157,905 | $261,417 | $0 | $94,130 | $2,500 | $1,037,927 | $10 | $259,482 | $194,611.23 | $129,741 | $1,621,770 |
| **Matanuska** | 100 | 100 | $9,444 | $102,690 | $130,000 | $119,625 | $114,476 | $24,000 | $61,986 | $2,500 | $684,346 | $9 | $171,086 | $128,314.80 | $85,543 | $1,069,299 |
| **Eagle River** | 50 | 50 | $14,165 | $99,990 | $130,000 | $76,560 | $66,525 | $36,000 | $49,980 | $242,480 | $792,260 | $18 | $198,065 | $148,548.78 | $99,033 | $1,237,924 |
| **Elmendorf** | 50 | 50 | $9,444 | $99,990 | $130,000 | $76,560 | $66,525 | $24,000 | $48,308 | $2,500 | $533,886 | $12 | $133,472 | $100,103.67 | $66,736 | $834,209 |
| **Anchorage** | 0 | 0 | $0 | $0 | $260,000 | $0 | $0 | $0 | $0 | $5,000 | $265,000 | $0 | $0 | $0.00 | $0 | $265,000 |
| **Spenard** | 50 | 50 | $0 | $99,990 | $130,000 | $76,560 | $66,525 | $85,968 | $53,560 | $2,500 | $591,663 | $13 | $147,916 | $110,936.84 | $73,958 | $924,487 |
| **Dimond** | 50 | NA | $0 | $105,990 | $130,000 | $76,560 | $0 | $0 | $38,911 | $178,611 | $606,632 | $13 | $151,658 | $113,743.47 | $75,829 | $947,876 |
| **Girdwood** | 50 | 50 | $9,444 | $99,990 | $130,000 | $76,560 | $66,525 | $109,968 | $56,905 | $2,500 | $628,451 | $14 | $157,113 | $117,834.57 | $78,556 | $981,969 |
| | | | | | | | | | | | $5,140,165 | | | | | $7,882,534 |

**Other Potential Stations**

| Station Location | Facility Capacity | Parking Capacity | Access Road | Platform | Ticket Machines | Total Building | Parking Lot | ROW Costs | $0 | Misc. Costs | Site Costs | Cost per ft$^2$ | Contingency | Engineering | Construction | Total Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Palmer** | 50 | NA | $0 | $99,990 | $130,000 | $76,560 | $0 | $0 | $38,311 | $2,500 | $423,921 | $9 | $105,980 | $79,485.19 | $52,990 | $662,386 |
| **Eklutna** | 50 | 50 | $9,444 | $99,990 | $130,000 | $76,560 | $66,525 | $109,968 | $56,905 | $2,500 | $628,451 | $14 | $157,113 | $117,834.57 | $78,556 | $981,969 |
| **Birchwood** | 50 | 50 | $11,804 | $99,990 | $130,000 | $76,560 | $66,525 | $115,968 | $57,741 | $2,500 | $637,648 | $14 | $159,412 | $119,559.00 | $79,706 | $996,339 |
| **Potter** | 50 | 50 | $0 | $99,990 | $130,000 | $76,560 | $66,525 | $85,968 | $53,560 | $2,500 | $591,663 | $13 | $147,916 | $110,936.84 | $73,958 | $924,487 |
| **Bird Creek** | 50 | 50 | $9,444 | $99,990 | $130,000 | $76,560 | $66,525 | $24,000 | $48,308 | $2,500 | $533,886 | $12 | $133,472 | $100,103.67 | $66,736 | $834,209 |
| **Indian** | 50 | 50 | $0 | $99,990 | $130,000 | $76,560 | $66,525 | $85,968 | $53,560 | $2,500 | $591,663 | $13 | $147,916 | $110,936.84 | $73,958 | $924,487 |
| | | | | | | | | | | | $3,407,233 | | | | | $5,323,876 |

**ASSUMPTIONS:**

There is 3 feet of excavation for parking and access roads.
There is 5 feet of excavation for parking and access roads for the Matanuska and Wasilla sites.
Excavation for the building footings is 5 feet.
Excavation for the building footings at the Matanuska and Wasilla sites is 7 feet.
Access roads and parking consist of 2" asphalt pavement, 6" of 3/4" crushed aggregate subbase, and 18" of 4" minimum base.
Imported material necessary to backfill below the subgrade will be non-frost susceptable (NFS) sand or gravel.
Platform costs include canopy.
Right of way acquired for roadway purposes is 60 feet wide.
Heating is 20% of building costs per site.
Lighting is 20% of building costs per site.
Seating is 5% of building costs per site.
Road improvements to Eagle River site, add one lane to existing road.
Security fencing along Eagle River access.
Parking includes bus lane, drop off lane, and through lane.
Contingency covers minor costs encountered at each site.
Where applicable monetary values were taken from Alaska Department of Transportation and Public Facilities' 1995-1999 Bid Tabulation Summaries.
There are no costs shown for the planned Anchorage multimodal facility.
Elevator and Stair access from station building to platform at Dimond
Miscellaneous costs include a wheel chair lift (for ADA compliance) and a secured area for storage

Table F-2
Wasilla Car Shop Estimate

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Building** | 250 | ft wide | 500 | ft long | ***Area (ft²)*** | 125000 | $12 | per ft² |
| **Building Slab** | 8 | in thick | | | | | $500 | per yd³ |
| **Building Footing** | 1 | ft wide | 4 | ft high | ***Area (ft²)*** | 4 | $500 | per yd³ |
| **Fenced Area** | 268 | ft wide | 550 | ft long | ***Area (ft²)*** | 147400 | $20 | per linear ft |
| **Rail bed ballast** | ***Avg. depth (ft)*** | 1.25 | ***Avg. width (ft)*** | 12.5 | ***End Area (ft²)*** | 15.625 | $20 | per ton |
| **Rail bed sub-ballast** | ***Avg. depth (ft)*** | 1 | ***Avg. width (ft)*** | 17 | ***End Area (ft²)*** | 17 | $20 | per ton |
| **Ballast** | | | **Density** | 130 | lb/ft³ | | | |
| **Trackwork** | | | | | | | $124 | per ft |
| **Rail bed Excavation** | 30 | ft wide per spur | | | | | | |
| **Asphalt** | 2 | in thick | **Density** | 150 | lb/ft³ | | $22 | per ton |
| **Base** | 6 | in thick | **Density** | 145 | lb/ft³ | | $10 | per ton |
| **Subbase** | 18 | in thick | **Density** | 140 | lb/ft³ | | $7 | per ton |
| **Excavation** | | | | | | | $6 | per yd³ |
| **NFS** | | | | | | | $6 | per yd³ |

**Wasilla**

| | | | | |
|---|---|---|---|---|
| Excavation (ft) | 5 | ft below existing ground surface in fenced area and rail spur area | | |
| Facility track combined | 1 | track @ | 4,400 | ft long |

| **Cost estimate** | **Wasilla** |
|---|---|
| **Building** | $175,000 |
| **Building Foundation** | $1,674,321 |
| **Excavation** | $332,854 |
| **Asphalt** | $42,047.50 |
| **Base** | $55,970.00 |
| **Subbase** | $113,484 |
| **NFS** | $424,274 |
| **Fencing** | $32,720 |
| **New Rail Bed (Ballast)** | $186,615 |
| **Trackwork (Rail and ties)** | $545,600 |
| **Switches** | $60,000 |
| **Shop Machinery** | $250,000 |
| **Generator** | $7,500 |
| **Electrical (20%)** | $716,577 |
| **Heating (20%)** | $716,577 |
| **Sanitary Amenities** | $10,000 |
| **Land Acquisition** | $487,000 |
| **Fueling Facility** | $50,000 |
| **Access Road Construction** | $63,000 |
| **Contingency (30%)** | $1,170,116 |
| **Engineering (15%)** | $712,950 |
| **Construction (15%)** | $712,950 |
| | $8,539,557 |

**Assumptions:**

Base material is 3/4" gravel
Subbase material is 4" pit run gravel
NFS is non-frost susceptible sand or gravel
Building is pre-fabricated
Fencing is chain link
Builidng foundatons are spread footings with stem walls
Concrete slab for building floor included in foundation
Maintenance access to rail is asphalt
Area inside fence and outside of building is asphalt
Wasilla building is wide enough to accommodate three tracks

Land Acquisition based on review of current sales in Girdwood
Wasila (Houston/Willow area) assumed 65% of Girdwood
Fueling Facility Cost Based on Harding-ESE experience
Assume length of access road is 300 feet
Use $210/foot of access road for construction
Assume site soils consist of silts w/organics.

Table F-3
Girdwood Overnighting Facility Estimate
Unenclosed Railcar Storage

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Building** | 24 | ft wide | 24 | ft long | ***Area (ft²)*** | 576 | $25 | per ft² |
| **Building Slab** | 8 | in thick | | | | | $500 | per yd³ |
| **Building Footing** | 1 | ft wide | 4 | ft high | ***Area (ft²)*** | 4 | $500 | per yd³ |
| **Fenced Area** | 52 | ft wide | 32 | ft long | ***Area (ft²)*** | 1664 | $20 | per linear ft |
| **Rail bed ballast** | ***Avg. depth (ft)*** | 1.25 | ***Avg. width (ft)*** | 12.5 | ***End Area (ft²)*** | 15.625 | $20 | per ton |
| **Rail bed sub-ballast** | ***Avg. depth (ft)*** | 1 | ***Avg. width (ft)*** | 17 | ***End Area (ft²)*** | 17 | $20 | per ton |
| **Ballast** | | | **Density** | 130 | lb/ft³ | | | |
| **Trackwork** | | | | | | | $124 | per ft |
| **Rail bed Excavation** | 30 | ft wide per spur | | | | | | |
| **Asphalt** | 2 | in thick | **Density** | 150 | lb/ft³ | | $22 | per ton |
| **Base** | 6 | in thick | **Density** | 145 | lb/ft³ | | $10 | per ton |
| **Subbase** | 18 | in thick | **Density** | 140 | lb/ft³ | | $7 | per ton |
| **Excavation** | | | | | | | $6 | per yd³ |
| **NFS** | | | | | | | $6 | per yd³ |

**Girdwood**

| | | | | |
|---|---|---|---|---|
| Excavation (ft) | 3 | ft below existing ground surface in fenced area and rail spur area | | |
| Facility track | 1 | track@ | 275 | ft long |

| **Cost estimate** | **Girdwood** |
|---|---|
| **Building** | $14,400 |
| **Building Foundation** | $14,222 |
| **Excavation** | $6,666 |
| **Asphalt** | $2,155.45 |
| **Base** | $3,385 |
| **Subbase** | $6,863 |
| **NFS** | $10,648 |
| **Fencing** | $3,360 |
| **New Rail Bed (Ballast)** | $11,663 |
| **Switch** | $10,000 |
| **Generator** | $7,500 |
| **Trackwork (Rail and ties)** | $34,100 |
| **Land Acquistion** | $35,000 |
| **Contingency (30%)** | 37,489 |
| **Engineering (15%)** | $24,368 |
| **Construction (15%)** | $24,368 |
| | $246,189 |

**Assumptions:**
Base material is 3/4" gravel
Subbase material is 4" pit run gravel
NFS is non-frost susceptible sand or gravel
Building is pre-fabricated
Fencing is chain link
Builidng foundatons are spread footings with stem walls
Concrete slab for building floor included in foundation
Maintenance access to rail is asphalt

Table F-4
Overnighting Facility Estimate
Enclosed Car Storage

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Building** | | 30 | ft wide | 300 | ft long | ***Area (ft²)*** | 9000 | $12 | per ft² |
| **Building Slab** | | 8 | in thick | | | | | $500 | per yd³ |
| **Building Footing** | | 1 | ft wide | 4 | ft high | ***Area (ft²)*** | 4 | $500 | per yd³ |
| **Fenced Area** | | 48 | ft wide | 350 | ft long | ***Area (ft²)*** | 16800 | $20 | per linear ft |
| **Rail bed ballast** | ***Avg. depth (ft)*** | 1.25 | ***Avg. width (ft)*** | 12.5 | | ***nd Area (ft²)*** | 15.63 | $20 | per ton |
| **Rail bed sub-ballast** | ***Avg. depth (ft)*** | 1 | ***Avg. width (ft)*** | 17 | | ***nd Area (ft²)*** | 17 | $20 | per ton |
| **Ballast** | | | | **Density** | 130 | lb/ft³ | | | |
| **Trackwork** | | | | | | | | $124 | per ft |
| **Rail bed Excavation** | | 30 | ft wide per spur | | | | | | |
| **Asphalt** | | 2 | in thick | **Density** | 150 | lb/ft³ | | $22 | per ton |
| **Base** | | 6 | in thick | **Density** | 145 | lb/ft³ | | $10 | per ton |
| **Subbase** | | 18 | in thick | **Density** | 140 | lb/ft³ | | $7 | per ton |
| **Excavation** | | | | | | | | $6 | per yd³ |
| **NFS** | | | | | | | | $6 | per yd³ |

**Girdwood**

| | | | | |
|---|---|---|---|---|
| Excavation (ft) | 3 | ft below existing ground surface in fenced area and rail spur area | | |
| Facility track | 1 | track @ | 275 | ft long |

| **Cost estimate** | **Girdwood** |
|---|---|
| **Building** | $108,000 |
| **Building Foundation** | $120,000 |
| **Excavation** | $16,966 |
| **Asphalt** | $4,001.25 |
| **Base** | $5,818 |
| **Subbase** | $11,797 |
| **NFS** | $26,906 |
| **Fencing** | $15,920 |
| **New Rail Bed (Ballast)** | $11,663 |
| **Switch** | $10,000 |
| **Generator** | $7,500 |
| **Trackwork (Rail and ties)** | $34,100 |
| **Electrical (20%)** | $74,534 |
| **Heating (20%)** | $74,534 |
| **Sanitary Amenities** | $10,000 |
| **Land Acquisition** | $35,000 |
| **Contingency (30%)** | 111,801 |
| **Engineering (15%)** | $72,671 |
| **Construction (15%)** | $72,671 |
| | $823,883 |

**Assumptions:**

Base material is 3/4" gravel
Subbase material is 4" pit run gravel
NFS is non-frost susceptible sand or gravel
Building is pre-fabricated
Fencing is chain link
Builidng foundatons are spread footings with stem walls
Concrete slab for building floor included in foundation
Maintenance access to rail is asphalt
Area inside fence and outside of building is asphalt
Wasilla building is wide enough to accommodate both spurs

Table F-5
Rail Construction Estimate

| MP from | to | Distance (ft) | Cost | |
|---|---|---|---|---|
| 74 | 74.8 | 4266 | $947,186 | |
| 74.8 | 75 | 1067 | $236,907 | |
| 75 | 76 | 5415 | $1,202,300 | |
| 76 | 77 | 5220 | $1,159,004 | |
| 77 | 77.9 | 4729 | $1,049,986 | |
| 77.9 | 78.5 | 2879 | $639,228 | |
| 78.5 | 79 | 2354 | $522,662 | |
| 79 | 79.3 | 1585 | $351,920 | |
| 79.3 | 80 | 3699 | $821,294 | |
| 80 | 81 | 5288 | $1,174,102 | |
| 81 | 81.05 | 253 | $56,085 | ** |
| 81.05 | 81.7 | 3284 | $729,107 | ** |
| 81.7 | 82 | 1516 | $336,511 | ** |
| 82 | 82.3 | 1500 | $333,047 | ** |
| 82 | 83 | 3536 | $785,103 | |
| 83 | 84 | 5612 | $1,246,040 | |
| 84 | 84.1 | 513 | $113,813 | |
| 84.1 | 84.3 | 1025 | $227,627 | |
| 84.3 | 85 | 3588 | $796,693 | |
| 85 | 85.75 | 4179 | $927,869 | |
| 85.75 | 86 | 1393 | $309,290 | |
| 86 | 87 | 4978 | $1,105,272 | |
| 87 | 88 | 5456 | $1,211,403 | |
| 88 | 88.25 | 1292 | $286,809 | |
| 88.25 | 89 | 3875 | $860,427 | |
| 89 | 90 | 4779 | $1,061,088 | |
| 90 | 91 | 5917 | $1,313,760 | |
| 91 | 92 | 5265 | $1,168,995 | |
| 92 | 93 | 5486 | $1,218,064 | |
| 93 | 93.25 | 1273 | $282,590 | |
| 93.25 | 93.75 | 2546 | $565,181 | |
| 93.75 | 94 | 1273 | $282,590 | |
| 94 | 95 | 5181 | $1,150,345 | |
| 95 | 96 | 5282 | $1,172,770 | |
| 96 | 97 | 5245 | $1,164,555 | |
| 97 | 98 | 5269 | $1,169,883 | |
| 98 | 99 | 5320 | $1,181,207 | |
| 99 | 100 | 5184 | $1,151,011 | |
| 100 | 101 | 4366 | $969,389 | |
| 101 | 102 | 5280 | $1,172,326 | ** |
| 102 | 103 | 5166 | $1,147,014 | ** |
| 103 | 104 | 5248 | $1,165,221 | ** |
| 104 | 105 | 5177 | $1,149,457 | ** |
| 105 | 105.5 | 2564 | $569,288 | ** |
| 105 | 106 | 2564 | $569,288 | ** |
| 106 | 106.75 | 3846 | $853,933 | ** |
| 106.75 | 107 | 1282 | $284,644 | ** |
| 107 | 108 | 6142 | $1,363,717 | ** |
| 108 | 108.75 | 3524 | $782,494 | ** |
| 108.75 | 109 | 1175 | $260,831 | ** |
| 109 | 110 | 5296 | $1,175,878 | ** |
| 110 | 111 | 5205 | $1,155,673 | ** |
| 111 | 112 | 5216 | $1,158,116 | ** |
| 112 | 113 | 5213 | $1,157,450 | ** |
| 113 | 113.5 | 2607 | $578,725 | ** |
| 113.5 | 113.9 | 2085 | $462,980 | ** |
| 113.9 | 114 | 521 | $115,745 | ** |
| 114 | 115 | 4810 | $1,067,971 | ** |

Base rail bed cost: $47,471,865 for 41 miles of track

Bird Cr. - Potter, riprap $8,279,885
Bird Cr. - Potter, embank. $11,642,400

| | Depth (ft) | Width (ft) | Area ($ft^2$) | Density ($vlb/ft^3$) | Unit Cost | Unit |
|---|---|---|---|---|---|---|
| **Rail bed ballast** | 1.25 | 12.5 | 15.625 | 130 | $20 | per ton |
| **Rail bed sub-ballast** | 1 | 17 | 17 | 130 | $20 | per ton |
| **Trackwork** | | | | | $124 | per ft |
| **Rail bed Excavation** | 3 | 28 | 84 | | $6 | per $yd^3$ |
| **Rock Excavation** | 2 | 28 | 56 | | $14 | per $yd^3$ |
| **Rip-Rap** | 37 | 4 | 148 | 106.5 | $16 | per ton |
| **Base** | 0.5 | 28 | 14 | 145 | $10 | per ton |
| **Subbase** | 1.5 | 28 | 42 | 140 | $7 | per ton |
| **NFS** | 1 | 28 | 28 | 140 | $6 | per $yd^3$ |
| **Common Embank.** | 13.5 | 49 | 661.5 | 130 | $7.50 | per $yd^3$ |

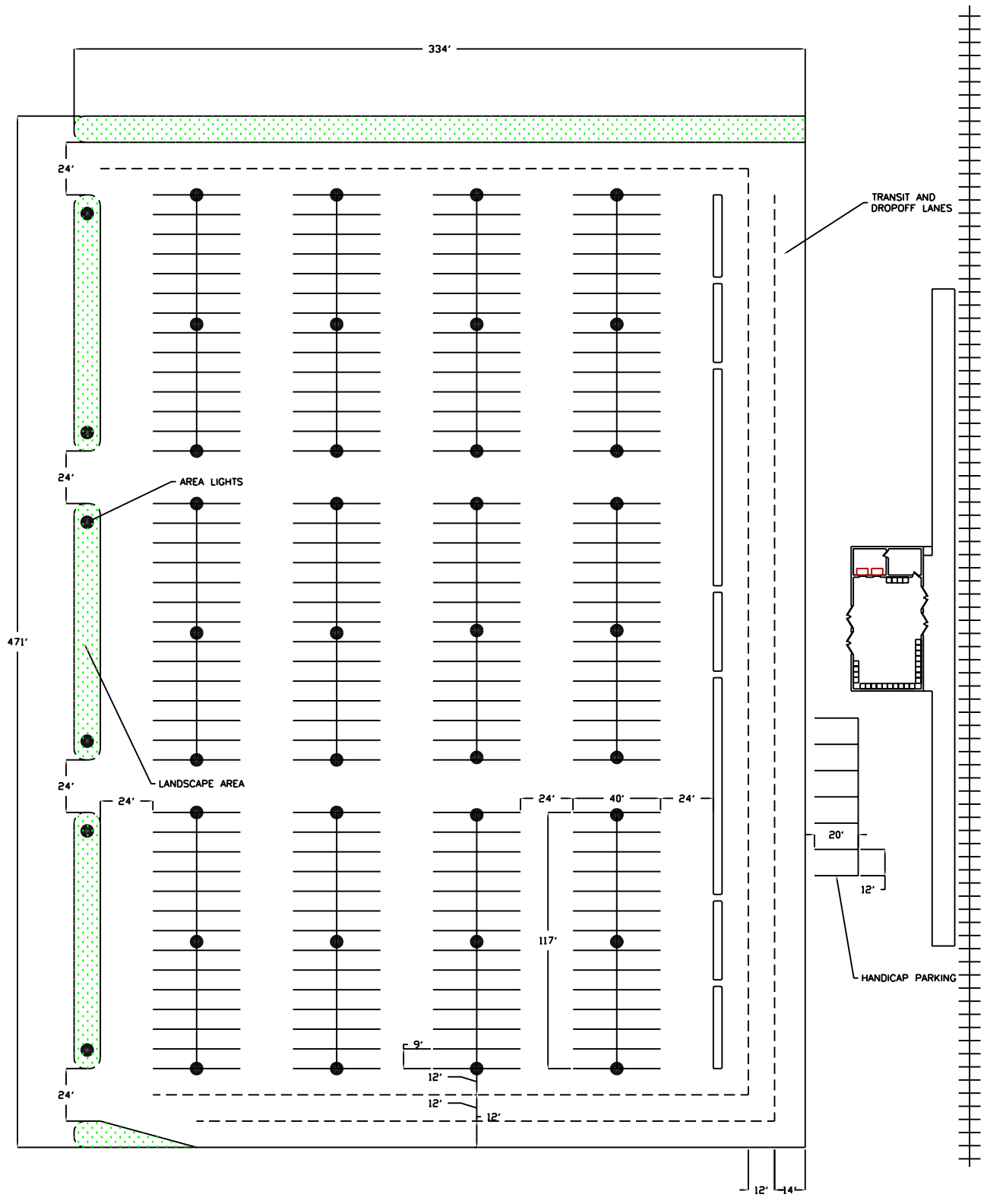
**Assumptions:**
Base material is 3/4" gravel
Subbase material is 4" pit run gravel
NFS is non-frost susceptible sand or gravel
37% voids on Class III Riprap
Rock Excavation will need to be added where applicable
Riprap will need to be added where applicable. Slopes 2h:1v

Rock Exc. @ 2.074 c.y./running ft. x 5,280 x 18 mi. x .3 = 59,136 c.y.; x $14 = $827,904
Riprap, Bird Creek to Potter: End area 148 s.f.; 148 cubic ft./running foot.
148 c.f./27 c.f per c.y. = 5.48 c.y. per running foot. Use 5.5 c.y. per running foot
on sections exposed to Turnagain Arm.
Figure Bird Point (ARR MP 82) to Potter (ARR MP 100) @ 18 miles. Figure 70% exposed.
5,280 ft./mi. x 18 mi. x.7 = 66,528 running feet of riprap section
x 5.5 c.y. per running foot = 365,904 c.y.
Assume Sp. G of rock at 2.75, rock at 172 lbs/c.f., 37% voids (per H. Smith, State Coastal Engr.)
172 lbs/c.f. x 0.63 = 108.4 lbs/c.f.; x 27 c.f./ c.y. = 2,927 lbs/cy, bulk in place, = 1.463 tons/ c.y.
completed in place bulk riprap.
1.463 tons/ c.y. x 365,904 c.y. =535,464 tons Class III Riprap.
$16/ton (Bird-Gird project@ $11/ton, plus 10%/yr x 5 yrs.) = $8,567,423

Common Embankment, Bird Creek to Potter:
Top of rail bed @ elev. 29.0'
O.G. mud flats @ elev. 12.5'
Figure 16.5' total embankment height. Bottom 13.5' is common embankment/shot rock waste.
Top of common embank. is 22' wide, bottom 76', average 49', depth 13.5'.
End area = 661.5 s.f., 661.5 c.f. per running foot. 661.5 c.f./27 c.f. per c.y = 24.5 c.y. per l.f.
24.5 c.y./l.f. x 66,528 l.f. as above = 1,629,936 c.y. c. emb.,- rock exc
Rock Exc. 59,136 c.y. x 1.25 for swell = 73,920 c.y.
1,629,936 c.y. c. embank - 73,920 = 1,556,016 c.y.@ $7.50/ c.y. = $11,670,120
$20,237,543 for extra dirt & rock work on Bird Creek to Potter Section.
25% contingency = $5,059,386
GIRDWOOD TO BIRD PT. & POTTER TO ANCH. = ~ $1.16 million/mile
BIRD PT. TO POTTER @ ~ $2.28 million/mile

*costs in millions
**NOT included, per comment under likely responsibility

| Milepost | distance | *cost/mile. | section *cost | likely responsibility | *cost to DOT&PF | *cost to Comtr. |
|---|---|---|---|---|---|---|
| ARR mp 74 - 81 | 7.00 | $1.16 | $8.12 | ARRC | | $8.12 |
| ARR mp 81 - 82.3 | 1.30 | $1.16 | **na | no change | $0 | $0 |
| ARR mp 82.3 - 83.85 | 1.55 | $2.28 | $3.53 | DOT&PF | $3.53 | |
| ARR mp 83.85 - 84.5 | 0.65 | $2.28 | $1.48 | DOT&PF | $1.48 | |
| ARR mp 84.5 - 88.1 | 3.60 | $2.28 | $8.21 | DOT&PF | $8.21 | |
| ARR mp 88.1 - 90.7 | 2.60 | $2.28 | $5.93 | ARRC | | $5.93 |
| ARR mp 90.7 - 101 | 10.30 | $2.28 | $23.48 | DOT&PF | $15.26 | $8.22 |
| ARR mp 101 - 105.5 | 4.50 | $1.16 | **na | no change | $0 | $0 |
| ARR mp 105.5 - 115 | 9.50 | $1.16 | **na | already underway | $0 | $0 |
| Subtotals: | 41.00 | | $50.76 | | $28.49 | $22.27 |
| Contingency, @ 25% | | | $12.69 | | $7.12 | $5.57 |
| Construction subtotal: | | | $63.45 | | $35.61 | $27.84 |
| Design Engineering, @ 10% | | | $6.35 | | $3.56 | $2.79 |
| Construction Engineering, @ 15% | | | $9.52 | | $5.34 | $4.18 |
| **Project Total:** | | | **$79.32** | | **$44.51** | **$34.81** |




# SITE PLAN – 150 PERSON CAPACITY

WASILLA SITE ONLY – 300 PARKING CAPACITY

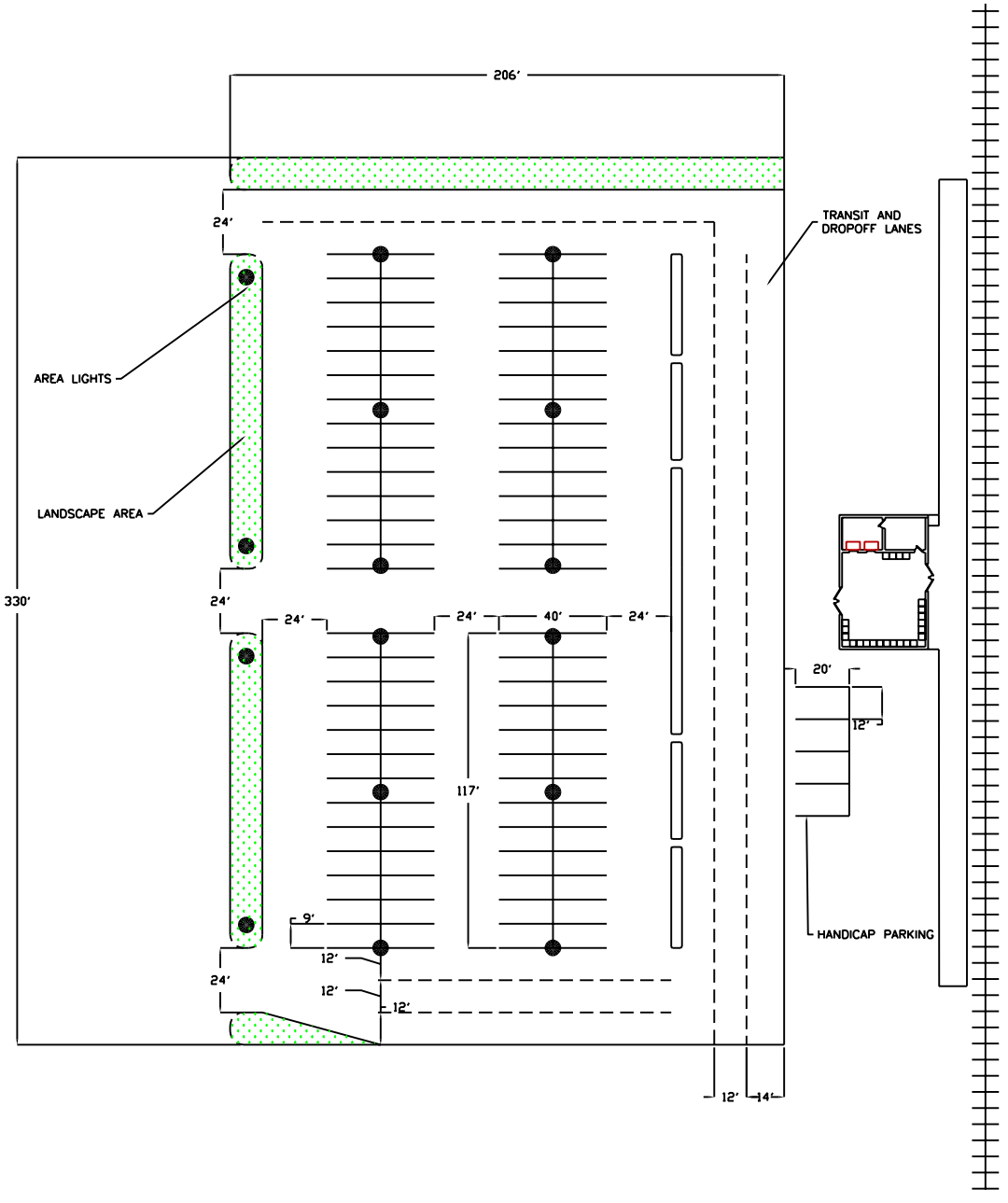
**Harding Lawson Associates**
Engineering and
Environmental Services

**South Central Commuter Rail Study**

PROTOTYPICAL 150 PASSENGER STATION
South Central Alaska

FIGURE
**F-1**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | FILE NAME |
|---|---|---|---|---|
| JC | 51126 | | 11/14/00 | Stations.dwg |




SITE PLAN – 100 PERSON CAPACITY

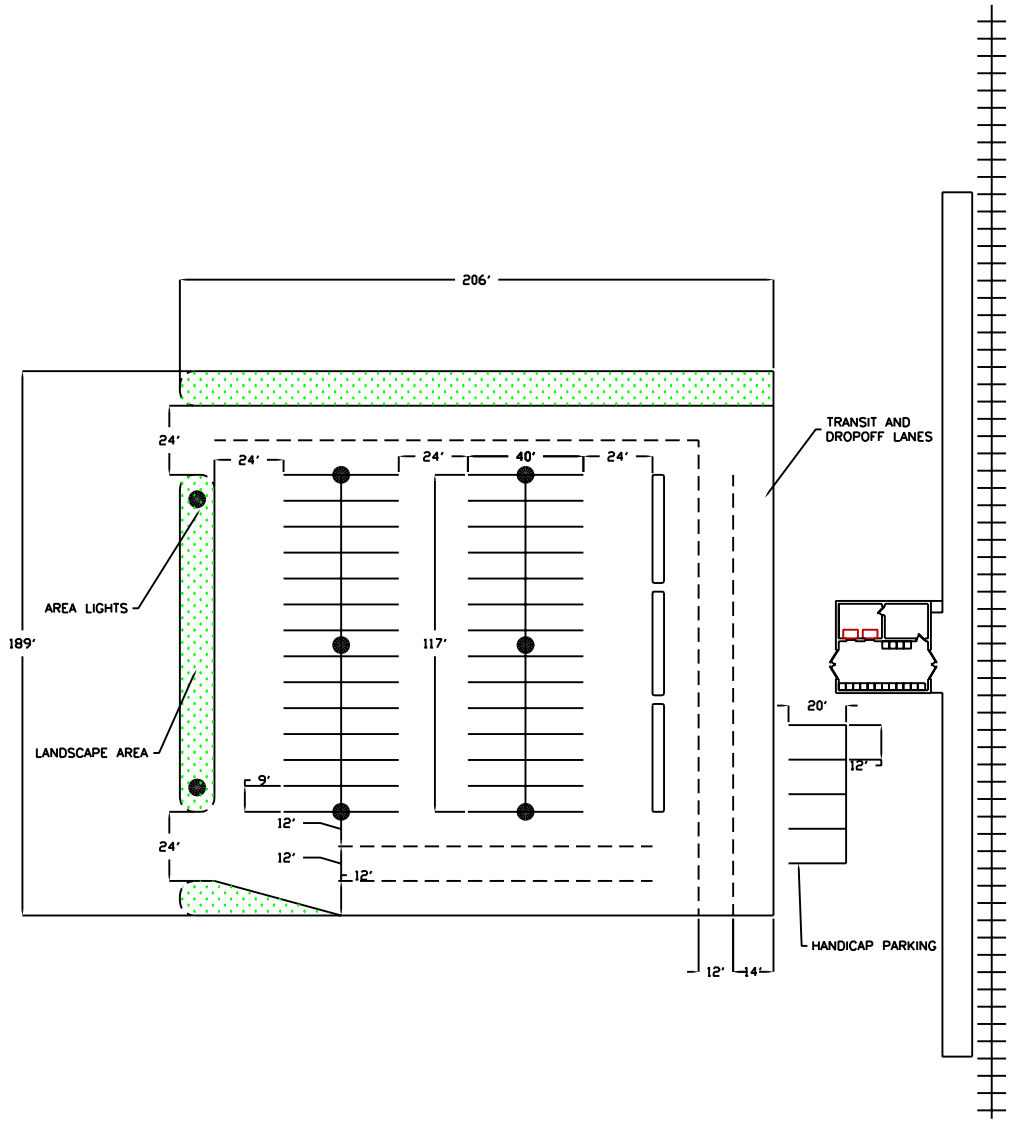
**Harding Lawson Associates**
Engineering and
Environmental Services

**South Central Commuter Rail Study**

Prototypical 100 Passenger Station
South Central Alaska

FIGURE
**F-2**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | FILE NAME |
|---|---|---|---|---|
| JC | 51126 | | 11/14/00 | Stations.dwg |




SITE PLAN – 50 PERSON CAPACITY

**Harding Lawson Associates**
Engineering and
Environmental Services

**South Central Commuter Rail Study**

Prototypical 50 Passenger Station
South Central Alaska

FIGURE
**F-3**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | FILE NAME |
|---|---|---|---|---|
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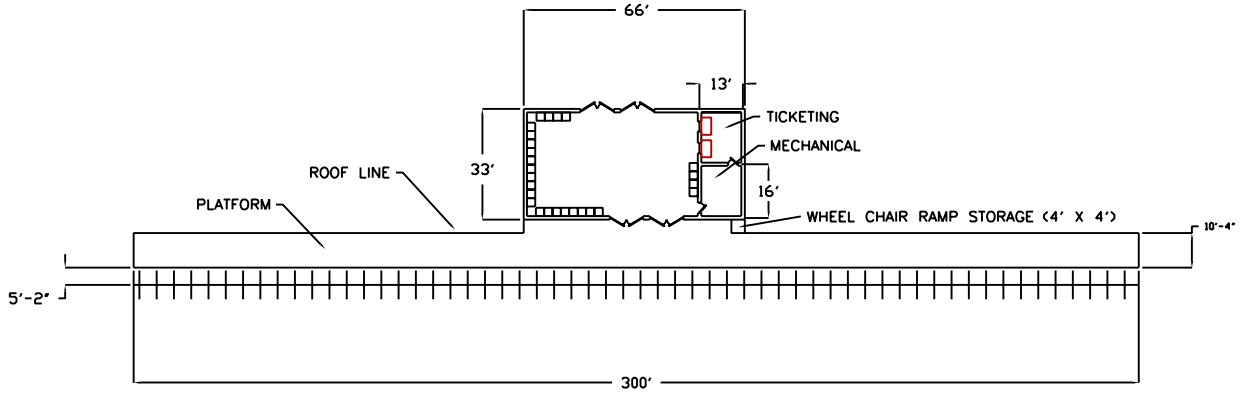
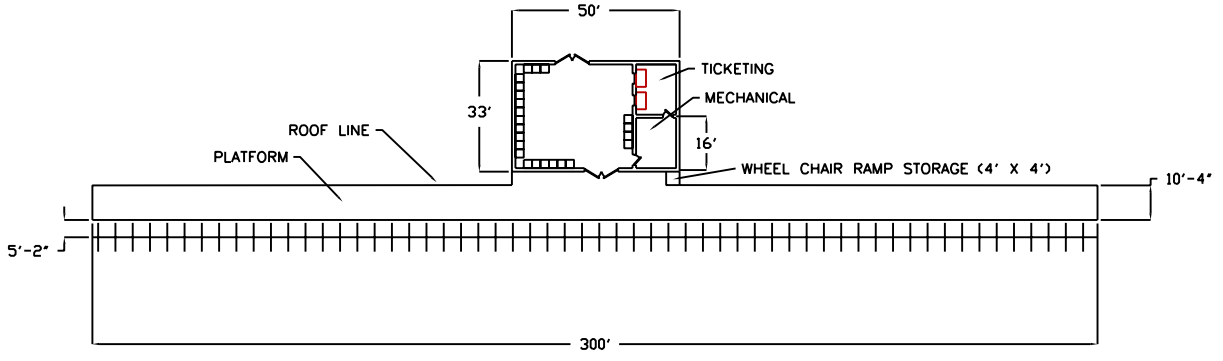



150 PASSENGER STATION




100 PASSENGER STATION

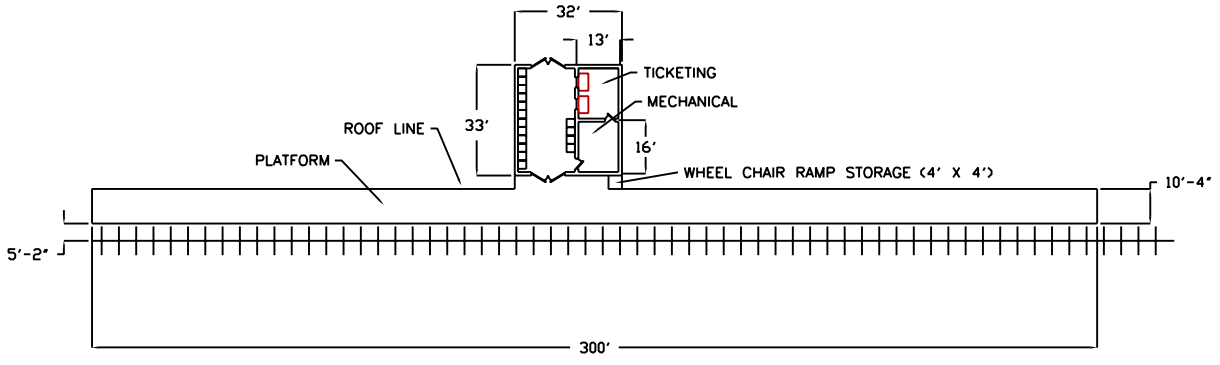
**Harding Lawson Associates**
Engineering and
Environmental Services

**South Central Commuter Rail Study**

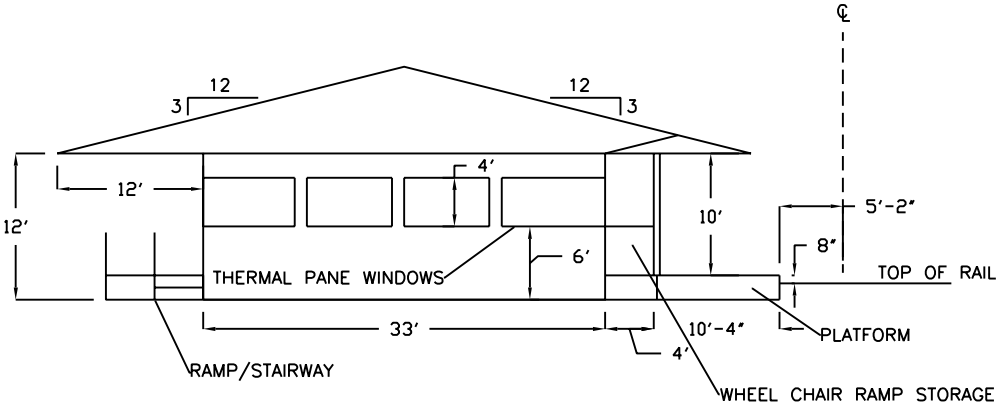
Typical Stations
South Central Alaska

FIGURE
**F-4**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | FILE NAME |
|---|---|---|---|---|
| JC | 51126 | | 11/14/00 | Stations.dwg |




50 PASSENGER STATION




TYPICAL BUILDING END ELEVATION

**Harding Lawson Associates**
Engineering and
Environmental Services

**South Central Commuter Rail Study**

Typical Stations
South Central Alaska

FIGURE
**F-5**

| DRAWN | PROJECT NUMBER | APPROVED | DATE | FILE NAME |
|---|---|---|---|---|
| JC | 51126 | | 11/14/00 | Stations.dwg |

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# Appendix G
# ALASKA LAW / MULTI-JURISDICTIONAL AGENCY

The following excerpts from the state statutes appear to allow for the formation of a multi-jurisdictional agency for the management and oversight of an Anchorage area commuter rail service. The agency would consist of the municipalities of Anchorage, Wasilla, Palmer, the Mat-Su Borough and potentially the Alaska Department of Transportation and Public Facilities. Interpretation of the statutes by municipal, borough, and state legal counsels is needed to confirm that this observation is indeed the case. The statues are:

- Section 29.35.010 of the state statutes specifies, "All municipalities have the following general powers, subject to other provisions of the law: (13) to enter into an agreement, including an agreement for cooperative or joint administration of any function or power with a municipality, the state or the United States; …"

- According to Section 29.35.020 (a), "…the municipality may provide facilities for…transportation facilities…outside its boundaries and may regulate their use and operation to the extent that the jurisdiction in which they are located does not regulate them."

- According to Section 29.35.020 (b), "A municipality may adopt an ordinance to exercise a power authorized by this subsection and may enforce the ordinance outside its boundaries. Before a power authorized by this subsection may be exercised inside the boundaries of another municipality, the approval of the other municipality must be given by ordinance."

- Section 29.35.210 (a) specifies, "A second class borough may by ordinance exercise the following powers on a nonareawide basis: (1) provide transportation systems; …"

- While commuter rail is not specifically cited as a function or power in the municipality- and borough-related statutes cited above, Section 29.35.400 specifies, "A liberal construction shall be given to all powers and functions of a municipality conferred in this title."

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