



Welcome!

Amtrak appreciates your interest in the *Pioneer* restoration study, and has developed this section of the website in order to enable key stakeholders with a method of reviewing the draft report.

By design, this study is a high-level overview of the opportunities, challenges, and estimated costs, associated with restoring the route. Ultimately, if a decision to restore service based on one of these options is chosen, Amtrak, along with its host railroad partners, would need to perform a much more thorough analysis to fully understand the myriad issues associated with restoration, such as specific station stops and schedules, essential host railroad capital improvements, specific consist requirements (cars and locomotives), etc. Altering any of these variables has the potential to change the draft study's stated capital and operating requirements. Consequently, this report should be viewed as a "*starting place*" for policy makers and others to engage in a meaningful discussion of the *Pioneer's* restoration.

We would appreciate knowing as soon as possible if you intend to submit comments on this report so that we can better anticipate the scope of comments we will be receiving. Formal comments about this draft study will be accepted until 5pm Pacific on October 1, 2009; these comments will be included in the final report that Amtrak submits to Congress as attachments. Please submit formal, written comments on DOT or Congressional letterhead, postmarked by October 1, 2009, to:

Jonathan Hutchison
Government Affairs Director – West
Amtrak
530 Water Street; 5th Floor
Oakland, CA 94607

Emailed letters may be sent to Mr. Hutchison at hutchij@amtrak.com by 5pm on October 1, 2009.

Thank you again for your interest in the *Pioneer*.

AMTRAK *PIONEER* ROUTE STUDY REPORT

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I. EXECUTIVE SUMMARY

A. Background

This report examines the feasibility of reinstating Amtrak's *Pioneer* route, which operated from 1977 to 1997 between Chicago, Illinois and Seattle, Washington via Denver, Colorado and Salt Lake City/Ogden, Utah. Amtrak was directed to perform this study by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) (Public Law 110-453), which reauthorized Amtrak and tasked Amtrak, the Federal government, states, and other rail stakeholders to improve intercity passenger rail service.

Section 224 of PRIIA requires Amtrak to undertake studies of reinstating the *Pioneer* route, and of reinstating or expanding service, or adding stops, on several other routes. Amtrak is to submit these studies to Congress by October 16, 2009.

B. Route History

When the *Pioneer* was established in June of 1977, it operated from Salt Lake City and Ogden to Seattle. At Ogden, Amtrak's *San Francisco Zephyr* provided connecting service to/from Denver and Chicago for *Pioneer* route passengers. In 1980-81, new bi-level Superliner equipment was placed in service on the *Pioneer*, which allowed the train to offer convenient "through car" service to Chicago via the *Zephyr* and eliminated the need for passengers to physically change trains in Ogden.

In 1983, the *San Francisco Zephyr* was renamed the *California Zephyr* and rerouted over the Denver and Rio Grande Western Railroad between Denver and Salt Lake City (Rio Grande Route). This shifted the *Pioneer-Zephyr* connection to Salt Lake City. In June 1991, after lengthening of the *California Zephyr* schedule made it impractical to maintain the Salt Lake City connection, Amtrak extended the *Pioneer* east from Ogden over the Union Pacific Railroad (UP) line through Wyoming (Overland Route) to connect with the *California Zephyr* in Denver.

In 1993, frequency of *Pioneer* service was reduced to tri-weekly due to reductions in Amtrak's Federal appropriation. Further reductions in Federal operating support resulted in the train's discontinuance in May 1997.

C. Route Options

Four route/endpoint options for service restoration are presented in this study.

Option 1 (Salt Lake City-Seattle Option): Salt Lake City to Seattle, with through Chicago–Seattle cars operating on the *California Zephyr* via the Rio Grande Route (now owned by Union Pacific) east of Salt Lake City.

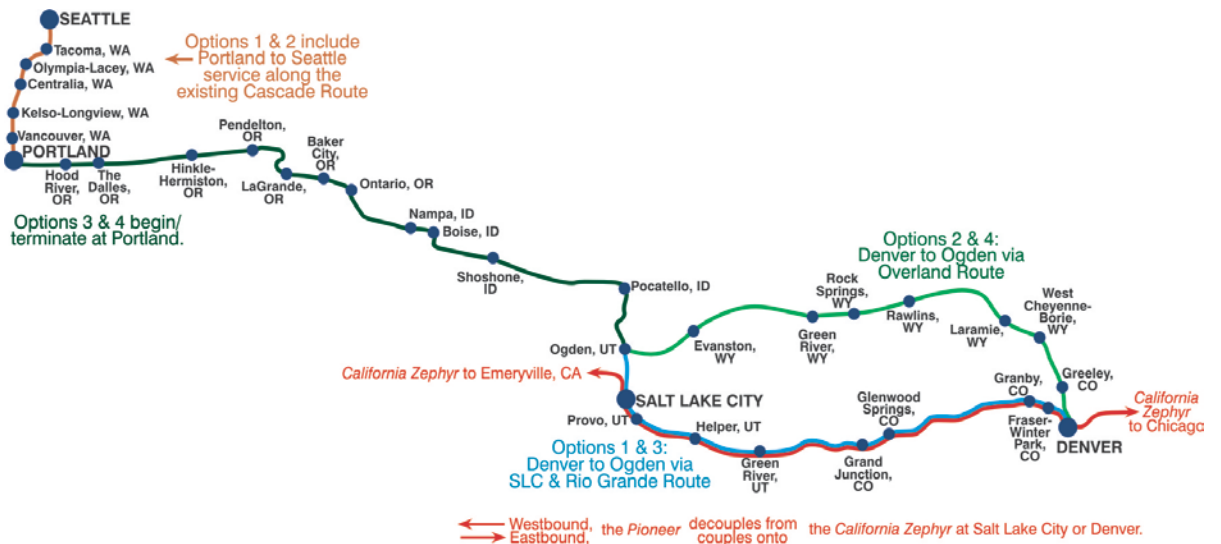
Option 2 (Denver-Seattle Option): Denver to Seattle via the UP Overland Route; through Chicago–Seattle cars exchanged with the *California Zephyr* in Denver.

Option 3 (Salt Lake City-Portland Option): Salt Lake City to Portland, with through Chicago–Portland cars operating on the *California Zephyr* via the UP Rio Grande Route east of Salt Lake City.

Option 4: (Denver-Portland Option): Denver to Portland via the UP Overland Route; through Chicago–Portland cars exchanged with the *California Zephyr* in Denver.

D. Route Map

Map of the *Pioneer* Route and Study Options



E. Operating Plan

For each of the four options, the report assumes that the reintroduced *Pioneer* would operate daily, and would be comprised of a locomotive and four Superliner cars: Coach, Coach/Baggage, Sleeper, and Diner/Lounge.

F. Ridership & Revenue

The factors that determine ridership and revenue include price, schedule, population, economic activity, and competition from other modes of travel. Using ridership/revenue models that incorporate relevant factors, Amtrak projects that the various *Pioneer* options would produce a net Amtrak ridership increase of between 82,000 and 111,000 passengers annually, with a corresponding increase in passenger revenue (including food and beverage revenue) of \$7.6 million to \$13.1 million annually. Ridership and revenue by option are as follows:

- Option 1 (Salt Lake City–Seattle Option): 102,000 passengers and \$11.6 million revenue
- Option 2 (Denver–Seattle Option): 111,000 passengers and \$13.1 million revenue
- Option 3 (Salt Lake City–Portland Option): 82,000 passengers and \$7.6 million revenue
- Option 4 (Denver–Portland Option): 95,000 passengers and \$9.2 million revenue

G. Financial Performance

Projected direct operating costs are:

- Option 1 (Salt Lake City–Seattle): \$36.6 million
- Option 2 (Denver–Seattle): \$46.2 million
- Option 3 (Salt Lake City–Portland): \$35.9 million
- Option 4 (Denver–Portland): \$44.7 million

These expenses are comprised primarily of labor costs for train and engine crews and on-board service (OBS) employees, fuel, and mechanical costs.

The projected direct operating loss (revenue minus direct operating costs) is:

- Option 1 (Salt Lake City–Seattle): \$25.0 million
- Option 2 (Denver–Seattle): \$33.1 million
- Option 3 (Salt Lake City–Portland): \$28.3 million
- Option 4 (Denver–Portland): \$35.5 million

H. Implementation/Capital Costs

The reintroduction of the *Pioneer* would require significant capital/mobilization expenditures for infrastructure improvements, new equipment, station restoration, and employee training and qualifying.

UP, which owns all but a small portion of the *Pioneer's* route between Denver/Salt Lake City and Portland, provided Amtrak with an initial analysis of capacity improvements, track upgrades and connection restorations that UP deemed necessary to accommodate the *Pioneer's* operation. The analysis was based upon capacity modeling on a portion of the route, utilizing assumptions developed by UP, and judgments of UP planners with regard to the remainder of the route.

UP's initial analysis identified \$199 million in proposed infrastructure investments if *Pioneer* service is restored between Salt Lake City and Portland, and a total of \$309 million in investments if the *Pioneer* operates via the Overland Route between Denver and Portland. Amtrak and UP agreed that UP's analysis should be deemed preliminary, and it is not binding on either party. If a decision is made to reinstitute the *Pioneer*, Amtrak and UP would need to conduct further collaborative analyses, including capacity modeling and simulation of the entire route, and negotiate an agreed-upon level of investments.

A projected \$13.5 million in additional capital investments would be required to directly serve the city of Boise, Idaho via the "Boise Cutoff." Potential capacity investment requirements on two line segments over which a restored *Pioneer* might operate have not been quantified. On the Portland-to-Seattle line owned by BNSF Railway, capacity requirements would depend upon the level of state-funded *Cascades* service and investments at the time of *Pioneer* restoration, and no investments should be required if the *Pioneer* replaces an existing frequency. On the segment of the Rio Grande Route between Salt Lake City and Ogden, any capacity requirements would depend upon which of the two alternate routes owned by UP and the Utah Transit Authority (UTA) is selected.

Regarding stations, if the *Pioneer* serves the same communities as it did before its 1997 discontinuance, restoration of service via the Rio Grande Route is projected to require investments of \$9.5 million to \$10.3 million at the twelve intermediate stations between Salt Lake City and Portland for state of good repair work and ADA requirements. Total expenditures of \$16.1 million for 19 stations (including seven additional stations between Denver and Ogden) are projected if the *Pioneer* operates via the Overland Route.

Reinstatement of daily *Pioneer* service would require a total of four to six locomotives and 23 to 26 Superliner cars, depending upon the option selected. Most or all of this equipment would have to be purchased new, at a projected cost of \$141 million for Option 1 (Salt Lake City–Seattle), \$123 million for Option 2 (Denver–Seattle), and \$138 million for Options 3 or 4 (Salt Lake City–Portland or Denver–Portland).

Pioneer restoration would also require one-time expenditures for employee training and for qualifying train and engine crews over the selected route. These costs are estimated at approximately \$4.9 million for Option 1 (Salt Lake City–Seattle); \$6.6 million for Options 2 (Denver–Seattle) and 4 (Denver–Portland); and \$4.5 million for Option 3 (Salt Lake City–Portland).

In total, the identified capital and mobilization costs are as follows:

- Option 1 (Salt Lake City–Seattle): \$382 million
- Option 2 (Denver–Salt Lake City): \$478 million
- Option 3 (Salt Lake City–Portland): \$379 million
- Option 4 (Denver–Portland): \$493 million

The actual capital costs of service restoration are subject to significant uncertainty for the reasons noted above.

I. Financial Summary and Key Metrics

The relative ridership and financial performance of the four options can be summarized as follows:

- **Option 1 (Salt Lake City to Seattle via the Rio Grande Route)** has higher ridership, lower operating costs, the lowest subsidy requirement, and the highest farebox recovery.
- **Option 2 (Denver to Seattle via the Overland Route/Wyoming)** has the highest ridership, highest operating costs, a higher subsidy requirement, and a moderate farebox recovery.
- **Option 3 (Salt Lake City to Portland via the Rio Grande Route)** has the lowest ridership, lowest operating costs, a lower subsidy requirement, and lower farebox recovery.
- **Option 4 (Denver to Portland via the Overland Route/Wyoming)** has lower ridership, higher operating costs, the highest subsidy requirement, and the lowest farebox recovery.

Below is a summary of the key projected financial and performance metrics for the four options:

Projected Performance (dollar figures are in millions)	Option 1 (Salt Lake City to Seattle)	Option 2 (Denver to Seattle)	Option 3 (Salt Lake City to Portland)	Option 4 (Denver to Portland)
Capital/Implementation Costs	\$373.9	\$469.8	\$370.5	\$484.8
Passenger Revenue	\$11.6	\$13.1	\$7.6	\$9.2
Direct Costs	\$36.6	\$46.2	\$35.9	\$44.7
Direct Operating Contribution/(Loss)	(\$25.0)	(\$33.1)	(\$28.3)	(\$35.5)
Farebox Recovery	31.7%	28.4%	21.2%	20.6%
Annual Ridership	102,000	111,000	82,000	95,000
Passenger Miles/Train Mile	131	100	103	77

The projected farebox recoveries for the various *Pioneer* options are significantly lower than the average farebox recovery for Amtrak long distance trains in FY2008 (51.8%). Farebox recovery for the two Seattle options (Options 1 and 2) is lower than on all but one of Amtrak’s 15 existing long distance routes, and the Portland options have a lower farebox recovery than any Amtrak long distance route.

J. Public Benefits

The reintroduction of the *Pioneer* would strengthen the nation’s passenger rail system by enhancing network connectivity and providing direct service between the Intermountain West and the Pacific Northwest. It would restore passenger rail service to communities whose already limited public transportation options have diminished since the *Pioneer’s* discontinuance twelve years ago due to cutbacks in intercity bus and rural air service. The *Pioneer* service would also provide environmental and energy efficiency benefits. Rail passenger service is 17% more energy efficient than air travel and 21% more energy efficient than auto travel, and emits several times less carbon dioxide per passenger mile than either of these modes.

Economic benefits attributable to restoration of *Pioneer* service would include short term increases in manufacturing and construction jobs driven by initial capital investments. The permanent Amtrak jobs created to operate the service, increased food and lodging expenditures due to vacation travel, and Amtrak purchases of goods and services, would produce long term economic benefits throughout the region.

K. Timeline

Of the many actions that would have to be taken before reinstatement of *Pioneer* service, the one with the longest identified projected lead time is the design, procurement and construction of new Superliner bi-level passenger rail cars. This would require approximately four years from the date on which funding is made available.

L. Conclusion and Next Steps

Restoration of the *Pioneer* would enhance Amtrak's route network and produce public benefits, but would require significant expenditures for initial capital costs and ongoing operating costs not covered by farebox revenues. While PRIIA recognizes the importance of Amtrak's existing long distance routes, it does not provide funding for capital or operating expenses associated with expanding service beyond current levels. Amtrak supports strengthening and improving the national network of long distance trains but will need significant additional funding to expand operations beyond today's current services.

Thus, Amtrak recommends that federal and state policymakers determine if intercity passenger rail service along the former *Pioneer* route should be reintroduced and, if so, that they identify the preferred option for service restoration and provide the required levels of capital and operating funding to Amtrak. Upon such a decision, Amtrak will aggressively work with Federal and state partners to restore the *Pioneer* service.

II. INTRODUCTION

A. Purpose of the Report

The Passenger Rail Investment and Improvement Act of 2008 (PRIIA)(Public Law 110-453), enacted on October 16, 2008, reauthorized Amtrak and gave Amtrak, the Federal government, states, and other rail stakeholders a mandate to improve intercity passenger rail service. Section 224 of PRIIA directs Amtrak to conduct studies of reinstating service, expanding service, or adding stops on various routes.

Among these routes is the former *Pioneer* route between Seattle and Chicago that Amtrak operated from 1977 to 1997. Section 224 directs Amtrak to determine the feasibility of restoring passenger rail service along the *Pioneer* route or along segments of the route. Amtrak must complete these studies “within 1 year after the date of enactment of this Act.”

This report fulfills the requirements of Section 224 with respect to the *Pioneer* route. It identifies the potential ridership, revenue, operating costs and capital expenditures required for restoration of the *Pioneer* as a daily service for four routing options that encompass all or portions of the route the *Pioneer* served prior to its 1997 discontinuance. Under these options, the *Pioneer* would originate at either Denver or Salt Lake City, and would terminate at either Seattle or Portland (with connecting Amtrak service to Seattle). In all cases, the *Pioneer* would connect with Amtrak’s *California Zephyr*, either in Denver or Salt Lake City, and provide through coach and sleeping car service from Chicago to Seattle or Portland.

This study was performed with the assistance of and with input from key stakeholders, most notably representatives from the Federal Congressional delegation for the states of Colorado, Wyoming, Utah, Idaho, Oregon, and Washington; Departments of Transportation from these states; the City of Boise; and planning and operating staff from the Union Pacific Railroad (UP). Amtrak’s public outreach efforts to these and other stakeholders, and the input they provided, are summarized in Section IX.

B. *Pioneer* Route History

Prior to May 1971, service along the *Pioneer* route was provided by UP trains, primarily the *City of Portland* (Chicago–Portland) and *Portland Rose* (Kansas City–Denver–Portland). These trains’ routes were not included in the U.S. Department of Transportation-designated initial Amtrak route network, leading to their discontinuance on April 30, 1971. Amtrak’s *San Francisco Zephyr*, which operated between Chicago and Oakland, California, continued

to provide passenger rail service between Denver and Ogden via UP's Overland Route through Wyoming.

As a result of grassroots activity and efforts by state and Congressional elected officials, Amtrak instituted a daily train, named the *Pioneer*, between Salt Lake City and Portland/Seattle in June 1977. This new service followed the UP route through eastern Oregon and southern Idaho, linking the Pacific Northwest's principal cities with the Intermountain West. At Ogden, the *Pioneer* connected to the *San Francisco Zephyr*, providing service (albeit with a change of trains) to Denver and Chicago.

The *Pioneer* began service with single-level Amfleet coaches designed for short distance trains; a food service car offered tray meals, snacks and sandwiches. Sleeping car service began in July 1978. Initial intermediate stops included Tacoma, East Olympia, Centralia, Kelso-Longview, and Vancouver, Washington; Portland, Hood River, The Dalles, Hinkle, Pendleton, La Grande, Baker City, and Ontario, Oregon; Nampa, Boise, Mountain Home, Shoshone, and Pocatello, Idaho; and Brigham City and Ogden, Utah. Stops at Cache Junction (Logan), Utah and Cascade Locks, Oregon were added later, and subsequently removed. The stops at Mountain Home and Brigham City were also later discontinued.

During the years 1979 through 1981, Amtrak re-equipped its Western transcontinental trains with bi-level Superliner cars. In April 1981, Superliner equipment came to the *Pioneer*, including a diner providing full meal and snack service. A through Chicago–Seattle coach and sleeping car operated on the *San Francisco Zephyr* east of Ogden, allowing passengers to travel to points on the *Zephyr's* route without having to change trains.

Beginning July 1983, a major change to the *Pioneer* took place. The *San Francisco Zephyr* was rerouted between Denver and Salt Lake City via the scenic Denver and Rio Grande Western Railroad (Rio Grande Route) and renamed the *California Zephyr*. The *Pioneer's* connection to the *California Zephyr* was moved to Salt Lake City.

Between June 1977 and the late 1980s, the eastbound *Pioneer* left Seattle between 7:00 AM and 8:00 AM, arriving in Ogden or Salt Lake City 23 to 24 hours later. Westbound, after a 23 to 24 hour journey from Ogden/Salt Lake City, the train arrived in Seattle between 9:00 PM and 9:30 PM. (See Exhibit A, *Historic Schedule Table*, for details.) This schedule pattern provided daytime or near daytime service at Seattle, Portland and Salt Lake City in both directions.

During the late 1980s, host railroad operational issues began impacting the on-time performance of the *California Zephyr*. In response, time was added to the *California Zephyr's* schedule, resulting in an earlier eastbound departure and later westbound arrival at Salt Lake City. Maintaining the *Zephyr–Pioneer*

connection at Salt Lake City required a 5:20 AM departure time for the *Pioneer* from Seattle eastbound, and a later Seattle arrival time westbound, which diminished the train’s market appeal.

In June 1991, Amtrak addressed this problem by rerouting the *Pioneer* over Union Pacific’s Overland Route between Ogden and Denver via Wyoming. Operation via the Overland Route, which is significantly faster than the Rio Grande Route through Colorado, allowed Seattle arrival/departure times to return to more marketable hours. A bus connection was provided between Ogden and Salt Lake City.

This service pattern continued until November of 1993, when reductions in Amtrak’s federal appropriation resulted in the *Pioneer* service being reduced to tri-weekly. In a subsequent restructuring, service on both the *California Zephyr* and the Chicago–St. Paul–Seattle *Empire Builder* was reduced to four times per week.

In 1997, reductions in Amtrak’s federal funding necessitated further service cuts. Amtrak decided to discontinue the *Pioneer* and the Salt Lake City–Los Angeles *Desert Wind*, and to restore both the *Empire Builder* and *California Zephyr* to daily operation. Utilizing limited funding to provide daily service on long distance routes with the highest ridership was expected to generate increased passenger and mail and express revenues, and to create efficiencies that would reduce the cost of operating Amtrak’s long distance network.

C. Historic Ridership

Outlined below is a summary of annual ridership on the *Pioneer* for the 1984 through 1993 period during which data are available and the *Pioneer* generally operated daily. The table excludes local ridership between Seattle and Portland. The years (1992-93) during which the *Pioneer* operated Denver–Seattle via the Overland Route are highlighted.

Table 1 - *Pioneer* Historic Ridership

<u>Fiscal Year</u>	<u>Ridership</u>	<u>Average Trip Length (Mi)</u>	<u>Average Riders per Train</u>	<u>Pass. Miles per Train Mile</u>
FY84	134,000	820	184	139
FY85	124,000	837	170	132
FY86*	117,000	848	160	126
FY87*	100,000	956	137	121
FY88	118,000	953	162	143
FY89	118,000	1,048	162	157
FY90	111,000	1,118	152	158

FY91**	126,000	-	-	-
FY92	156,000	1,026	214	135
FY93	138,000	1,088	189	127

* *Pioneer* operated tri-weekly during selected off-peak periods.

** Mixed route: *Pioneer* re-routed via Wyoming summer of 1991. Route metrics not shown due to significant mileage difference between the two routes.

Average ridership per train reflects the total number of passengers traveling over some portion of the route on an average *Pioneer* trip, while passenger miles per train mile represent the average number of passengers generated for each train mile operated. The historical ridership figures show that the 1991 reroute through Wyoming increased total ridership, but the additional miles through an area with low population reduced the passenger miles per train mile.

D. Competing Modes

The competitiveness of travel by highway did not change markedly along the *Pioneer's* route during the train's 20 years of operation, and that remains the case today. The parallel Interstate Highways were largely completed when the *Pioneer* began operation in 1977. The highway mileages and rail mileages between points along the *Pioneer's* route are generally comparable, except to/from Seattle, where the rail route is longer. Highway trip time reductions attributable to the elimination of the 55-mph national speed limit have been offset by increased highway congestion, particularly in urban areas.

However, airline competition along the *Pioneer's* route changed dramatically during the 20 years that the *Pioneer* operated, due to deregulation. In 1977, air service between Denver and Portland/Seattle, and between Salt Lake City and the Pacific Northwest, was limited to just three to four round trips a day, and all passengers paid the same (undiscounted) fare. Deregulation of new entry and of fares in the early 1980s, the proliferation of budget airlines, and the development of revenue management and variable fares tied to demand, resulted in much lower air fares between major cities for non-business travelers that were very competitive with Amtrak coach fares. The number of airline flights also increased dramatically. Southwest Airlines' entry into the Salt Lake City, Boise, Portland and Seattle markets shortly before the *Pioneer's* 1997 discontinuance accelerated these trends.

At the same time, there was a significant decline in both airline service and intercity bus service in smaller communities along the *Pioneer* route. Major airlines withdrew from small cities like Twin Falls and Pocatello, Idaho following airline deregulation, and were replaced by regional airlines that flew small planes and charged higher fares. The number of intercity bus trips along the *Pioneer* route decreased from six daily round trips in 1977 to three in 1995.

III. EXISTING RAILROAD OPERATIONS AND INFRASTRUCTURE

A restored *Pioneer* could operate via either of the two routes over which the train operated from 1977 to 1997:

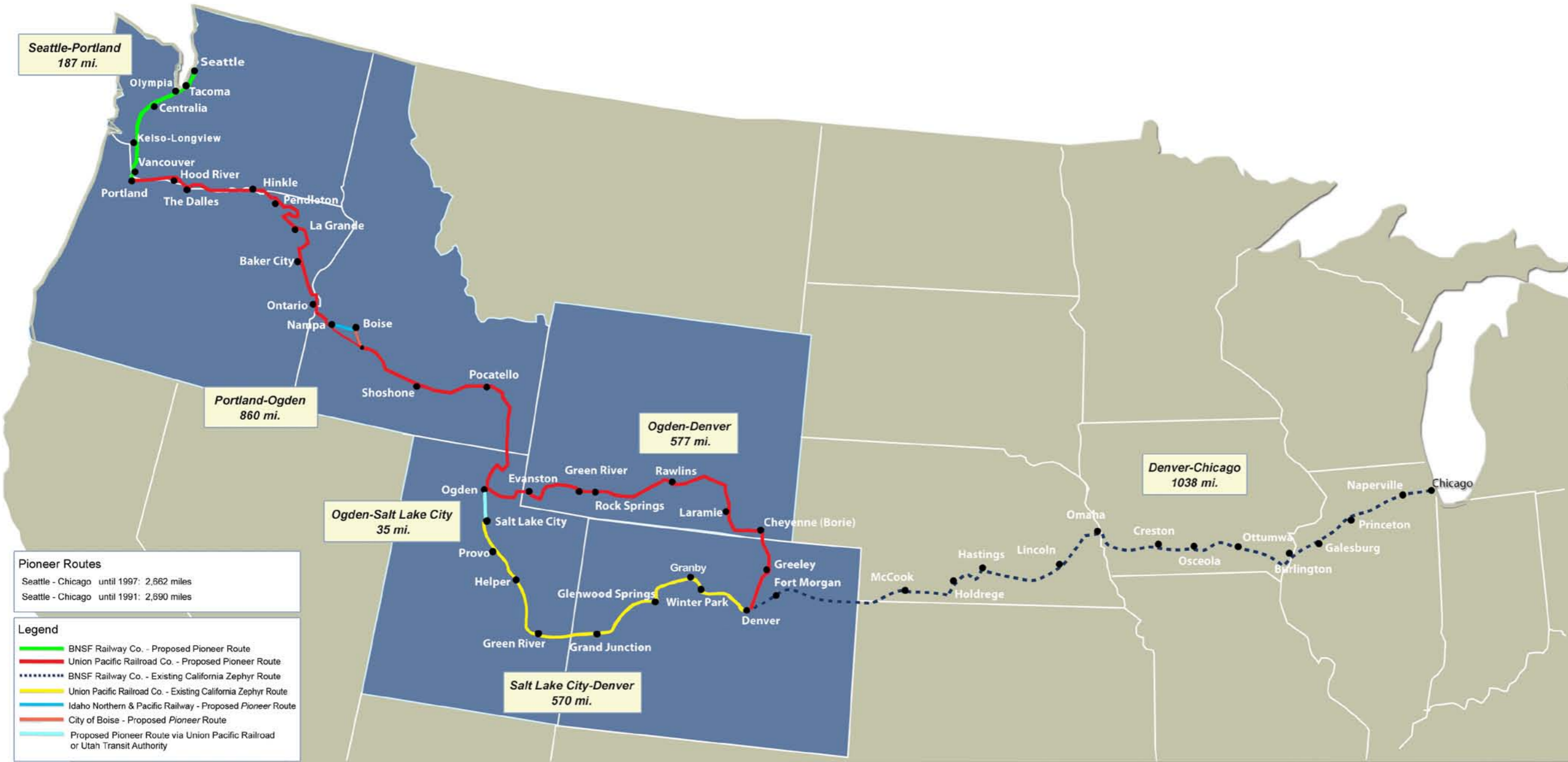
1) Overland Route: This is the route the *Pioneer* used from 1991 through 1997. The train would originate in Denver, with through cars operating on the *California Zephyr* between Chicago and Denver. It would operate between Denver and Ogden on UP's Overland Route through Wyoming. From Ogden to Portland, the *Pioneer* would operate over UP's Pacific Northwest Line and the Boise Cutoff; if it continued on to Seattle it would operate over the BNSF Portland–Seattle line used by Amtrak's *Cascades* trains. This Overland Route is 1,624 miles long from Denver to Seattle, and 1,437 miles long between Denver and Portland.

2). Rio Grande Route: The Rio Grande Route represents the 1977-1991 route of the *Pioneer*. Through Chicago–Seattle cars would operate on the *California Zephyr* from Chicago to Salt Lake City via the Rio Grande Route (now owned by UP) through Colorado. The *Pioneer* would become a separate train at Salt Lake City, and would operate over either the UP or UTA line to Ogden to join the Overland Route and continue to Portland or Seattle. Route mileage on the Rio Grande Route is 1,652 miles from Denver to Seattle and 1,465 miles from Denver to Portland (including in both cases the 570 miles from Denver to Salt Lake City on which the *Pioneer* through cars would operate on the *California Zephyr*).

While the Rio Grande Route is only 28 miles longer than the Overland Route, the running time on the Rio Grande Route is about four hours longer (not including station dwell time at Salt Lake City) due to the steep grades and curvature as the rail line travels through Colorado's Rocky Mountains.

The following map shows the route options and track route miles for each major route segment.

PIONEER ROUTE PASSENGER PROJECT STUDY



The infrastructure and current operations on the rail lines over which a restored *Pioneer* would operate are described below.

A. Signal Systems

With the exception of the 44-mile Boise Cutoff between Orchard and Nampa, Idaho, the rail lines that a restored *Pioneer* would utilize are protected by wayside signal systems along the tracks. Centralized Traffic Control (CTC) is installed on approximately 70%-80% of both the Overland Route and the Rio Grande Route. The remaining trackage has a more limited Automatic Block Signal system (ABS) which provides less capacity per track.

CTC is a control system whereby a human dispatcher in a remote location directs trains over track segments, primarily via wayside signals and switches for passing sidings that the dispatcher controls. With ABS, trains operate pursuant to train orders given over the radio by the dispatcher, and switches are manually operated by train crews. Under both CTC and ABS, once a train enters a specific section or block, the signal system automatically displays signals that instruct other trains to operate at reduced speed or stop to ensure safe operations.

The Boise Cutoff currently lacks any signal system. It is considered Dark Territory operated under Direct Traffic Control (DTC): the dispatcher gives verbal permission for a train to enter a pre-defined block (track segment), and the train engineer verbally releases the block after exiting.

B. Current Freight and Passenger Operations

Table 2 below identifies the number of freight and passenger trains currently operating over the various line segments on the potential *Pioneer* routes, and the track ownership of each segment.

The vast majority of both the Overland and Rio Grande Routes are on freight railroad main line tracks. The Boise Cutoff and the UTA-owned line that is one of the alternatives between Salt Lake City and Ogden have only limited local freight operations, and there are no train operations on 20 miles of the Boise Cutoff. While no passenger trains operate on the UP line segments or the Boise Cutoff, the UTA line and the BNSF Portland–Seattle line over which the *Pioneer* would operate if it terminated in Seattle currently accommodate commuter train service and a large number of passenger trains, respectively.

Table 2 - Current Freight and Passenger Train Volumes on *Pioneer* Route

Routing Option	Between		Railroad	Current Trains per Day	
				Freight	Passenger
Overland Route	Denver	Cheyenne	UP	16	0
	Cheyenne	Rawlins	UP	70	0
	Rawlins	Granger	UP	70	0
	Granger	Ogden	UP	47	0
Overland/Rio Grande Routes	Ogden	Pocatello	UP	6	0
	Pocatello	Orchard	UP	27	0
Boise Cutoff	Orchard	Boise	Storage	0	0
	Boise	Nampa	INPR	2	0
Overland/Rio Grande Routes	Nampa	La Grande	UP	25	0
	La Grande	Hinkle	UP	24	0
	Hinkle	Portland	UP	27	0
Portland-Seattle	Portland	Vancouver	BNSF	10	12
	Vancouver	Tacoma	BNSF	33	10
	Tacoma	Seattle	BNSF	25	28
Rio Grande Route Alternatives	Salt Lake City	Ogden	UP	38	0
	Salt Lake City	Ogden	UTA	2	73

Sources: UP Trains per Day Volume Map, 2nd Quarter 2006 and Amtrak Pioneer Feasibility Study, July 15, 2009; BNSF average train count data; UTA schedules: Amtrak and Sounder schedule; and study team estimates.

The following is a description of the individual route segments:

1. Denver-Ogden (Overland Route)

The 577-mile segment between Denver and Ogden, which the *Pioneer* would utilize if it originated in Denver, encompasses four UP subdivisions.

a) UP Greeley Subdivision:

The Overland Route follows the Greeley Subdivision for 98.6 miles between Denver and Speer, Wyoming (approximately eight miles southwest of Cheyenne). Maximum speed is 60 mph for all trains. This line is comprised of CTC-equipped single main track, with sidings spaced about every 11 miles. Current traffic volume is 16 trains per day.

b) UP Laramie Subdivision

This subdivision runs 173.3 miles from Speer to Rawlins, Wyoming. Maximum speed is 70-79 mph for passenger trains and 55-70 mph for

freight trains. The subdivision has double and triple track with CTC, and handles 70 trains per day.

c) UP Rawlins Subdivision

This subdivision, which runs from Rawlins to Green River, Wyoming (134.5 miles), also sees 70 trains a day. It is double track with a maximum speed of 79 mph for passenger trains and 60-70 mph for freight trains. CTC is installed on portions of this segment, but the majority is equipped with ABS.

d) UP Evanston Subdivision

This double track subdivision runs 176.3 miles between Green River, Wyoming and Ogden. Maximum speed is 70-79 mph for passenger trains and 50-70 mph for freight trains. The section between Green River and Granger, Wyoming has 30 miles of CTC handling 70 trains per day. Between Granger and Ogden, there are 37 miles of CTC, 109 miles of ABS, and 47 trains per day. The track connection to Ogden Union Station formerly used by the *Pioneer* has been removed.

2. Ogden-Portland (Overland and Rio Grande Routes)

The 860 miles of the *Pioneer* route between Ogden and Portland traverse six UP subdivisions, the Boise Cutoff, and a short segment of BNSF trackage in Portland.

a) UP Ogden Subdivision

The Ogden Subdivision extends 111.4 miles from Ogden, Utah to McCammon, Idaho. Maximum speed is 60 mph for all trains, and there are approximately six trains per day. The subdivision has single track with ABS and 16 sidings.

b) UP Pocatello Subdivision

The *Pioneer* route follows UP's Pocatello Subdivision between McCammon and Pocatello, Idaho (24.5 miles). This segment has maximum speeds ranging from 20 to 55 mph for all trains; double or triple track; and CTC. It accommodates about 29 trains per day.

c) UP Nampa Subdivision

The *Pioneer* route runs over the Nampa Subdivision between Pocatello and Orchard, Idaho (35.2 miles). Maximum speed is 70 mph for all trains. This CTC-equipped segment sees 27 trains per day. It is mostly single track with sidings every eight miles and some sections of double track.

d) Boise Cutoff

UP's main line between Orchard and Nampa, Idaho follows a direct route that bypasses Boise, Idaho's capital and largest city. The *Pioneer* served Boise via a 44.3-mile secondary line between Orchard and Nampa known as the Boise Cutoff.

Following the *Pioneer's* 1997 discontinuance, train operations ceased on the portion of the Boise Cutoff between Orchard and Shafer, Idaho (19.5 miles). That segment is now owned by the City of Boise (except for the UP-owned first mile near Orchard) and used for freight car storage under an agreement that would not inhibit restoration of the *Pioneer*. The remaining 24.8 miles between Shafer, Boise, and Nampa, where the Boise Cutoff rejoins UP's main line, is still owned by UP and leased to a short line railroad, Idaho Northern Pacific Railroad (INPR). The Shafer–Nampa segment, over which INPR operates a round trip freight train on weekdays, includes a mile-long siding west of Boise.

The Boise Cutoff has older jointed (bolted) rail rather than the welded rail found on most passenger lines and freight main lines. The switches connecting the Cutoff to UP's main line are hand-thrown with low speed turnouts. Track conditions on the Shafer–Nampa segment limit the maximum speed to 25 mph. Some portions of that segment, and of the Orchard–Shafer segment on which there are no current rail operations, have even lower speeds.

e) UP Huntington Subdivision

The Boise Cutoff rejoins the UP main line in Nampa, the location of a major UP Yard where locomotives are added to westbound freight trains and removed from eastbound freight trains.

This Huntington Subdivision between Nampa and La Grande, Idaho (179.2 miles) handles approximately 25 trains per day. Maximum speed is 70 mph on CTC-equipped single track, with sidings located every seven miles.

f) UP La Grande Subdivision

This subdivision runs between La Grande and Hinkle, Oregon (105.4 miles), passing through the steep grades of the Blue Mountains. Maximum speed is 65 mph for all trains, and the line sees 24 trains per day. The entire subdivision has CTC, and its track configuration is a combination of double track and single track with sidings about every six miles. While sidings are fairly frequent, several are less than 8,000

feet, restricting their use by longer freight trains. Freight trains are also slowed by grades of at least 2% for 30 route miles.

g) UP Portland Subdivision

This subdivision runs between Hinkle and East Portland, Oregon (184.7 miles), passing along the Columbia River Gorge. Maximum speed is 70 mph, and there are 27 trains per day. The track is mostly CTC-equipped single track with sidings about every 9 miles; there are approximately 20 route miles of double track controlled by ABS between Biggs and The Dalles, Oregon.

The Portland Subdivision splits into two lines at Troutdale, Oregon. The *Pioneer* route follows the line to the south, known as the Graham Line, to Steel Bridge in East Portland.

h) East Portland to Portland Union Station

Steel Bridge, primarily used by Amtrak trains operating south of Portland, connects with BNSF's Fallbridge Subdivision which leads into Portland Union Station. The connection formerly used by the *Pioneer* between the Graham Line and Steel Bridge was severed several years ago. If the connection is not restored, the *Pioneer* would have to run north of the Steel Bridge onto UP's Seattle Subdivision toward UP's Albina Yard; reverse direction, and operate backwards (via an existing connection) onto Steel Bridge and into Portland Union Station. Moreover, the train would be facing south; to continue to Seattle, it would have to make a round trip back across the Steel Bridge so that it could be wyeed. These maneuvers would increase running time.

3. Portland-Seattle (Overland and Rio Grande Routes)

A restored *Pioneer* operating through to Seattle would operate over the BNSF Portland-Seattle line used by ten daily Amtrak trains (the *Cascades* trains and Los Angeles–Seattle *Coast Starlight*). The Portland section of Amtrak's *Empire Builder* also operates daily in each direction between Portland and Vancouver, Washington.

a) BNSF Fallbridge Subdivision

BNSF's Fallbridge Subdivision between Portland Union Station and Vancouver, Washington (9.9 miles) is double tracked and controlled by CTC. Amtrak's 12 trains account for most train operations between Portland Union Station and East St. Johns, Washington; BSNF operates approximately 10 freight trains per day between East St. Johns and Vancouver, Washington.

b) BNSF Seattle Subdivision

The BNSF Seattle Subdivision runs between Vancouver and Seattle, Washington (136.2 miles). The line is double tracked with CTC, and has sections of triple track north of Tacoma.

In addition to Amtrak's ten trains, approximately 33 BNSF and UP freight trains operate daily between Vancouver and Tacoma. From Tacoma to Seattle, there are 10 Amtrak trains; 18 weekday Sounder commuter trains; and approximately 25 freight trains.

4. Salt Lake City–Ogden (Rio Grande Route)

Two alternate routings exist on the 35-mile segment of the Rio Grande Route between Salt Lake City and Ogden; one is via the UP line over which the *Pioneer* operated until 1991. The other is a parallel line belonging to the Utah Transportation Authority (UTA) over which the FrontRunner, UTA's commuter rail service, operates.

a) UP's Salt Lake City Subdivision

UP's Salt Lake City Subdivision is comprised of triple track between Salt Lake City and North Salt Lake City and double track from North Salt Lake City to Ogden, all equipped with CTC. UP operates approximately 38 freight trains per day over this line.

The track connections from UP's Salt Lake City Subdivision to Ogden Union Station (the *Pioneer's* former Ogden stop) has been removed, and would have to be restored for a *Pioneer* operating via the Rio Grande Route to serve the station tracks at Ogden Union Station.

Alternatively, a crossover connection could be constructed between UP and UTA tracks about two miles south of Ogden to allow the *Pioneer* to stop at either UTA's Ogden multi-modal station or a new platform constructed along the UTA line adjacent to Ogden Union Station. Given that Amtrak's Superliner cars have floors that are 15 inches above the top of rail, UTA's plans to construct platforms that are 25 inches higher than the top of rail at the multi-modal station could be an impediment to using the UTA station for the *Pioneer's* Ogden stop.

b) UTA Line

Rather than operating over UP's Salt Lake City Subdivision, the *Pioneer* could use the parallel UTA line between Salt Lake City and Ogden. The UTA line accommodates 73 weekday FrontRunner commuter trains that operate throughout the day (save for a four-hour nighttime window during which UTA performs track inspections and maintenance work and a round trip freight train operates over the line).

The UTA line is predominantly single track and has eight passing sidings, most at station locations. Use of the UTA line would require construction of a new connection to allow the *Pioneer* to access the Amtrak station in Salt Lake City. It would also require that Amtrak locomotives operating on the *Pioneer* be equipped with the GE Ultracab 2-cab signal system that UTA uses.

Both UP and UTA have expressed concerns about operation of the *Pioneer* over their respective Salt Lake City–Ogden lines. Amtrak believes that the UP line is the most logical and feasible option if the *Pioneer* operates via the Rio Grande Route.

C. Stations and Equipment Servicing Facilities

The 1997 discontinuance of the *Pioneer* eliminated Amtrak service at 19 intermediate stations the train served between Denver and Portland. These stations, referred to as the “Potentially Reinstated Stations,” are discussed in Section IV. A restored *Pioneer* terminating in Seattle would also serve the four existing Amtrak stations on the *Cascades* route between Portland and Seattle—Kelso-Longview, Centralia, Olympia-Lacey, and Tacoma, Washington—where no facility modifications would be required to accommodate its operation.

In addition to these stations, the *Pioneer* served four major cities that Amtrak continues to serve today: Denver (1991-1997); Salt Lake City (1977-1991); Portland; and Seattle. These four cities are all potential endpoints at which a restored *Pioneer* would terminate and its equipment would be serviced. The Amtrak stations and servicing facilities in these cities are discussed below.

1. Denver Union Station

Denver Union Station is currently served by the *California Zephyr* operating daily in both directions. The station is equipped to perform federally mandated inspections and limited equipment servicing, and has a wye track (Prospect Wye) used by the *California Zephyr* on which a *Pioneer* terminating at Denver could be turned for its return trip. The Denver Regional Transportation District (RTD), which owns Denver Union Station, is pursuing plans to develop the station as a public transportation hub, plans that include reconfiguration of the station’s tracks to accommodate four new commuter rail lines. An agreement between Amtrak and RTD ensures that, following the completion of the reconfiguration, there will be sufficient station and layover trackage and servicing capability at Denver Union Station to support a restored *Pioneer*.

2. Salt Lake City Amtrak Station

Amtrak's service at Salt Lake City is also provided by the *California Zephyr*. The Salt Lake City Amtrak Station, which replaced the no longer rail-served station facility used by the *Pioneer*, has two through tracks and provisions for limited equipment servicing. The current track configuration could accommodate the *Pioneer*, and the contemplated switching operations between the *Pioneer* and *California Zephyr*, as long as the eastbound and westbound *Zephyrs* were not in the station at the same time, a problem that would occur only if the westbound train was very late. Trains can be turned on the Grant Tower Wye. Amtrak has an agreement with Utah Transit Authority (UTA) for a UTA-funded replacement station.

3. Portland Union Station

Thirteen daily Amtrak trains utilize this station. It has five tracks, two of which are used for through freight operation. The station has limited equipment servicing capabilities and a nearby wye track (East Portland Wye). It currently performs turnaround servicing for the *Empire Builder* and *Cascades* trains.

4. Seattle King Street Station

King Street Station serves 14 daily Amtrak trains and 26 weekday Sounder commuter trains. It has four through tracks and three stub tracks. Both Amtrak and Sounder trains lay over and are serviced at Amtrak's Seattle Maintenance Facility south of the station, which is being upgraded under a multi-phase program

IV. STATIONS

Until 1991, the *Pioneer* served 12 intermediate stations between Salt Lake City and Portland on the Rio Grande Route. In 1991, the *Pioneer* was rerouted to the Overland Route through Wyoming, which added service at seven additional intermediate stations between Denver and Ogden, Utah. The *Pioneer* continued to serve these 19 stations until it was terminated in 1997 and Amtrak service at these stations was eliminated.

A. The Potentially Reinstated Stations

Resumption of Amtrak service at the 19 Overland Route stations the *Pioneer* served at the time of its discontinuance would require capital investments to bring station facilities up to a state of good repair (or replace them) and to make them compliant with the *Americans with Disabilities Act of 1990* (the “ADA”). If *Pioneer* service is restored over the Rio Grande Route, then only 11-12 of these stations would require improvements. These 19 stations, referred to as the “Potentially Reinstated Stations”, are shown in Table 3 below.

Table 3 - Potentially Reinstated Stations

Overland Route Only	State	Current Station Site User
Greeley	CO	Greeley Convention and Visitors Bureau
Borie (Cheyenne)	WY	No longer exists
Laramie	WY	Albany County Railroad Heritage Museum
Rawlins	WY	Not in use
Rock Springs	WY	Model railroad museum
Green River	WY	UP office
Evanston	WY	Museum
Overland and Rio Grande Routes	State	Current Station Site User
Ogden	UT	Multiple museums and gift shop
Pocatello	ID	UP office
Shoshone	ID	Not in use
Boise	ID	Community events
Nampa	ID	UP office
Ontario	ID	Not in use
Baker City	OR	City Parks Dept. and short line railroad offices
La Grande	OR	UP office
Pendleton	OR	No longer exists
Hinkle	OR	N/A
The Dalles	OR	Greyhound Bus
Hood River	OR	Mt. Hood Railroad (tourist railroad station; offices)

The majority of these stations were built by private railroads long before the creation of Amtrak in 1971. Several of these structures are listed in the National Register of Historic Places.

It is important to note that these stations are presented in this report for illustrative purposes only. Whether a reinstated *Pioneer* would stop in all of these communities, or would serve other communities, has not been determined. As many of the Potentially Reinstated Stations are currently used by freight railroads or have been sold or leased to private entities for non-railroad purposes (e.g., museums, community centers, etc.), this report also does not mean to imply that these particular stations would be used as station stops if the *Pioneer* is reinstated with stops in these communities.

B. Station Restoration Requirements

Whether Amtrak uses the existing Potentially Reinstated Station structures or builds new ones, it must ensure that they are in a state of good repair and are ADA compliant before it reinstates service to these communities. Amtrak has developed an extensive process for assessing and completing work necessary to develop or restore stations. This process allows Amtrak to equip the stations it serves to meet ADA accessibility requirements and provide the level of service appropriate for their size and location.

1. ADA Requirements—Overview of the ADA Law and Standards

a) Americans with Disabilities Act of 1990

Amtrak strives to maintain the rail stations it serves in a state of good repair and ensure that they are readily accessible to, and usable by, passengers with disabilities as required by section 242(e)(2) of the *Americans with Disabilities Act of 1990* (42 U.S.C. 12162(e)(2)). In February of 2009, Amtrak submitted to Congress “A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990” (Stations ADA Report). The report describes the ADA requirements applicable to Amtrak and details Amtrak’s plan for making the 481 stations Amtrak currently serves compliant with the ADA.

The Stations ADA Report does not include restoration assessments and development plans for the Potentially Reinstated Stations, since Amtrak does not currently serve them. This section, therefore, will focus on the improvements necessary if service is to be resumed to these stations.

b) Construction and Alteration of Rail Stations

The ADA precludes Amtrak from “[building] a new station for use in intercity rail transportation that is not readily accessible to and usable by person with disabilities, including individuals who use wheelchairs.” (42 U.S.C. 12162(e)(1)). Whether Amtrak uses the existing station structures or builds new facilities in or near the towns in which the

Potentially Reinstated Stations are located, these structures will likely be deemed “new stations” for purposes of the ADA. As such, Amtrak cannot serve them unless and until that they are made fully ADA compliant; and thus it is Amtrak who will bear the full measure of the costs associated with this effort.

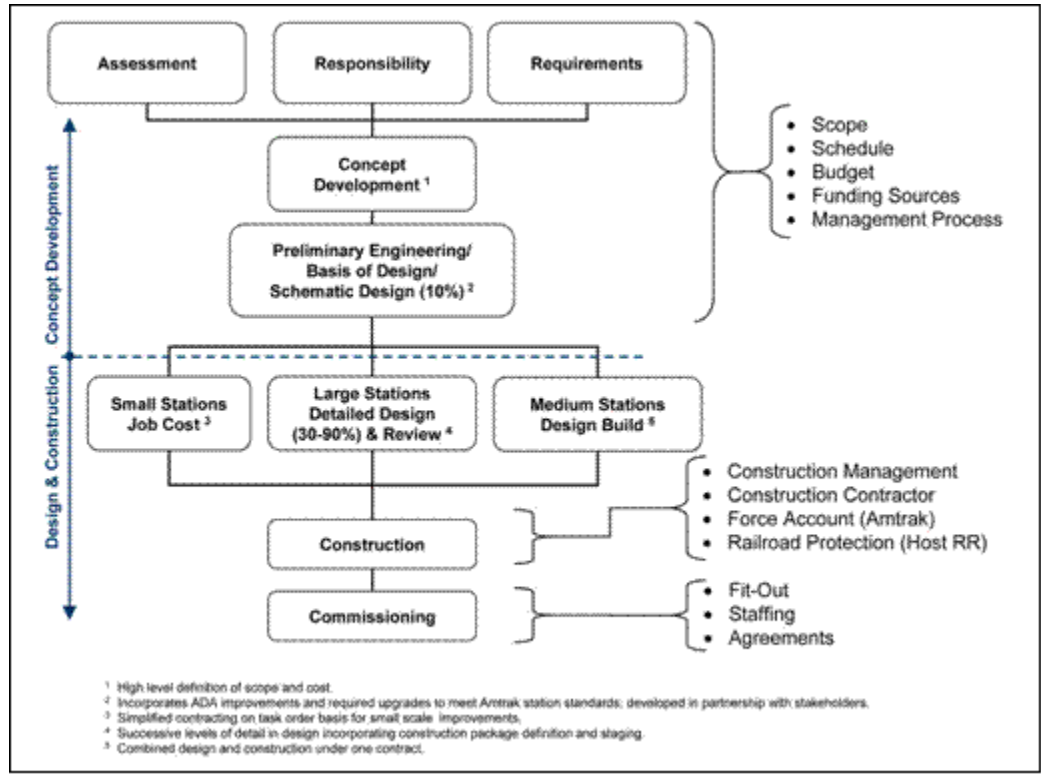
Preliminary research indicates that the buildings that once served as the *Pioneer* stations, and the land on which they sit, are owned in most instances by either a freight railroad or a private developer. Some city and county governments have expressed a strong interest in funding the reinstatement of Amtrak service in their communities. However, no local government along the *Pioneer* route has, as of the date of this report, committed to financing this endeavor if service is reinstated. Thus, absent an agreement with the locality stating otherwise, the ADA compliance responsibility for reinstating stations on these privately owned sites will fall exclusively to Amtrak, either as the owner of the site if Amtrak purchases it from the private owner, or as the sole public user operating passenger railroad service at this Potentially Reinstated *Pioneer* stop.

C. Station Development Process

1. Stations Improvement Program and Schedule

Amtrak’s Stations Development Plan is founded on a set of station surveys, contained in the Stations ADA Report, that were completed for each of the 481 stations served by Amtrak that are required to be made ADA-compliant. Recently, Amtrak performed additional surveys of the Potentially Reinstated Stations which specify the nature of the improvements required to bring these structures up to a state of good repair and make them ADA accessible. The improvements made to these stations if *Pioneer* service is reinstated would follow the design and development processes depicted in the diagram below.

ADA Station Development Process



Project designs at all stations are initiated through the development of a conceptual design. The conceptual design describes the scope of the project, time frames for implementation, responsibilities for improvements and management process steps for completing the detailed design and construction process. The scope, schedule, and budget along with funding assumptions and management responsibilities and actions would be developed as part of this stage along with agreements among and between the parties associated with implementation.

This conceptual design phase is followed by the design and construction phase of the project. The nature and duration of the design and construction phase depends upon the size of the station involved and the extent of the work necessary to refurbish it. While the 19 Potentially Reinstated Stations all fall into the small station category, the improvements required at these stations will be substantial, since they were built before current ADA requirements took effect and have not been used for passenger rail service in over a decade. These projects typically follow a design-build approach in which a single contractor would handle both the detailed design and the construction. The duration for these projects from start to finish will average approximately 36 to 48 months.

2. Station-Related Agreements

As part of the conceptual design process associated with Potentially Reinstated Station restoration, lease or purchase agreements would need to be forged between Amtrak and the private owners of the station sites, and the local governmental entity when necessary. As many of the sites are now used as museums, community centers, etc., these negotiations may require a great deal of time and resources.

While Amtrak would, in general, take responsibility for adding and maintaining electronic ticketing and passenger information displays systems (where appropriate), other elements of the delivery system for service require detailed inventory and responsibility assignment. For purposes of the Potentially Reinstated Stations, Amtrak would expect to enter into an operating agreement with the local city or county which would specify that the local governmental entity will provide for all ongoing maintenance associated with the station facility. This agreement would also delineate the responsibility for the day-to-day station operating expenses.

3. Funding Considerations

An important consideration in restoring the Potentially Reinstated Stations is the source of funding for these efforts. As described in Section B.1.(b) above, Amtrak will be responsible for all costs incurred to render the Potentially Reinstated Stations ADA compliant. Given the significant amount of ADA related work associated with these projects, it will be impractical to distinguish ADA related costs from general refurbishment and state of good repair expenditures. If a decision is made to reinstate the *Pioneer* service, the additional Federal funding required for the associated capital costs would have to include funding for all of the Potentially Reinstated Station improvements in communities where the train would stop.

D. Preliminary Capital and Operating Cost Estimates

Recent surveys of the Potentially Reinstated Stations indicate that bringing all 19 stations back into service and into compliance with ADA requirements will require approximately \$16.1 million in capital investments (in 2009 dollars). (See Exhibit B, *Amtrak SOGR and ADA Station Survey Assessment*.)

Once the necessary capital improvements to the Potentially Reinstated Stations have been made, an annual operating expenditure of approximately \$150,000 will be needed to maintain them in a state of good repair and ensure that they remain ADA compliant. (See Exhibit C, *Amtrak Pioneer Stations—*

Annual Operating Costs, which delineates the projected annual operating expenditure for each of these stations.)

If *Pioneer* service is resumed between Salt Lake City and Portland over the Rio Grande Route, only 11-12 of the 19 Potentially Reinstated Stations would need to be brought up to a state of good repair and made ADA compliant. (If the *Pioneer* serves the UTA multi-modal station in Ogden, the projected expenditures at Ogden Union Station would not be required.) The projected cost of the necessary capital improvements at these stations is approximately \$9.5 million to \$10.3 million, depending upon whether Ogden Union Station is included. Annual operating costs are estimated to range between \$90,000 and \$120,000.

V. SERVICE RESTORATION ALTERNATIVES

A. Service Options

PRIIA requires Amtrak to study restoration of the *Pioneer* route, or portions of the route, between Seattle and Chicago.

The former *Pioneer* service pattern—operating through Chicago–Seattle cars on the *California Zephyr* between Chicago and Denver or Salt Lake City, and operating a separate *Pioneer* train from Denver (via the Overland Route) or Salt Lake City (Rio Grande Route) to Seattle—remains the logical and most cost efficient way to restore Chicago–Seattle service via the *Pioneer* route. Utilizing the *California Zephyr* between Chicago and Denver/Salt Lake City avoids the capital and operating costs of operating a separate *Pioneer* between those cities, but preserves the significant revenue generated by offering through coach and sleeping car service over the entire route. Providing service over only a portion of the *Pioneer* route—the 491-mile segment from Portland to Boise, for example—would generate lower ridership and revenue, even on the segment over which the train operated, since only the relatively small number of potential passengers whose origin and destination were both within that segment would be served. (Average passenger trip length on the *Pioneer* prior to its discontinuance was over 1,000 miles.) PRIIA would also require that any route less than 750 miles in length be state-funded.

The Overland Route options through Wyoming would serve a greater passenger volume, and would restore intercity passenger rail service to a state that has lacked service since the *Pioneer's* discontinuance. The Rio Grande Route options would directly serve Salt Lake City, and would provide service between the Pacific Northwest and major Colorado vacation destinations such as Glenwood Springs.

This report also examines the alternative of utilizing existing *Cascades* trains to provide connecting service between Portland and Seattle rather than operating a separate *Pioneer* over that segment. This approach would avoid potential capital costs to increase rail line capacity between Portland and Seattle.

Originating the separate *Pioneer* at either Denver or Salt Lake City, and terminating it at either Portland or Seattle, produces four potential endpoint combinations. Amtrak evaluated various schedule options for each of these combinations under a ranking process based primarily upon ridership; total direct operating costs; direct operating loss (revenues minus direct operating costs); and farebox recovery (the percentage of direct operating costs covered by ticket and food and beverage revenues).

The four options presented in this report represent the best schedule alternatives for each of the four potential endpoint combinations. Their relative performance based upon the criteria described above is as follows.

- **Option 1 (Salt Lake City-Seattle Option)** – This option has higher ridership, lower operating costs, the lowest subsidy requirement, and the highest farebox recovery.
- **Option 2 (Denver-Seattle Option)** – This option has the highest ridership, higher operating costs, a higher subsidy requirement, and a moderate farebox recovery.
- **Option 3 (Salt Lake City – Portland Option)** – This option has lower ridership, lower operating costs, a lower subsidy requirement, and lower farebox recovery.
- **Option 4 (Denver – Portland Option)** – This option has lower ridership, higher operating costs, a higher subsidy requirement, and a lower farebox recovery.

Table 4 – Comparison of Potential Operating Performance

	Option 1	Option 2	Option 3*	Option 4*
	CHI-SLC-SEA	CHI-OGD-SEA	CHI-SLC-PDX	CHI-OGD-PDX
Total Riders	102,000	111,000	82,000	95,000
Total Revenue (millions)	\$11.6	\$13.1	\$7.6	\$9.2
Total Direct Costs (millions)	\$36.6	\$46.2	\$35.9	\$44.7
Net Impact (Rev. - Direct Costs) (millions)	(\$25.0)	(\$33.1)	(\$28.3)	(\$35.5)
Farebox Recovery	31.7%	28.4%	21.2%	20.6%

* Riders connecting to/from *Cascades* trains between Portland and Seattle are counted twice, since they would travel over two routes.

Exhibit D, *Long Distance Route Farebox Recovery Table*, compares the projected farebox recoveries for the four *Pioneer* options with the farebox recoveries of the 15 long distance trains Amtrak currently operates. As can be seen, the projected farebox recovery of the reinstated *Pioneer* service, which varies from 20.6% to 31.7% under the various options selected, would be significantly lower than the average farebox recovery for Amtrak long distance trains in FY2008 (51.8%). Farebox recovery for the two Seattle options for *Pioneer* restoration (Options 1 and 2) is lower than on all but one of Amtrak’s 15 existing long distance routes, and the Portland options have a lower farebox recovery than any Amtrak long distance route.

These four options and the proposed schedules associated with them are described further below. The times shown between Chicago and Denver or Salt Lake City are based upon the current *California Zephyr* schedules between those points.

The ridership and revenue estimates for the options that terminate in Portland assume that convenient connections would be available on *Cascades* trains to/from Seattle. (Most of the proposed *Pioneer* schedules would connect with existing *Cascades* trains, and Washington DOT, which provides funding for the *Cascades* service, has plans to increase frequencies.) For the Overland Route options (Options 2 and 4), connections to/from Salt Lake City via UTA FrontRunner trains would be available at Ogden.

1. Option 1: Salt Lake City-Ogden-Portland-Seattle (Rio Grande Route)

This was the route of the *Pioneer* until 1991. The route is 1,082 miles long. Through Chicago–Seattle cars operate on Amtrak’s *California Zephyr* via the Rio Grande Route between Chicago and Salt Lake City.

The proposed schedule for Option 1 is set forth below:

Pioneer - Option 1					
Proposed Train 25 Daily				Proposed Train 26 Daily	
2:00 PM	Dp	Chicago, IL	CT	Ar	3:50 PM
10:29 PM	Ar	Omaha, NE		Dp	6:14 PM
10:39 PM	Dp			Ar	5:59 PM
7:15 AM	Ar	Denver, CO	MT	Dp	8:10 PM
8:05 AM	Dp			Ar	7:38 PM
11:00 PM	Ar	Salt Lake City, UT		Dp	4:30 AM
1:00 AM	Dp			Ar	6:35 PM
2:00 AM	Ar	Ogden, UT		Dp	5:35 PM
2:02 AM	Dp			Ar	5:33 PM
4:40 AM	Dp	Pocatello, ID		Dp	2:26 PM
6:16 AM	Dp	Shoshone, ID (Twin Falls)		Dp	12:49 PM
8:36 AM	Dp	Boise, ID		Dp	10:38 AM
9:19 AM	Dp	Nampa, ID		Dp	9:52 AM
10:02 AM	Dp	Ontario, OR	MT	Dp	9:06 AM
10:57 AM	Dp	Baker City, OR	PT	Dp	6:11 AM
11:57 AM	Dp	La Grande, OR		Dp	5:06 AM
2:14 PM	Dp	Pendleton, OR		Dp	3:04 AM
2:57 PM	Dp	Hinkle-Hermiston, OR		Dp	2:12 AM
4:21 PM	Dp	The Dalles, OR		Dp	12:42 AM
4:49 PM	Dp	Hood River, OR		Dp	12:15 AM
6:30 PM	Ar	Portland, OR		Dp	10:58 PM
6:45 PM	Dp			Ar	10:43 PM
7:12 PM	Dp	Vancouver, WA		Dp	10:09 PM
7:52 PM	Dp	Kelso-Longview, WA		Dp	9:25 PM
8:41 PM	Dp	Centralia, WA		Dp	8:36 PM
9:05 PM	Dp	Olympia-Lacey, WA		Dp	8:12 PM
9:57 PM	Dp	Tacoma, WA		Dp	7:27 PM
11:05 PM	Ar	Seattle, WA	PT	Dp	6:30 PM

2. Option 2: Denver-Wyoming-Ogden--Portland-Seattle (Overland Route)

This is the route of the *Pioneer* when it was discontinued in May 1997. It is 1,624 miles long and runs from Denver to Seattle via the Overland Route through Wyoming. The *Pioneer* exchanges through Chicago-Seattle cars with the *California Zephyr* in Denver.

The proposed schedule for Option 2 is set forth below:

Pioneer - Option 2					
Proposed Train 25 Daily				Proposed Train 26 Daily	
2:00 PM	Dp	Chicago, IL	CT	Ar	3:50 PM
10:29 PM	Ar	Omaha, NE		Dp	6:14 AM
10:39 PM	Dp			Ar	5:59 AM
7:15 AM	Ar	Denver, CO	MT	Dp	8:10 PM
9:00 AM	Dp			Ar	5:36 PM
10:07 AM	Dp	Greeley, CO		Dp	4:05 PM
11:09 AM	Dp	West Cheyenne-Borie, WY		Dp	3:04 PM
12:13 PM	Dp	Laramie, WY		Dp	1:57 PM
2:02 PM	Dp	Rawlins, WY		Dp	12:18 PM
3:43 PM	Dp	Rock Springs, WY		Dp	10:28 AM
4:20 PM	Dp	Green River, WY		Dp	10:04 AM
6:00 PM	Dp	Evanston, WY		Dp	8:11 AM
8:28 PM	Ar	Ogden, UT		Dp	6:26 AM
8:48 PM	Dp			Ar	6:06 AM
11:18 PM	Dp	Pocatello, ID		Dp	2:56 AM
12:54 AM	Dp	Shoshone, ID (Twin Falls)		Dp	1:19 AM
3:14 AM	Dp	Boise, ID		Dp	11:08 PM
3:57 AM	Dp	Nampa, ID		Dp	10:22 PM
4:40 AM	Dp	Ontario, OR	MT	Dp	9:36 PM
5:35 AM	Dp	Baker City, OR	PT	Dp	6:41 PM
6:35 AM	Dp	La Grande, OR		Dp	5:36 PM
8:52 AM	Dp	Pendleton, OR		Dp	3:34 PM
9:35 AM	Dp	Hinkle-Hermiston, OR		Dp	2:42 PM
10:59 AM	Dp	The Dalles, OR		Dp	1:12 PM
11:27 AM	Dp	Hood River, OR		Dp	12:45 PM
1:08 PM	Ar	Portland, OR		Dp	11:28 AM
1:25 PM	Dp			Ar	11:13 AM
1:52 PM	Dp	Vancouver, WA		Dp	10:39 AM
2:32 PM	Dp	Kelso-Longview, WA		Dp	9:55 AM
3:21 PM	Dp	Centralia, WA		Dp	9:06 AM
3:45 PM	Dp	Olympia-Lacey, WA		Dp	8:42 AM
4:37 PM	Dp	Tacoma, WA		Dp	7:57 AM
5:44 PM	Ar	Seattle, WA	PT	Dp	7:00 AM

3. Option 3: Salt Lake City-Ogden-Portland (Rio Grande Route)

This option follows the same route as Option 1: through cars operate on the *California Zephyr* from Chicago to Salt Lake City via the Rio Grande Route. However, the *Pioneer* would terminate in Portland instead of Seattle. The route between Salt Lake City and Portland is 895 miles long.

The proposed schedule for Option 3 is set forth below:

Pioneer - Option 3					
Proposed Train 25 Daily				Proposed Train 26 Daily	
2:00 PM	Dp	Chicago, IL	CT	Ar	3:50 PM
10:29 PM	Ar	Omaha, NE		Dp	6:14 PM
10:39 PM	Dp			Ar	5:59 PM
7:15 AM	Ar	Denver, CO	MT	Dp	8:10 PM
8:05 AM	Dp			Ar	7:38 PM
11:00 PM	Ar	Salt Lake City, UT		Dp	4:30 AM
1:00 AM	Dp		Ar	6:35 PM	
2:00 AM	Ar	Ogden, UT		Dp	5:35 PM
2:02 AM	Dp		Ar	5:33 PM	
4:40 AM	Dp	Pocatello, ID		Dp	2:26 PM
6:16 AM	Dp	Shoshone, ID (Twin Falls)		Dp	12:49 PM
8:36 AM	Dp	Boise, ID		Dp	10:38 AM
9:19 AM	Dp	Nampa, ID		Dp	9:52 AM
10:02 AM	Dp	Ontario, OR	MT	Dp	9:06 AM
10:57 AM	Dp	Baker City, OR	PT	Dp	6:11 AM
11:57 AM	Dp	La Grande, OR		Dp	5:06 AM
2:14 PM	Dp	Pendleton, OR		Dp	3:04 AM
2:57 PM	Dp	Hinkle-Hermiston, OR		Dp	2:12 AM
4:21 PM	Dp	The Dalles, OR		Dp	12:42 AM
4:49 PM	Dp	Hood River, OR		Dp	12:15 AM
6:30 PM	Ar	Portland, OR		Dp	10:58 PM

4. Option 4: Denver-Wyoming-Ogden—Portland (Overland Route)

With this route (like Option 2), the *Pioneer* would originate in Denver, where it would exchange through cars to/from Chicago with the *California Zephyr*, and would operate via the Overland Route through Wyoming. However, the train would terminate in Portland rather than in Seattle. The route is 1,437 miles long.

The proposed schedule for Option 4 is set forth below:

Pioneer - Option 4					
Proposed Train 25 Daily				Proposed Train 26 Daily	
2:00 PM	Dp	Chicago, IL	CT	Ar	3:50 PM
10:29 PM	Ar	Omaha, NE		Dp	6:14 AM
10:39 PM	Dp			Ar	5:59 AM
7:15 AM	Ar	Denver, CO		Dp	8:10 PM
9:00 AM	Dp			Ar	5:36 PM
10:07 AM	Dp	Greeley, CO		Dp	4:05 PM
11:09 AM	Dp	West Cheyenne-Borie, WY		Dp	3:04 PM
12:13 PM	Dp	Laramie, WY		Dp	1:57 PM
2:02 PM	Dp	Rawlins, WY		Dp	12:18 PM
3:43 PM	Dp	Rock Springs, WY		Dp	10:28 AM
4:20 PM	Dp	Green River, WY		Dp	10:04 AM
6:00 PM	Dp	Evanston, WY		Dp	8:11 AM
8:28 PM	Ar	Ogden, UT		Dp	6:26 AM
8:48 PM	Dp			Ar	6:06 AM
11:18 PM	Dp	Pocatello, ID		Dp	2:56 AM
12:54 AM	Dp	Shoshone, ID (Twin Falls)		Dp	1:19 AM
3:14 AM	Dp	Boise, ID		Dp	11:08 PM
3:57 AM	Dp	Nampa, ID		Dp	10:22 PM
4:40 AM	Dp	Ontario, OR	MT	Dp	9:36 PM
5:35 AM	Dp	Baker City, OR	PT	Dp	6:41 PM
6:35 AM	Dp	La Grande, OR		Dp	5:36 PM
8:52 AM	Dp	Pendleton, OR		Dp	3:34 PM
9:35 AM	Dp	Hinkle-Hermiston, OR		Dp	2:42 PM
10:59 AM	Dp	The Dalles, OR		Dp	1:12 PM
11:27 AM	Dp	Hood River, OR		Dp	12:45 PM
1:08 PM	Ar	Portland, OR		Dp	11:28 AM

B. Scheduling and Routing Alternatives

1. Eastbound Schedules for Seattle Route Options

Under the proposed eastbound schedules for the Rio Grande Route Options (Options 1 and 3), the through Seattle/Portland–Chicago cars lay over in Salt Lake City for approximately ten hours between the time the eastbound *Pioneer* arrives and the departure of the eastbound *California Zephyr*. This far from optimal schedule is necessitated by the same consideration that led Amtrak to reroute the *Pioneer* east to Denver over the Overland Route in 1991: the need both to connect with the *California Zephyr* and to provide arrival/departure times at Portland and Seattle that are conducive to attracting passengers.

The lengthened schedule under which the *California Zephyr* has operated between Salt Lake City and Denver since the late 1980s, and the fact that the eastbound *Zephyr* departs Salt Lake City an hour earlier than it did in 1997, means that the eastbound *Pioneer* would have to depart Seattle around 4:00 AM to connect with the *Zephyr* in Salt Lake City. That is even earlier than the 5:20 AM departure that Amtrak found to be unmarketable before the train was shifted to the Overland Route in 1991. The proposed eastbound schedules for Options 1 and 3, under which all major cities are served at hours conducive to passenger travel (albeit with a long layover at Salt Lake City) generate significantly higher revenue and ridership than schedules with a shorter layover that would serve both Salt Lake City and Seattle in the middle of the night (or require Seattle passengers to spend a night in Portland if the train originated in that city).

2. BNSF Denver-Boulder-Cheyenne Line

Between Denver and the Cheyenne area, BNSF's Front Range Subdivision which runs through Boulder (home of the University of Colorado) and Fort Collins (home of Colorado State University) to Speer and Cheyenne, is a theoretical alternative to the former *Pioneer* route through Greeley. However, distances via the BNSF line are longer—14 miles longer between Denver and Speer (where there is no connection to the UP line) and 26 miles longer if the train operated over the BNSF line into Cheyenne (where there is a connection, but no access to UP's historic station in downtown Cheyenne). Moreover, maximum speed on the unsignalled BNSF line is only 49 mph; over 30 miles are restricted to 30 mph or less; and there is a 15-20 mph speed restriction on the six-mile segment of the line through downtown Fort Collins where trains run down the middle of Mason Street. While operation via the BNSF line is not feasible at the present time due to much longer trip times, it could be a viable alternative in the future if proposals to upgrade the line for high speed rail service come to fruition.

C. Schedule Development

The proposed schedules for the four options were created in what are called “Schedule Skeletons.” This type of analysis breaks down each schedule option into sub-segments between stations. The running times and actual train schedules developed through this process take into account authorized speeds and route characteristics on each segment. They also reflect the time required for acceleration and deceleration at station stops, and include allowances for possible train delays and miscellaneous adjustments for other factors that will impact running time.

The schedules are based upon:

1. Pure Running Time (PRT): The optimum or minimum time the train will take to operate between passenger stations and/or other pre-determined points, exclusive of station dwell time or delays.
2. Station Dwell Time: The normal amount of time included in schedules to accommodate activities at station stops, including the loading/unloading of passengers and baggage and (where applicable) crew changes, locomotive fueling and other train servicing requirements.
3. Schedule Recovery Time: Time added to a schedule to enable a train to “recover” to its public schedule after incurring delays. Recovery Time can take two forms:
 - Standard Recovery Time (SRT): Additional schedule time that is based on a percentage of PRT in a given segment—usually about eight percent. This time is intended to permit recovery from all delays, regardless of cause.
 - Additional Recovery Time (ART): Usually the time allotted for opposing passenger trains to meet in single-track territory. The amount of added time varies with individual schedules and configuration of the rail line—usually at least five minutes per passenger train scheduled to be met.

The schedules developed for all four options included a minimum of eight to ten percent SRT. This percentage takes into consideration that the host railroads should give passenger trains dispatching preference over freight trains, as required by Federal law, and also assumes that the rail line will be satisfactorily maintained so that passenger trains will not be burdened with an excessive level of slow-order delays.

For Options 1 and 2, the scheduled running time between Denver/Salt Lake City and Seattle is approximately 34 hours and 23 hours, respectively. For Options 3 and 4, the scheduled running time between Denver/Salt Lake City and Portland is approximately 30 hours and 19 hours. These times are equivalent to the *Pioneer's* running times between the same points in the 1980s and 1990s. Amtrak believes that these schedules can be reliably achieved due to:

- the recovery time built into them that is described above;
- anticipated capital investments to increase rail line capacity that would be undertaken in conjunction with reinstatement of the *Pioneer*; and
- host railroads' increased focus on the performance of Amtrak trains since enactment of PRIIA, which includes provisions aimed at improving on-time performance and ensuring passenger trains are granted preference over freight transportation as required by Federal law.

VI. RIDERSHIP AND OPERATING COST ANALYSIS

Ridership and revenue for each option were estimated utilizing models and data Amtrak has developed to measure the impact of new or changed services. The inputs included surveys of Amtrak’s long distance passengers, socio-economic data, and forecasts of population and income in the areas served by each station. The models take into account variations in ridership demand that are attributable to factors such as ticket prices; services offered by competing modes; the time of day at which stations are served and whether potential passengers are required to change trains in order to reach their destination, which negatively impacts ridership.

Surveys of Amtrak’s long distance passengers indicate that approximately two-thirds are traveling on “purpose trips,” including visits to family and friends and personal business (medical, legal, etc.). The remaining third are traveling for vacation or recreation purposes. A reinstated *Pioneer* would serve both of these markets due to the limited public transportation options in many of the communities the train would serve, and the scenery and vacation destinations along the route.

A. Ridership & Ticket Revenue Forecasts

Using the models and data described above and FY2009 as the baseline, Amtrak developed annual ridership and ticket revenue forecasts for each of the four proposed *Pioneer* service restoration options. The forecasted results are outlined in Table 5. The “total” forecast results are for the *Pioneer* route as it would be reported in Amtrak’s financial system. The “incremental” figures reflect the net impact of addition of the *Pioneer* on Amtrak’s systemwide ridership and revenues, including “cannibalization” of existing riders currently traveling on, for example, the *Empire Builder* Seattle–Chicago who would ride the restored *Pioneer* instead.

Table 5 - Forecast Results for the Reinstated *Pioneer* Service

Schedule	Ridership	Ticket Revenue
Option 1 - Salt Lake City-Seattle (Rio Grande Route)		
Total Rt.	114,100	\$13,001,000
Incremental	102,100	\$10,737,000
Option 2 - Denver-Seattle (Overland Route)		
Total Rt.	123,600	\$14,467,000
Incremental	111,400	\$12,116,000
Option 3 - Salt Lake City-Portland* (Rio Grande Route)		
Total Rt.	72,300	\$8,211,000
Incremental	82,000**	\$7,026,000
Option 4 - Denver-Portland* (Overland Route)		
Total Rt.	85,600	\$9,741,000
Incremental	94,600**	\$8,487,000

* Connections at Portland to *Cascades* trains for service to Seattle.

** Riders connecting to/from the *Cascades* are counted twice, on the *Cascades* and again on the *Pioneer*.

The figures above for the two Seattle options (Options 1 and 2) include local riders traveling only between Portland and Seattle (and intermediate points). However, given that the schedules of these options, which are driven by the schedules of the connecting *California Zephyr* and the need to serve Seattle/Portland at marketable times, operate relatively close to the schedules of existing *Cascades* frequencies, they generate very little incremental ridership between Seattle and Portland. (No changes in the schedules of state-supported *Cascades* trains were assumed, since this would require the concurrence of the Washington Department of Transportation.)

Table 6 below outlines the overall ridership/revenue route metrics for the restored *Pioneer*. The passenger miles per train mile are relatively high compared to the average riders per train (the total number of passengers traveling over some segment of the route) since the *Pioneer* is credited with the train miles generated between Chicago and Denver or Salt Lake City by *Pioneer* passengers traveling on the through cars carried on the *California Zephyr* between these points.

Table 6 - Metrics of Restored *Pioneer* Service

Schedule	Ridership	Average Trip Length (Mi)	Average Riders per Train	Pass. Miles per Train Mile	Ticket Revenue per Train Mile
Option 1 - Salt Lake City- Seattle via Rio Grande Route Total Rt.	114,100	910	156	131	\$16.46
Option 2 - Denver-Seattle via Overland Route Total Rt.	123,600	954	169	100	\$12.20
Option 3 – Salt Lake City-Portland* via Rio Grande Route Total Rt.	72,300	931	99	103	\$12.55
Option 4 - Denver-Portland* via Overland Route Total Rt.	85,600	942	117	77	\$9.28

* Connections at Portland to *Cascades* Corridor trains for service to Seattle.

B. Factors Impacting *Pioneer* Ridership

The proposed route of the *Pioneer* serves a region that has grown faster than the United States as a whole over the past 17 years. Population growth in the states along the route (Colorado, Wyoming, Utah, Idaho, Oregon, and Washington) increased by 41% compared to a 19% increase nationally. While median household income nationally grew 66% nationwide, median household income in these states grew by 78% during the same period. Estimated population directly served by the route totals about 11 million. This represents about 58% of the total population of the states along the route.

The *California Zephyr* connection is critical to the operation of the *Pioneer*, since a large portion of the projected revenue is generated by passengers whose trip includes travel on the *California Zephyr* east of Denver/Salt Lake City. The projected *Pioneer* schedules reflect the necessity of a reliable connection with the *California Zephyr* to exchange through cars. However, this operational requirement results in potential *Pioneer* schedules that, in some cases, provide sub-optimal times in key cities such as Salt Lake City, Seattle and Boise. Using the Overland Route, which has a shorter running time than the Rio Grande Route, mitigates some of these challenges. However, the Overland

Route has lower population and passenger miles per train mile, which translate into lower revenue per train mile, and significant additional mileage that increases operating and host railroad capital costs.

Projected *Pioneer* ridership is somewhat lower than actual ridership in the 1980s and 1990s that is depicted in Section II.C. In the major cities served by the *Pioneer* since the train's 1997 discontinuance, the already robust airline competition the *Pioneer* faced by the early 1990s, discussed in Section II.D, has increased markedly in the 12 years since the train's discontinuance due to the proliferation of low fare/high frequency airline service in all of the major city pairs on the *Pioneer* route.

Southwest Airlines, which began serving the region shortly before the *Pioneer's* discontinuance, has rapidly expanded its operations, particularly since its 2006 initiation of service at Denver. Three major airline hubs bracket the *Pioneer* route, including Denver International Airport, opened two years before the *Pioneer's* demise, where three major airlines have hub or hub-equivalent operations. The number of daily flights from Salt Lake City to Portland/ Seattle has increased from three in 1977 to 25 non-stops today, while Boise has nine non-stop flights each day to Seattle and eight non-stops to both Portland and Salt Lake City.

C. Operating Costs

Projected direct operating expenses for the *Pioneer* vary based on the route (Overland or Rio Grande) and western terminal (Portland or Seattle) selected. Not surprisingly, the options under which the *Pioneer* would operate longer distances as a separate train generally have higher operating costs. The principal cost categories, and the differences in costs among the various options, are discussed below.

The higher equipment requirements for the Portland Options (Options 3 and 4), which impact both operating and capital costs, are attributable to the fact that Amtrak has only limited equipment servicing facilities in the cities (Portland, Salt Lake City and Denver) between which the *Pioneer* would operate as a stand-alone train if terminated in Portland. This means that all of the *Pioneer's* equipment, including the locomotive and diner-lounge car that would be dropped/added at Salt Lake City or Denver under the Seattle Options, would have to operate through from Portland to Chicago, where it would be maintained.

1. Train and Engine/On-Board Service Employees

Depending upon the option selected, reinstating *Pioneer* service would require Amtrak to hire between 109 and 135 additional train and engine (T&E) employees (engineers, conductors, and assistant conductors) and on-

board service (OBS) personnel (food service employees and coach/sleeper attendants), as detailed below:

Table 7 - Incremental T&E/OBS Headcount

	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
T&E Crew	52	68	46	68
T&E Yard	1	2	1	2
OBS	56	58	75	65
Total	109	128	122	135

The number of T&E and OBS personnel required, and associated labor costs, were determined from proposed schedules, consist information, projected passenger loads, and service characteristics for each option. Table 8 below, depicts the estimated T&E and OBS labor and associated costs.

**Table 8 - Incremental T&E/OBS Costs
\$Million per Annum**

	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
T&E Labor (1)	6,400,000	9,800,000	5,500,000	9,400,000
Yard Ops, Transp Mgmt & Training	2,500,000	3,300,000	2,200,000	3,000,000
OBS Labor (2)	7,100,000	7,500,000	8,400,000	7,500,000
Total	\$16,000,000	\$20,600,000	\$16,100,000	\$19,900,000

2. Fuel

Fuel costs are estimated to range from \$4.4 million to \$6.7 million, depending on the option selected. Fuel cost estimates are based on an adjusted gross ton-mile model, which calculates fuel usage for each option based on train tonnage, mileage, gradient, and energy consumed in making station stops. The cost is then computed from a standard rate per million adjusted gross ton miles derived from actual results on existing trains. The

price basis used for the estimate is the average price per gallon for the first six months of FY09.

Table 9 - Fuel costs

Option	Cost
1 – Salt Lake City-Seattle via Rio Grande Route	\$4.4 million
2 - Denver-Seattle via Overland Route	\$5.4 million
3 – Salt Lake City-Portland via Rio Grande Route	\$5.7 million
4 - Denver-Portland via Overland Route	\$6.7 million

3. Mechanical

Mechanical estimates cover all car and locomotive maintenance costs (except fuel), including turnaround servicing, inspection and maintenance costs, and represent both labor and material costs. Fleet maintenance and other mechanical work would be performed primarily at Chicago or Seattle. The estimated increase in mechanical staff required for the *Pioneer* is between 16 and 20 persons, depending upon the option. Forecasted mechanical costs are detailed in Table 10 below.

Table 10 - Mechanical Headcount & Costs

	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
Incremental Headcount	20	20	16	16
Total Expenses (parts & labor)	\$7.7M	\$9.2M	\$7.2M	\$8.7M

4. Stations

All of the stations along the *Pioneer* route that Amtrak does not presently serve are assumed to be unstaffed under all options. Therefore, station employee headcount increases and non-labor station operating expenses would be minimal. Depending upon the option selected, additional station staff would be required at Salt Lake City, Portland, Tacoma, and Seattle, as depicted in Table 11 below, to accommodate additional *Pioneer* passengers or the additional hours that a station would remain open to serve the *Pioneer*.

At unstaffed stations, annual station operating costs are estimated at \$6,750 per new station, which is the average annual operating cost for

similar long distance stations. This figure includes utilities, communications, and other operating expenses.

Total station operating costs, including labor, range from \$1.5 million for Option 3 to \$2.0 million for Option 2, with the remaining options falling between the two values.

Table 11 - Incremental Headcount & Annual Cost for Station Operations

	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
Stations Staff:				
Salt Lake City	3	0	3	0
Portland	3	4	3	4
Tacoma	2	3	0	0
Seattle	3	7	0	0
Total Headcount	11	14	6	4
Total Costs (Staff & Operations)	\$1.8 M	\$2.0 M	\$1.5 M	\$1.7 M

5. Other Direct Costs

Remaining direct costs are estimated to range from \$5.4 million (Option 3) to \$9.0 million (Option 2). They include insurance, reservations, marketing and advertising, and host railroad costs. Host railroad costs represent Amtrak’s payments to the railroads (primarily UP) that own the tracks over which the *Pioneer* would operate. They reflect the incremental costs attributable to Amtrak’s operations, plus incentive payments for good on-time performance.

D. Operating Financial Summary

Annual revenue and operating costs are summarized in Table 12 below. Also shown are performance metrics that reflect comparative farebox recovery (the percentage of direct costs covered by ticket and food and beverage revenues) and financial performance per train or passenger mile.

Table 12 - Summary of Revenue, Expenses, and Performance Metrics

Description	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
Ridership & Revenue				
Total Annual Passengers	102,000	111,000	82,000	95,000
Total Annual Revenue	\$11,600,000	\$13,100,000	\$7,600,000	\$9,200,000
Annual Operating Expenses				
Fuel	4,400,000	5,400,000	5,700,000	6,700,000
T&E Labor (Train Operations)	6,400,000	9,800,000	5,500,000	9,400,000
Yard Ops, Transp Mgmt & Training	2,500,000	3,300,000	2,200,000	3,000,000
OBS Labor (On Board Services)	7,100,000	7,500,000	8,400,000	7,500,000
Mechanical	7,700,000	9,200,000	7,200,000	8,700,000
Stations	1,800,000	2,000,000	1,500,000	1,700,000
Remaining Direct Costs	6,700,000	9,000,000	5,400,000	7,700,000
Total Direct Costs	\$36,600,000	\$46,200,000	\$35,900,000	\$44,700,000
Performance Metrics				
Budget Impact (Revenue less Operating)	(\$25,000,000)	(\$33,100,000)	(\$28,300,000)	(\$35,500,000)
Farebox Recovery	31.70%	28.40%	21.20%	20.60%
Cost per Train Mile	47	39	56	43
Net per Train Mile	(32)	(28)	(44)	(34)
Revenue per Passenger Mile	0.13	0.13	0.13	0.13
Cost per Passenger Mile	0.42	0.46	0.61	0.62
Net Per Passenger Mile	(0.29)	(0.33)	(0.48)	(0.50)

VII. CAPITAL COSTS AND IMPLEMENTATION REQUIREMENTS

The reinstatement of *Pioneer* service would require significant capital investments and a major commitment of Amtrak personnel and resources. Capital expenditures will be required for new equipment, improvements to host railroad-owned tracks and infrastructure, and station restorations. There will also be one-time mobilization costs to hire, train, and qualify employees. This section presents a detailed discussion of these capital costs and implementation issues.

A. Host Railroad Capital Investments

Amtrak asked UP, the owner of the vast majority of the rail lines over which the *Pioneer* would operate, to provide Amtrak with its initial projections of capacity and other infrastructure improvements that UP believed would be needed to accommodate the *Pioneer* on UP's lines. UP prepared and submitted an initial feasibility study and preliminary capacity evaluation to Amtrak on July 15, 2009 (see Exhibit E, *Amtrak Pioneer Feasibility Study*).

Due to timing and resource constraints, UP was able to perform capacity modeling on only a portion of the route. UP's projected capacity requirements on the remainder of the route are based upon judgments of UP's planners. As indicated in UP's report, the assumptions UP used in its analysis were developed by Amtrak, and UP's projected capacity requirements reflect only an initial assessment not adopted or agreed to by either UP or Amtrak. If a decision is made to reinstate the *Pioneer*, Amtrak and UP would need to conduct further collaborative analyses, including capacity modeling and simulation of the entire route, to negotiate an agreed-upon level of investments.

1. UP Methodology

The methodologies UP employed for its initial analysis are summarized below.

a) Denver-Ogden-Pocatello

Between Denver and Pocatello, UP's proposed capacity investments are based upon the judgments of UP's planners. They evaluated the impact of adding the *Pioneer* to UP's freight operations and identified capacity investments that they believed would mitigate that impact.

b) Pocatello-Boise-Portland

On the Pocatello–Portland segment of the *Pioneer* route, UP used the Rail Traffic Controller (RTC) operations simulation program to assess the impacts of reinstating the *Pioneer*. RTC is widely used within the railroad industry for operations simulations to test the impacts of

proposed changes in train operations or infrastructure improvements. Inputs for RTC include trains running over the line and the times at which they operate, track configurations and signalization, maximum allowable speeds, speed restrictions, locomotive power, train weight and length, and train prioritization.

Using these variables, RTC routes trains across the line. When two trains meet on single track segments, the train having higher priority remains on the main line, while the train with lesser priority moves onto a passing siding, allowing the train with higher priority to pass. Essentially, RTC resolves conflicts between opposing trains in the same way as a human dispatcher using CTC.

Outputs for RTC include average speed and delay per 100 train-miles for both passenger and freight trains. Typically, an RTC simulation effort develops a base case, which accurately portrays the current (or current with projected growth) operations of various kinds of trains on a line. In subsequent iterations, trains are added to the line and operations along the network are modified, or new capacity enhancements (such as new sidings) implemented. The results of these iterations are measured against the base case to assess the impact of operational or infrastructure changes on average speeds and minutes of delay.

For the RTC simulation between Pocatello and Portland, UP planners first created a base case and then added the *Pioneer* to the existing traffic mix. Once the projected impacts of the *Pioneer's* introduction to the route were identified, UP's planners added various capital improvements to the route until train performance (measured in terms of speed and minutes of delay per 100 train miles) reached levels that UP deemed acceptable.

2. UP-Identified Potential Capital Improvements

The potential track, signal and other investments UP identified for reestablishment of the *Pioneer* are summarized below.

a) Greeley Subdivision (Denver–Speer, Wyoming)

UP planners stated that the line is at capacity. To provide additional capacity, they proposed that Amtrak fund capital improvements on UP's Julesburg Subdivision. This would allow four to six UP trains running between Denver and Omaha to be rerouted over the BNSF Brush Subdivision (on which the UP has trackage rights) from Denver to Union, Colorado, and thence over the Julesburg Subdivision from Union to Julesburg, Colorado to rejoin UP's line to Omaha.

b) Overland Route (Speer to Ogden)

This predominantly double track segment of the *Pioneer* Route consists of the Laramie, Rawlins and Evanston Subdivisions.

On the Laramie Subdivision, which runs from Speer, Colorado to Rawlins, Wyoming, UP proposed the installation of three universal crossovers to increase the number of locations where trains can shift from one track to the other. On the Rawlins Subdivision, which runs from Rawlins to Green River, UP proposed that 71 miles of track be converted from ABS to CTC to increase capacity, and that two universal crossovers be installed.

The Evanston Subdivision runs from Green River to Ogden. UP's report proposed no specific improvements on this segment, but instead recommended a more in depth analysis, including an RTC simulation to identify potential capacity requirements, if restoration of the *Pioneer* is pursued.

c) Ogden and Pocatello Subdivisions (Ogden–Pocatello)

The Ogden Subdivision runs between Ogden and McCammon, Idaho and the Pocatello Subdivision links McCammon with Pocatello, Idaho.

UP stated that operations on the Ogden Subdivision are slow, and also noted that the Ogden Depot is no longer connected directly to the UP main line. UP proposed four improvements on this subdivision: a track connection to the Ogden Depot with a powered (dispatcher-controlled) switch; installation of manual interlockings at Cache Junction and Brigham City; the extension of power switching of Coulam siding; and an upgrade of rail and ties.

d) Nampa and Huntington Subdivisions

The Nampa Subdivision runs between Pocatello and Nampa, Idaho. Based upon the RTC operations simulation, UP planners proposed two improvements here: signaling upgrades for six sidings to allow trains to enter the sidings at 30 mph rather than 15 mph, and a run-through track at Nampa Yard that would allow UP through freight trains to bypass the yard.

The Huntington Subdivision runs between Nampa and La Grande, just east of the Blue Mountains. UP proposed installation of an additional siding or second track in Baker City.

e) La Grande Subdivision

The La Grande Subdivision runs between La Grande and Hinkle, across the Blue Mountains. The line has steep grades that slow trains. UP proposed two improvements: a 2.5-mile extension of the double track westward from La Grande Yard to Hilgard, and a run-through track for freight trains at La Grande Yard.

f) Portland Subdivision

The Portland Subdivision runs between Hinkle and East Portland, mostly along the Columbia River. Based upon the RTC simulation, UP planners identified seven proposed projects, six of which are on the segment between Biggs and Portland. They include installing a run-through track at Hinkle Yard; CTC between Biggs and Crates; powering switches at Rowena Siding; extension of Hood River siding eastward by 10,000 feet; 10 miles of new double track along the Columbia River Gorge west of Hood River; a new siding on the Graham Line just east of Portland; and a reconnection of the Graham Line to Steel Bridge to enable the *Pioneer* to access Portland Union Station without the backup move necessitated by the removal of the connection.

3. Salt Lake City to Ogden

Under the Rio Grande Route Options (Options 1 and 3), the *Pioneer* would originate at Salt Lake City rather than Denver, and would operate between Salt Lake City and Ogden where it would join the Denver-Portland/Seattle route. On the 35-mile Salt Lake City–Ogden segment of the Rio Grande Route, there are two routing options: the UP Salt Lake Subdivision and the UTA FrontRunner line. Given the uncertainty as to which of these alternatives, or combination of them, a restored *Pioneer* operating over the Rio Grande Route would use, Amtrak did not undertake an assessment of rail line capacity on this relatively short segment.

As discussed in Section III.B.3, construction of a track connection would be required regardless of which route a *Pioneer* operating via the Rio Grande Route used between Salt Lake City and Ogden. In addition, Amtrak locomotives operating on the *Pioneer* would have to be equipped with the GE Ultracab 2-cab signal system used by UTA if the *Pioneer* operated over the UTA route, or operated via the UP route but served the UTA Ogden multi-modal station. The projected capital costs for the Rio Grande Route include the cost of constructing a track connection between the UTA and UP lines, and the cost of equipping a sufficient number of Amtrak locomotives with the cab signal system used by UTA.

4. Boise Cutoff

As discussed in Section II.B.2.d, current maximum speeds on the 44.3 mile Boise Cutoff are 25 mph or less, and approximately half of the line is out of service and used for freight car storage. Track upgrades will be necessary to restore the Boise Cutoff to passenger train standards. Based on a previous study and a general review conducted as part of this study, the initial projected cost of these improvements is \$13.5 million. Further assessment of the line including structures, drainage and other right-of-way-conditions, would be required to verify this assumption.

5. BNSF Portland-Seattle

Under Options 1 and 2, the *Pioneer* would operate from Portland to Seattle on the BNSF line used by Amtrak's *Cascades* and *Coast Starlight*. BNSF and the Washington State Department of Transportation (WSDOT) have recently completed a capacity study that identified capacity improvements needed to support four new state-supported *Cascades* round trips operating between Portland and Seattle. Capacity investments required to accommodate the *Pioneer* between Portland and Seattle would depend upon which of these investments identified in the BNSF-WSDOT study have been made, and the number of additional *Cascades* frequencies operating, at the time the *Pioneer* is restored. In addition, capital investments should not be necessary if a restored *Pioneer* supplants the Portland–Seattle *Cascades* frequency that is not currently state-supported. Therefore, no determination has been made of potential capacity investment requirements on the BNSF line.

B. Equipment Servicing Facilities

Depending upon the service restoration option selected, a reestablished *Pioneer* service would utilize the existing Amtrak layover and equipment servicing facilities in either Denver or Salt Lake City, and in either Portland or Seattle that are described in Section III.C.

As discussed in Section III.C, the current track and platform configurations at these locations, and the planned reconfiguration at Denver Union Station, should be sufficient to accommodate a restored *Pioneer*. Existing/planned mechanical facilities at Denver and Seattle should also be able to accommodate the *Pioneer's* equipment servicing requirements. If one of the Rio Grande Route Options (Options 1 or 3) under which the *Pioneer* originates at Salt Lake City, is selected, a fuel pad along with a head-end power (HEP) unit would be required at Salt Lake City for fueling and servicing. Modest mechanical enhancements may also be required at Portland if either Option 3 or 4, under which the *Pioneer* would terminate at Portland, is selected. The

relatively small costs for these items have not been quantified in the capital cost projections.

C. Positive Train Control

The Railway Safety Improvement Act of 2008 (RSIA) requires installation of positive train control (PTC)—an advanced collision prevention system—by 2015 on rail lines owned by Class 1 (major) freight railroads that handle over five million gross tons of traffic annually and are used by either (i) passenger trains or (ii) freight trains carrying toxic-by-inhalation (“TIH”) chemicals. RSIA also directs the Federal Railroad Administration (FRA) to determine to what extent PTC should be required on other rail lines used by passenger trains.

FRA’s proposed PTC regulations, issued in July of 2009, would require installation of PTC on virtually all rail lines on which passenger trains operate. However, there is an exception for lines on which “temporal separation can be achieved”, i.e., passenger and freight trains do not operate at the same time.

On virtually all of the lines over which the *Pioneer* would operate, Amtrak expects that the freight railroads will be required to install PTC, regardless of whether the *Pioneer* is reinstated, because of the volume of freight traffic and the presence of TIH shipments. The one place where that is not the case is the Boise Cutoff. However, because of the short length of the Boise Cutoff and the very limited freight operations on it, Amtrak presently anticipates that temporal separation should be possible, eliminating the need to install PTC is the *Pioneer* is reinstated.

Due to the implementation of PTC, Amtrak will be required to equip all of its locomotives with onboard PTC equipment. The projected capital costs shown below include the costs of installing such equipment on the additional Amtrak locomotives that would be required to operate the *Pioneer*.

D. Host Railroad Capital Improvement Summary

Table 13 below lists the track and signal-related capital investments on host railroads described above and their projected costs. The investments identified on the Overland Route (Options 1 and 3) total \$324.1 million; on the Rio Grande Route (options 2 and 4), the total is \$217.7 million.

These figures are subject to significant uncertainty. As discussed above, the majority of the identified investments are based upon an initial analysis by UP. If a decision is made to proceed with reinstatement of the *Pioneer*, further analyses and negotiations would be required to determine the investments needed. Future freight traffic levels, and the *Pioneer* routing/scheduling option selected, could significantly impact that determination. For example, the schedules Amtrak provided for the UP analysis assume that the eastbound and

westbound *Pioneers* would meet in the Columbia River Gorge area, where UP proposed major investments. Under the Rio Grande Options (Options 1 and 3), the trains would meet elsewhere. In addition, potential capacity investments for the options under which the *Pioneer* would operate between Salt Lake City and Ogden, and between Portland to Seattle, have not been quantified.

Table 13 - Track and Signals Capital Investments Identified (\$M)

Location/Description	Options 1 & 3 (SLC-Portland/Seattle via Rio Grande)	Options 2 & 4 (Denver-Portland/ Seattle via Overland)
Denver to Greeley		
CTC Sand Creek to Denver Union Terminal		\$ 5
Connect to BNSF at Commerce City		18
Upgrade Rail and Ties on Julesburg Sub		15
Laramie Subdivision		
Three universal crossovers		21
Rawlins Subdivision		
Two universal crossovers		14
70 miles CTC installation		36
Salt Lake City, Utah		
Construct connection to UTA	\$5	
Ogden Subdivision		
Construct connection to Ogden Depot		5
Install manual interlocking at Brigham City	5	5
Install manual interlocking at Cache Jct.	5	5
Extend and power Coulam siding	7	7
Upgrade Rail and Ties on Ogden Sub	25	25
Nampa and Huntington Subdivisions		
Bond six sidings to increase speed to 30 mph	4	4
Upgrade run-through track at Nampa	5	5
Construct 3 miles 2nd MT on Huntington sub	10	10
Boise Cutoff		
Track improvements	13.5	13.5
La Grande Subdivision		
Construct run-through track at La Grande	7	7
Connect Perry 2MT to Hilgard Siding (2.5 mi)	10	10
Portland Subdivision		
Construct run-through track at Hinkle	7	7
Power Univ Crossover at Oregon Trunk Jct.	8	8
Construct universal crossover at The Dalles	8	8
Install CTC Crates to Biggs (The Dalles)	11	11
Install power turnouts at Rowena	3	3
Extend Hood River siding eastward to 10,000'	10	10
Construct 10 miles 2nd MT in Columbia River Gorge	50	50
Construct siding on Graham Line	10	10
Connect Graham Line to the Steel Bridge (may require double-slip turnouts at East Portland Jct.)	10	10

Carborne signaling equipment		
Amtrak Onboard PTC	2.4	1.6
Amtrak Onboard ATP (UTA)	1.8	
Estimated Total*	\$217.7	\$324.1

E. Stations

Exhibit B identifies the capital investments, discussed in Section IV, required to bring the 19 Potentially Reinstated Stations to a state of good repair and into compliance with the ADA. For the Overland Route (Options 2 and 4), the projected cost is \$15.6 million. The Rio Grande Route options (Options 1 and 3) have a projected stations capital investment cost of \$9.5 million to \$10.3 million, as only 11-12 of these stations would be served.

F. Equipment Requirements

Table 14 below, depicts the additional cars and locomotives (not including spare equipment to accommodate maintenance requirements) that would have to be added to Amtrak’s active fleet for each option. As discussed in Section VI.C, these figures are based on the assumptions that:

- each *Pioneer* (west of Denver/Salt Lake City) would be comprised of one locomotive and four Superliner cars: a coach, baggage-coach, sleeper, and diner/lounge;
- the coach, baggage-coach, and sleeper would operate from Chicago-Seattle; and
- the locomotive and diner-lounge would operate from Denver or Salt Lake City to Seattle under Options 1 and 2, and from Chicago to Portland under Options 3 and 4.

Table 14 - Equipment Requirements

Equipment Units Required	Option 1	Option 2	Options 3 & 4
Locomotives	5	4	6
Superliner Bag Coach	7	6	6
Superliner Coach	7	6	6
Superliner Sleeper	7	6	6
Superliner Diner/Lounge	5	5	6
Total	31	27	30

The projected cost to acquire the equipment required is:

- \$141 million for Option 1 (Salt Lake City–Seattle);
- \$123 million for Option 2 (Denver–Seattle); and
- \$138 million for Options 3 and 4 (Denver or Salt Lake City to Portland).

These projections reflect the fact that all or virtually all of the equipment required for *Pioneer* restoration would have to be purchased new. Despite growing ridership, Amtrak’s long distance equipment fleet is smaller now than it was when the *Pioneer* operated. Due to funding constraints, Amtrak has not ordered any new long distance equipment since the early 1990s, and most of the “Heritage” cars built for other railroads that Amtrak acquired at its formation have been retired due to age. Amtrak’s existing fleet of bi-level Superliner cars is insufficient to meet equipment requirements on the nine long distance trains that currently use Superliner equipment, and Amtrak has only a small number of repairable “wreck status” Superliner cars. In addition, if Amtrak is to continue to provide existing services on long distance routes, it must in the very near future replace nearly 100 remaining “Heritage” cars that are now more than half a century old.

Amtrak has recently issued a request for proposals for the acquisition of 130 single-level long distance cars, primarily to replace the remaining Heritage cars (although funding for this purchase has not yet been identified). Purchasing additional single-level cars to equip a restored *Pioneer* would not be an optimal solution. Single level cars would accommodate fewer passengers, and operation of single-level *Pioneer* cars to/from Chicago on the bi-level *California Zephyr* would trigger a need for additional Superliner “transition” cars (which are in particularly short supply) equipped with a high-level door one end and a single-level door on the other.

A purchase of new bi-level equipment for the *Pioneer*, which would take approximately four years for design, procurement and construction, would have to be part of a larger equipment order. The high upfront design and tooling costs associated with building passenger rail cars make it uneconomic to construct them in small quantities. Amtrak is preparing a comprehensive equipment fleet strategy that will, among other things, address the existing shortage of bi-level Superliner cars that limits capacity on Western long distance trains. An order for new bi-level equipment, which would be subject to funding availability, could provide the means to acquire additional equipment for new services such as a restored *Pioneer*.

G. Staffing Requirements

In addition to physical requirements and equipment, approximately 140-162 additional Amtrak personnel would be required for operation of the *Pioneer*, as detailed under “Operating Costs” in Section VI. The number of new employees is dependent on the route option selected, and is detailed below.

Table 15 - Incremental Headcount

	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
Stations	11	14	6	4
T&E Crew(1)	52	68	46	68
T&E Yard	1	2	1	2
OBS(2)	56	58	75	65
Mechanical	20	20	16	16
TOTAL	140	162	144	156

(1) T&E–Train and Engine employees (engineers, conductors, and assistant conductors)

(2) OBS–On-Board Service employees (food service and coach/sleeper attendants)

The one-time costs to train new employees including training on work rules and the operation of Amtrak equipment, and the lengthy process mandated by federal safety regulations for certifying engineers and qualifying engineers and conductors to operate over specific territories, are shown below. Host Railroad T&E costs are projected reimbursements to host railroads (primarily UP) for providing their engineers and conductors for the qualification process.

Table 16 - Training & Qualifying Costs (\$M)

	Option 1		Option 2		Option 3		Option 4	
	New Positions	Cost	New Positions	Cost	New Positions	Cost	New Positions	Cost
Amtrak								
OBS	56	0.3	58	0.3	75	0.3	65	0.3
T&E	52	3.7	68	5.0	46	3.3	68	5.0
Host Railroad T&E (1)	n/a	0.9	n/a	1.3	n/a	0.9	n/a	1.3
Total		\$4.9		\$6.6		\$4.5		\$6.6

1) Assume 18 trips, 2 engineers and 2 conductors required from host railroad for each Amtrak segment.

H. Summary of Capital/Implementation Costs

Below is a summary of the capital/implementation costs projected for reinstatement of the *Pioneer*:

Table 17 - Summary of Implementation Costs (\$M)

	Option 1 SLC-Seattle via Rio Grande Route	Option 2 DEN-Seattle via Wyoming / Overland Route	Option 3 SLC-Portland via Rio Grande Route	Option 4 DEN-Portland via Wyoming / Overland Route
Training/Qualifying	4.9	6.6	4.5	6.6
Tracks & Signals	217.7	324.1	217.7	324.1
Stations	10.3	16.1	10.3	16.1
Equipment	141.0	123.0	138.0	138.0
TOTAL	\$373.9	\$469.8	\$370.5	\$484.8

VIII. IMPLEMENTATION TIMELINE

Of the many actions that would have to be taken before reinstatement of *Pioneer* service, the one with the longest identified projected lead time that must be completed before service is restored is the design, procurement and construction of new Superliner bi-level passenger rail cars. This would require approximately four years from the date on which funding is made available.

The reinstatement of *Pioneer* service would also require significant infrastructure improvements, including work on stations, track and signals, that would be undertaken by or would significantly involve third parties. Amtrak would need to reach agreements with these parties before each project could commence, and some of the work will be subject to permitting, environmental, and/or other legal/regulatory requirements or processes. In addition, Amtrak would have to hire and train a significant number of new employees. While many of these activities would have long lead times, Amtrak believes that most or all of the activities required for commencement of reinstated *Pioneer* service could be completed within the approximately four year time frame required for the acquisition of new equipment.

IX. PUBLIC OUTREACH

During the course of this study, Amtrak conducted extensive outreach to state agencies, communities, host railroads and other stakeholders that it expected to have an interest in a renewed *Pioneer* service. These stakeholders included the following:

State Departments of Transportation (DOT):

- Washington State Department of Transportation
- Oregon Department of Transportation
- Idaho Transportation Department
- Utah Department of Transportation
- Colorado Department of Transportation
- Wyoming Department of Transportation

Key Municipalities:

- Seattle
- Portland
- Boise
- Pocatello
- Ogden
- Salt Lake City
- Cheyenne
- Denver

Other Stakeholders:

- Union Pacific Railroad, a host railroad
- BNSF Railway, a host railroad
- Denver Regional Transit District (RTD), owner of Denver Union Station
- Utah Transportation Authority, a potential host railroad
- Idaho Northern and Pacific Railroad, a potential host railroad
- Sounder commuter rail service, commuter rail service operator between Tacoma and Seattle
- Various organizations and advocacy groups

Amtrak conducted several regional meetings with the DOTs and members of the congressional delegations at various points along the *Pioneer's* route. Those who attended these meetings expressed a very high degree of regional interest in this study, and strong support for restoration of the *Pioneer*. The opportunities and challenges related to the train's restoration were addressed, along with the dynamics of the various routing options. The meeting attendees expressed a strong desire for an opportunity to comment on the draft report and route options.

Wyoming raised regional equity issues, noting that the states of Colorado and Utah already have Amtrak service from the *California Zephyr* (and Colorado has the *Southwest Chief*), while Wyoming lost its service when the *Pioneer* was discontinued. Additionally, there are few other public transportation services in the state. According to the Wyoming Department of Transportation and others, the degree of support among the local mayors is high, and they have a basic understanding of the need to become engaged in station restoration.

On the other hand, Utah stated a preference for the Rio Grande Route because it would provide service from the Pacific Northwest to the Utah communities served by the *California Zephyr*, primarily Salt Lake City and Provo, that would not be served by the Overland Route. Washington, Oregon and Idaho also expressed a preference for the Rio Grande Route, since it would link their communities to the regionally significant destinations of Salt Lake City, Provo, Glenwood Springs, Colorado, and Winter Park, Colorado. Utah and Oregon expressed a perception that ridership on the *Pioneer* was adversely impacted when it was routed via Wyoming from 1991 to 1997. (This issue discussed in Section II.C.)

In addition to the above referenced DOTs, the meetings also included representatives from the following:

- Denver RTD
- Representative DeGette
- Representative Salazar
- Senator Enzi
- City of Cheyenne
- Cheyenne-Laramie County Corporation for Economic development
- Cheyenne Convention & Visitors Bureau
- Senator Barrasso
- Senator Hatch
- Senator Bennett
- Senator Udall
- City of Boise
- Senator Risch
- Senator Crapo
- Senator Wyden
- Representative DeFazio
- Representative Simpson
- Senator Merkley
- Representative Blumenauer
- Idaho Northern Pacific Railroad

Amtrak also developed a website to disseminate information about the study. The website included a secure portion, which could only be accessed by selected

stakeholders such as members of Congress and their staffs and state DOTs, to provide a method for these stakeholders to comment on the draft report.

X. PUBLIC BENEFITS

Reinstating the *Pioneer* would increase travel options and mobility in the Intermountain West states the train would serve. It would also enhance Amtrak's route system by providing access to additional cities, and by directly connecting key city pairs such as Denver to Portland. The capital investments required to initiate the service would provide a short-term economic stimulus, while the operation of the train would provide long-term economic benefits to communities along the route.

A. Travel Options and Mobility Enhancements

Reinstating *Pioneer* service would restore a key central corridor link between the Midwest and Rocky Mountain States and Idaho and the Pacific Northwest. This would enhance connectivity within Amtrak's route network, and facilitate travel between city pairs for which no passenger rail service or only very circuitous service is currently available.

Reinstated rail passenger service would add another transportation option in communities with little or no public transportation service. Such an option is particularly vital during the winter months in a region of the country that receives heavy snowfall. For seniors and others unable to undertake the long drives associated with western highway travel, the *Pioneer* would be a welcome alternative. For those who cannot drive or do not own a car, and for persons who are unable to fly, a reinstated *Pioneer* would provide a truly essential service.

Restoration of the *Pioneer* would play a particularly important role in the 12 communities along the route that lack convenient access to air service and have only limited intercity bus service. While airline deregulation has made air service between the major cities served by the *Pioneer* much more frequent and much less expensive, that is not the case in the smaller communities along the route. Airline service in these communities is much less convenient and much more expensive than it was when the *Pioneer* operated.

The decline in intercity bus service along the route of the *Pioneer*, discussed in Section II.D, has continued since the train's 1997 discontinuance. Current Greyhound Lines schedules (June 2009) show just two daily round trip frequencies along most of the *Pioneer's* route, and one-seat bus service is no longer available from Seattle to Boise, Salt Lake City and Denver.

B. Environment and Energy Efficiency

The reinstated *Pioneer* would represent a small but important step in reinforcing the development of a transportation network independent of the automobile. The *Pioneer* would increase passenger rail service to Portland, a city that is a leader in developing a pedestrian and transit friendly metropolitan area. Three other key *Pioneer* stops, Seattle, Denver, and Salt Lake City, also are developing transit networks focused around their rail stations. Boise deserves special mention for acquiring its rail station and eastern rail link to provide for future rail service.

The reinstated *Pioneer* also represents a step in efforts to improve energy efficiency and lower greenhouse gases. Rail passenger service is 17% more energy efficient than air travel and 21% more energy efficient than auto travel. Rail service also emits several times less carbon dioxide per passenger-mile than either air or highway travel.

C. Economic Development

Reinstating rail service along the route of the *Pioneer* would have a positive impact on job creation, local/state tax revenues and tourism activity in the region.

The capital expenditures required to restore service would produce significant economic activity and job creation. While short-term in nature, these expenditures would benefit local and state economies and create jobs in the region, primarily in construction and construction supply. They would also create manufacturing and material supply jobs that could be located in the region or elsewhere in the United States.

Operation of the service is projected to create between 140 and 162 permanent Amtrak jobs, depending upon which option is chosen. Overnight layovers for train crews would lead to expenditures for food, supplies and lodging that will benefit local economies. Restoration of the *Pioneer* would also generate new spending from vacation travelers who use the train to visit destinations along the *Pioneer's* route.

These short-term and long-term direct expenditures can be expected to produce spillover economic benefits. These include job creation in other industries such as retail trade and tourism, and an increase in state and local tax revenues attributable to the increased economic activity.

Finally, in smaller communities along the route of the *Pioneer*, reinstatement of passenger rail service could be the impetus to restoring historic downtown rail stations and using them as a focal point for downtown revitalization, stimulating both public and private investment.

XI. CONCLUSION AND NEXT STEPS

The addition of the *Pioneer* and other long distance routes to the Amtrak national network could produce numerous public benefits, albeit at a significant cost. While P.R.I.I.A. recognizes the importance of Amtrak's existing long distance routes, it does not provide capital or operating funding for expansion of service beyond current levels. Therefore, additional federal and/or state funding would be required for any service expansion.

The \$8 billion in intercity passenger/high speed rail capital funding made available earlier this year by the American Recovery and Reinvestment Act (ARRA), and the additional \$5 billion that the Administration has indicated it intends to request Congress to appropriate for this purpose over the next five years, represents a significant source of funding for capital costs associated with the expansion of intercity passenger rail service. Since the *Pioneer* route is not a federally designated high speed rail corridor, one or more states along the route would have to be an applicant or co-applicant for ARRA funding. Funding for the cost of operating the service would have to be obtained from other federal and/or state sources, since ARRA funding cannot be used for that purpose.

Amtrak recommends that Federal and state policymakers determine if passenger rail service should be reintroduced along the former *Pioneer* route, and if so, that they identify the preferred option for service restoration and provide the required levels of capital and operating funding to Amtrak. Upon such a decision, Amtrak will work aggressively with Federal and state partners to restore the *Pioneer* service.

XII. EXHIBITS