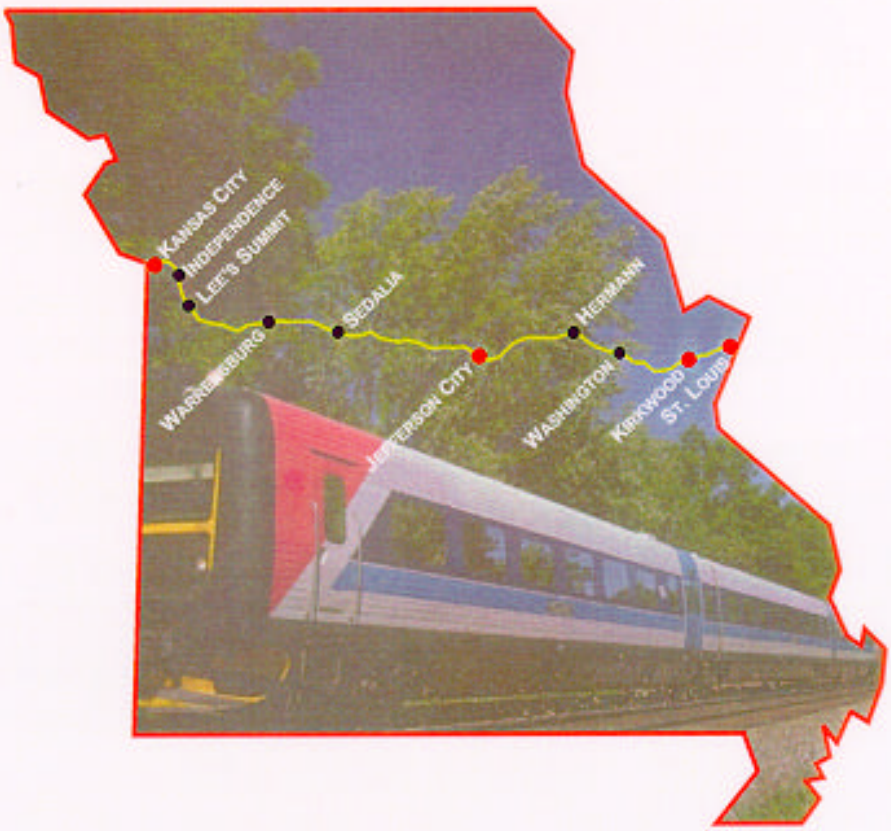
MISSOURI DEPARTMENT OF TRANSPORTATION



EVALUATION OF PASSENGER RAIL SERVICE: ST. LOUIS TO KANSAS CITY

EXECUTIVE SUMMARY

December 1998

Prepared by:

Corporate Strategies, Inc.

In Association with:

Science Applications International Corporation
An Employee-Owned Company

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EXECUTIVE SUMMARY

OVERVIEW

In August 1998, the Missouri Department of Transportation (MoDOT) contracted with Corporate Strategies, Inc. (CSI), in association with Science Applications International Corporation (SAIC), to evaluate state supported passenger rail options between St. Louis and Kansas City.

The purpose of the study is to stem rising subsidy costs for these operations and to provide the legislature with guidance for future investments in Missouri rail passenger services. A valuable by-product of this study is information useful in current negotiations with Amtrak concerning subsidy payments for Fiscal Year 2000, commencing July 1, 1999.

This Executive Summary highlights key findings from each chapter in the full report, including principal study conclusions and recommendations (action plan).

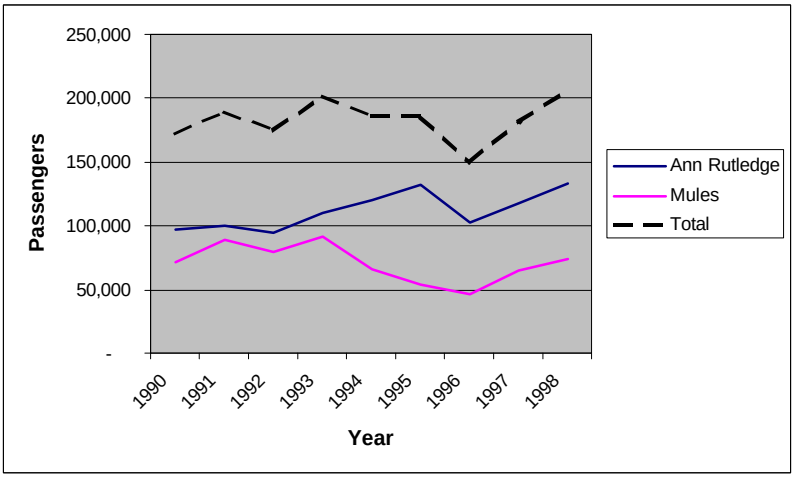
I. INTRODUCTION

Review of Passenger Service

Amtrak, under contract with the State of Missouri, provides two daily round trips between Kansas City and St. Louis. These two round trips are represented by the Mules (train numbers 301/306) which operate between St. Louis and Kansas City and the Ann Rutledge (train numbers 303/304) which operate between Chicago and Kansas City via St. Louis. While traffic has grown in recent years, significant ridership declines between 1994 and 1996 have only recently been recouped. Ridership in 1998 (boardings and de-boardings in Missouri) is only marginally higher than in 1993 (shown in Exhibit 1).

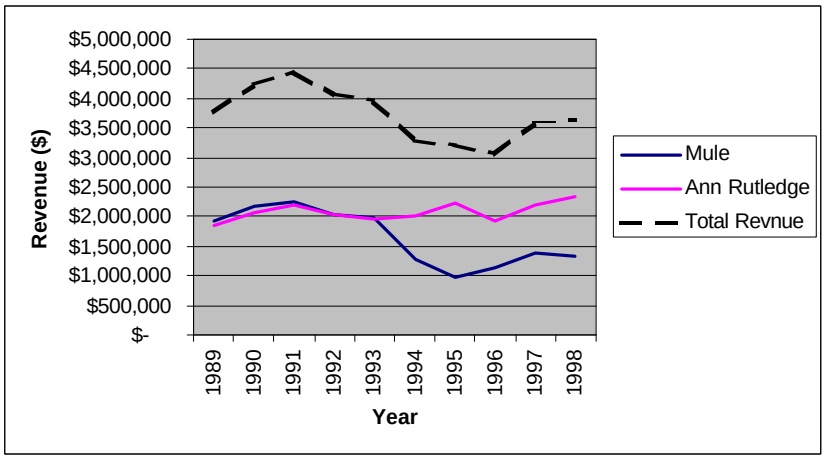
The pattern in revenue is similar to the ridership pattern. Exhibit 2 summarizes revenues for the two trains.

EXHIBIT 1
ST. LOUIS – KANSAS CITY RIDERSHIP



Source: Amtrak

EXHIBIT 2
MISSOURI ATTRIBUTABLE REVENUES

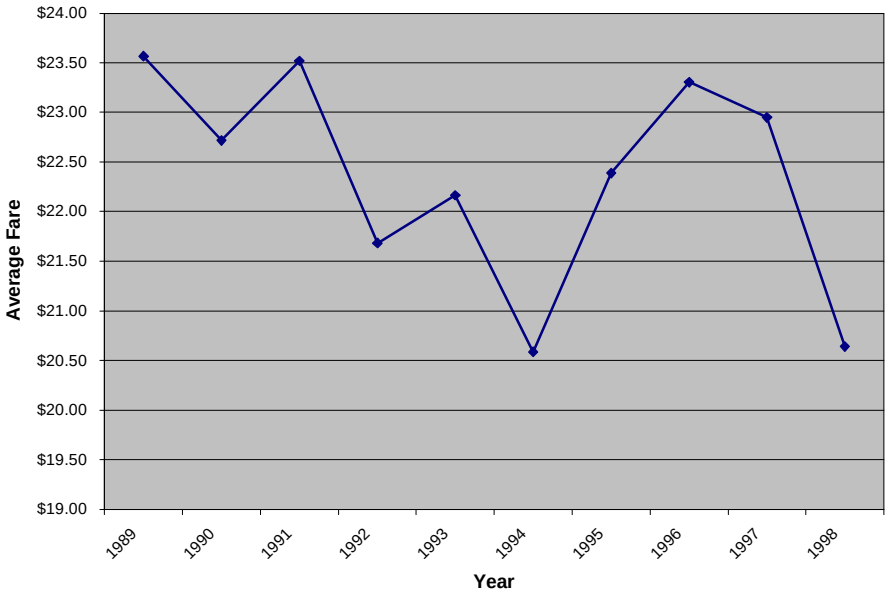


Source: Amtrak

Even though ridership is approximately at its historical peak, revenues are only about 80 percent of their 1991 peak. Though ridership is again rising, average fares are lower, as shown in Exhibit 3.

Under its December 1994 Strategic Business Plan, driven by a Congressional mandate to phase out all operating subsidies, Amtrak began a program to obtain full cost recovery on state supported trains. As a result, payments to Amtrak by Missouri (and other states) have risen sharply in recent years.

EXHIBIT 3
AVERAGE FARES: ST. LOUIS – KANSAS CITY SERVICE



Source: Amtrak

Missouri State Support

In fiscal year 1997, Missouri's support for Amtrak service was $3.52 million. In FY 1998, that support increased to $4.59 million. In Fiscal Year 2000, Amtrak is requesting that Missouri pay $6.5 million to continue state supported services, based on full cost recovery.

While Amtrak's costs are substantially greater than the "best practice" a third party operator might be able to achieve, it has some capabilities that are difficult for other providers to match. For example, Amtrak brings guaranteed right of access to freight lines provided by the Rail Passenger Services Act (1971). They have an existing reservation system, provide connections to other trains, provide nationwide marketing, and have limited liability. Amtrak also has national recognition.

Study Objectives

The Missouri Department of Transportation needs to improve the benefit/cost ratio of state supported passenger services. Accordingly, study objectives were to:

- Review current state supported operations;
- Review Amtrak rates, charges, and costs;
- Examine existing market and future market opportunities;
- Examine equipment, schedule, and third party alternatives; and,
- Prepare recommendation for implementing improved, more cost effective services.

II. MARKET IDENTIFICATION AND ANALYSIS

On-Board Survey

An on-board passenger survey was conducted over an eight day period in September, 1998. Based on the survey, the median age of rail passengers was in the mid-40's. Median family income is around $45,000 per year. About half of all passengers are taking their first rail trip in the Missouri corridor in more than three years. More than 80 percent of travelers are on vacation/leisure trips or conducting personal/family business.

Among passengers surveyed, the largest occupation group was professional/ managerial, at 25 percent of all respondents. The next group was students at 19 percent, retirees/not working at 18 percent and homemakers at 10 percent. Over 45 percent of passengers learned of Missouri Rail service via word of mouth, 20 percent through advertising, and 10 percent through travel agents. The remaining 25 percent could not recall or learned of the service from another source.

Not surprisingly, the train diverts mainly automobile traffic. Survey responses imply that 67 percent of travelers would travel by auto if the train was not available, 22 percent would fly, 7 percent would ride the bus and 4 percent would not travel. This heavy diversion from automobile is reflective of the concentration of leisure travelers on the Missouri trains[1].

Service Evaluation by Passengers

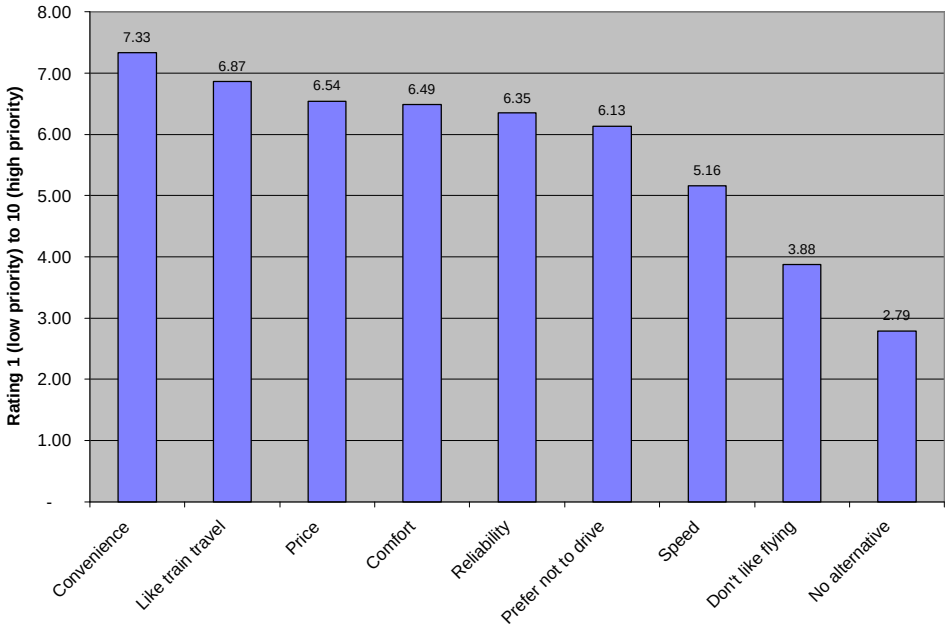
The service is well liked. The most general question asked passengers to rate overall

[1] Business passengers are much more likely to be airline passengers or drive due to their sensitivity to travel time and insensitivity to cost.

service on a scale of 1 (poor) to 10 (excellent). The average response was over 8.4 indicating a service well suited to the passengers served by it. Since nearly half of all passengers surveyed are taking their first trip in over three years, Amtrak is impressing the majority of new passengers.

People choose modes of transport based on numerous criteria which typically vary in importance from trip to trip. The perceived value or benefit encompasses all the attributes of a trip including price, convenience (schedules), trip times (speed), trip time variability (reliability), comfort, and general preference. Exhibit 4 summarizes the priorities of surveyed passengers on the Missouri trains.

EXHIBIT 4
PASSENGER REASONS FOR CHOOSING TRAIN



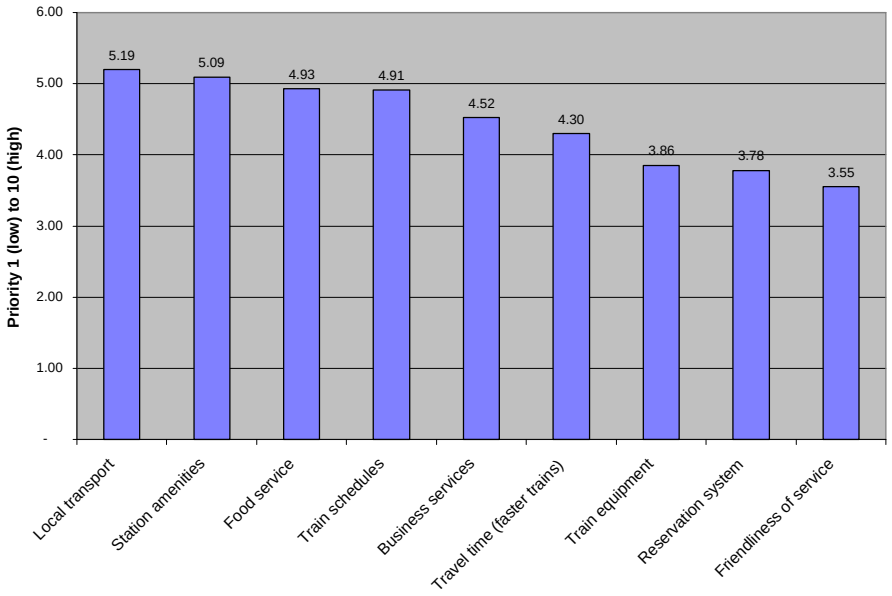
The experiences of passengers help to suggest what should be emphasized and avoided in order to secure repeat patronage, but it does not provide a true picture of what to do to attract new ridership.

Ratings on station amenities seems high given the relatively poor condition of many stations, suggesting that passengers are more tolerant of (or used to) poorly maintained or marginal facilities.

Passengers were also asked what areas require improvements and to assign priorities to them. Priorities listed by survey respondents are summarized in Exhibit 5.

In general, passengers are satisfied with current service. They enjoy train travel and this service lives up to their expectations. The majority of passengers are leisure travelers and the survey responses reflect the satisfaction of those passengers. Amtrak's performance on the route appears to satisfy the demands of most passengers. Passengers believe that the top three items requiring improvements are; 1) availability of local transportation at stations, 2) station facilities, and 3) food service.

EXHIBIT 5
PASSENGER PRIORITY FOR IMPROVEMENTS



Community Survey

A broad based community survey was conducted to gauge attitudes about Missouri train service in the communities along the St. Louis to Kansas City corridor. Over eight thousand surveys were mailed.

Response to the survey was surprisingly strong with about 1400 surveys returned – a response rate of almost 18 percent. Not only are citizens interested in rail passenger service, the responses were highly favorable with nearly 80 percent of respondents believing that Amtrak service was a community asset.

It is not known whether citizens who returned surveys were predisposed toward train travel[2] but, even if every non-respondent thought rail service was not an asset (highly unlikely), 15 percent of the total population would still support the service – a significant constituency. Not only are community respondents positive toward passenger rail service, 90 percent of those would consider taking the train for some purpose. The interest and inclination is there, but there is clearly a wide gulf between those who support the service and those that actually use it.

Not surprisingly, most survey respondents were interested in taking the train to St. Louis and Kansas City or adjacent suburban stations. Jefferson City was a close third while Hermann, with its strong tourist attractiveness, was fourth.

Community survey respondents were more likely than on-board passenger survey respondents to consider the train for business use. Only nine percent of surveyed on-board passengers used the train for business travel while 17 percent of community survey respondents were interested in this type of travel.

Results of the community survey suggest that leisure travelers will continue to dominate

[2] The community survey was not a random sample since respondents could choose to ignore the survey. Presumably, citizens indifferent to the service would tend to ignore the survey. The sample is expected to be biased toward those who feel strongly (positive or negative) about Amtrak or passenger rail service generally.

travel on the St. Louis – Kansas City route. The business market, however, offers a growth opportunity. Business travelers, however, will not be as forgiving as leisure travelers of inconveniences or failure to perform as advertised.

Leisure travelers are generally not very sensitive to time of day and trip speeds while business travelers are much more sensitive to these attributes. Any rearrangement of schedules to facilitate business travel is not likely to drive away many leisure travelers as long as departures and arrivals are not too early in the morning or late at night.

Survey responses offering reasons for not using the train illuminate some areas that should be improved. Needing a personal vehicle at the final destination is a major impediment to intercity train travel. This concern can be mitigated partially by providing convenient taxi services, car rentals, or public transit directly to/from the station at the time of arrival.

Intermodal connections between intercity rail and rail transit systems have proven highly advantageous in other cities around the country. Plans to integrate the St. Louis passenger rail station with the expanding light rail system and local transportation services has a strong potential to build ridership. Kansas City's evolving plans for light rail and the renovation of Union Station present an excellent opportunity to build ridership through providing intermodal connections. Union Station itself could even be a significant trip generator.

When asked what would make the St. Louis to Kansas City trains more attractive, the large majority of survey respondents suggested, not surprisingly, promotional fares. The other top suggestions reinforce the need for transportation services at destinations and hotels and shopping near the stations. These items should be priorities for improving the total rail travel experience in Missouri. Tie-in's with car rental agencies, taxi companies, and other services could benefit both the rail passenger operator and the service company. It represents an unexplored opportunity.

Amtrak Station Assessment

Although mentioned much more by current passengers than those in the community surveys, station amenities are important for building and maintaining a viable passenger rail service. They offer comfort, services demanded by passengers, and a high degree of local visibility both positive and negative. Stations can be a focus of community involvement and a highly effective advertisement for the passenger rail service.

Overall, the condition and suitability of the stations is poor and very poor in some cases. A noticable exception is Kirkwood station, which meets most of the study team's view of a well-appointed rail passenger station. The quality of this station and the community pride that has gone into its maintenance and grounds keeping is undoubtedly contributing to the ridership through this station[3].

The condition of many stations is attributable to the legacy of most being no longer needed by the UP, and neither deeded to or maintained by Amtrak or the communities. Communities are beginning to respond, however, and several have taken positive steps to make improvements that present a positive image.

Experience in other communities suggests that station improvements have an effect on ridership and build awareness of rail service. In small towns, stations can be a source of civic pride while in major destinations, stations are vital to broad based success of the service.

[3] The only real negative was a concern that the track surface has been raised too high to permit easy alighting or disembarking for older passengers.

Some Missouri station facilities should be demolished. Others should be scheduled for renovation. In the already renovated facilities, it is a matter of posting better information, properly maintaining and cleaning the facilities and adding basic amenities. The single most important facility recommendation is the need for minimum standards for the entire corridor.

A dilapidated station communicates to potential riders that rail is a "second class" mode. A well-maintained and attractive station beckons potential riders and indicates a quality service.

Past research by others and the study team's analysis suggest that a route-wide station improvement program could result in roughly 15,000 new riders being attracted to try the train.

III. OPERATIONS EVALUATION

As part of the study effort, on and off train inspections of passenger operations were made. The study team also held conversations with Amtrak crews, supervisors, managers, and Chicago based staff.

Field Observations

Members of the study team rode in the cab of the locomotive on the Kansas City Mule (train number 301) from St. Louis to Kansas City on Monday, September 21, 1998. The objective of the trip was to gain direct insight of the infrastructure, operations, and interactions with Union Pacific (UP) freight traffic.

The portion of the Sedalia subdivision from St. Louis to Jefferson City is a double track line with a few single track bridges. The line is entirely under Centralized Traffic Control, controlled from Omaha, Nebraska. Westbound trains generally travel on Track 1 (closest to the Missouri River) until just east of Jefferson City. Eastbound trains generally follow Track 2. Trains occasionally switch tracks for operating reasons. Westbound passenger trains cross-over to Track 2 for the Jefferson City stop. All passenger trains follow the Sedalia subdivision, which becomes single track west of Jefferson City to Kansas City. Most freight traffic is westbound on the single track portions of the Sedalia Sub. Most eastbound freight trains run on the more northern River Subdivision between west of Jefferson City and Kansas City.

Passenger trains have priority over freight trains, but on the single track portion of the route the train dispatcher will often put a passenger train into a siding behind a freight train in order to meet an opposing freight or passenger train.

Defining Alternatives for Study

The baseline against which operating alternatives are evaluated is the existing service of two daily round trips. Operating alternatives examined included combinations of changes in fares, service frequencies, and schedules. The development of alternative services focused on filling real or perceived gaps in current service or to serve market segments that are under-represented or offer potential traffic.

Trip times between St. Louis – Kansas City are too slow for the typical business passenger. Air service is, and will continue to be, preferred by time sensitive business travelers. The benefit of train service to the business traveler lies in its direct and close access to the central business districts of each city along the route, service to and from intermediate points, and amenities or travel pleasures that train service can provide. Airports near the major Missouri cities tend to be located far outside of the central cities. Specifically, Kansas City International Airport is about 20 miles from the Central Business District (CBD), St. Louis International Airport is 12 miles from CBD, and Jefferson City/Columbia Airport is 20 miles from the State Capital.

These distances can add up to between thirty minutes and an hour (depending on connections/access to car rentals, etc.) of additional time at each end point for access and egress to the airports. It means that a 40 minute flight can become a 2 hr and 40 minute trip. Trains offer much quicker access and egress from the CBD's (5 to 10 minutes in most cases). In addition, trains offer First Class size seats and comfort (compared to planes) in coach areas and provide a better opportunity to conduct business and work while riding. What is needed to build business passenger patronage includes:

- Business-oriented arrival and departure times
- Quick access and egress to CBD
- Competitive total trip times (including access/egress)
- Comfortable and accessible stations
- Business services at stations and on-board
- Reasonable last minute, mid-week fares
- Good local transportation options at both origins and destinations
- Reliable on-time performance
- A marketing program designed to reach the business traveler

Early in the study, four alternative operating scenarios were defined.

Scenario 1: Optimize Schedules and Increase Speed Limits to 79 MPH

This scenario attempts to build on the base service with the fewest cost implications. Exhibit 6 illustrates a feasible schedule with DMU equipment, higher speeds, and 15 minutes of recovery time.

Scenario 2: One Additional Round Trip

This scenario focuses on improving schedule convenience and facilitating day trips between intermediate stations and Kansas City or St. Louis. This scenario (Exhibit 7) envisions three daily round trips beginning early in the morning from each end point and concluding with schedules later than currently offered. The added service could draw additional riders from all passenger types, but the most growth would likely come from business passengers for whom frequencies and convenience are paramount.

Scenario 3: Originating Daily Trains from Jefferson City to KC and St. Louis

This scenario (Exhibit 8) attempts to build a more business oriented clientele by offering a service that facilitates easy day trips between the third largest trip generator, Jefferson City, and the endpoints (Kirkwood and St. Louis are in the same metro area, as are Kansas City, Lee's Summit, and Independence). The Jefferson City to St. Louis trip can be made in about two hours, one-way, while the trip to Kansas City would require about three hours. These could be easy day trips and help build daily business traffic to the large cities.

Scenario 4: Combining Scenario's 2 and 3

This scenario (Exhibit 9) attempts to offer a full range of departure and arrival times in St. Louis and Kansas City as well as a business oriented service originating in Jefferson City.

EXHIBIT 6
SCENARIO 1 SCHEDULE

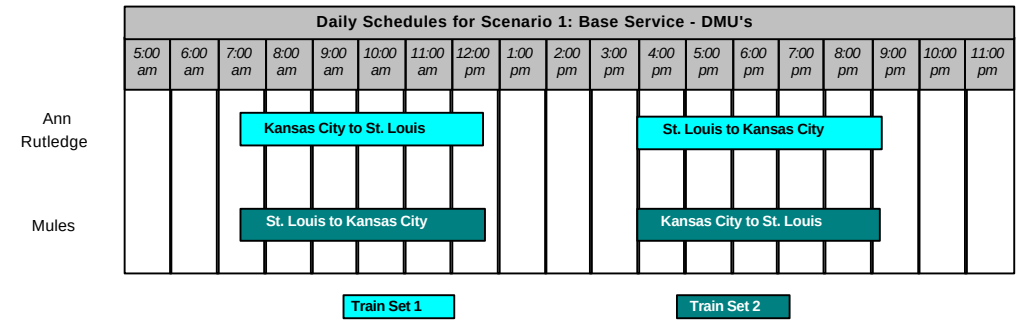


EXHIBIT 7
SCENARIO 2 SCHEDULE

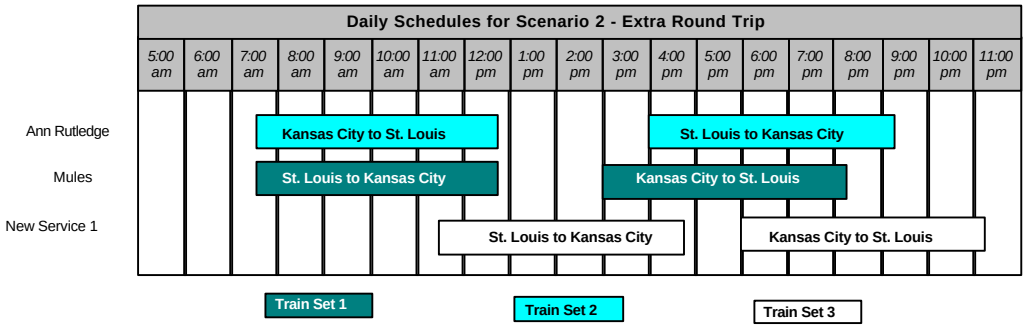


EXHIBIT 8
SCENARIO 3 SCHEDULE

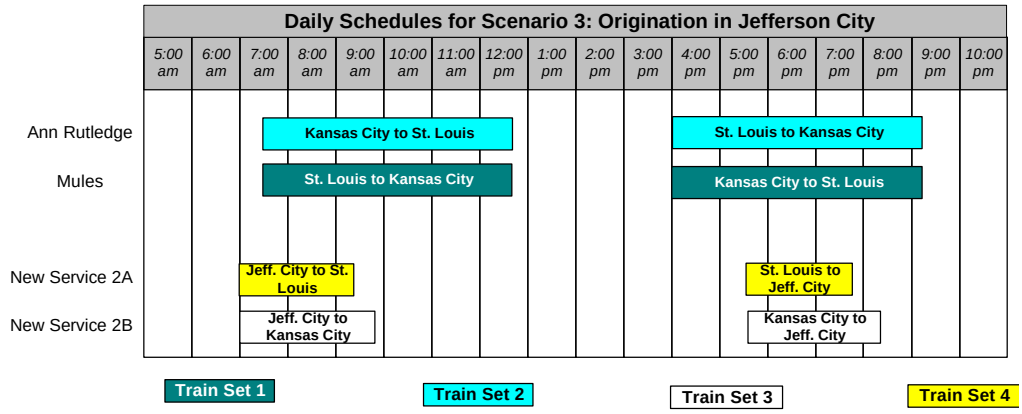
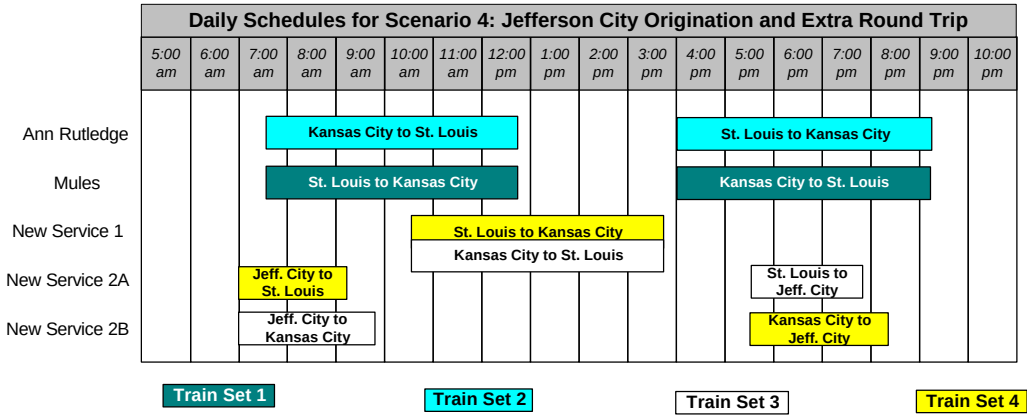


EXHIBIT 9
SCENARIO 4 SCHEDULE



Equipment Operating Evaluation

Equipment evaluation for state owned/leased or contracted service requires a detailed review of performance, suitability to market conditions, acquisition cost and operating and maintenance expenses. Different types of equipment offer different benefits and lend themselves to different services and markets. The Missouri corridor is suitable to several equipment alternatives. Trade-offs between equipment types include operating performance, operating efficiency in terms of fuel consumption and labor, suitability to market-driven services, capital costs of equipment, maintenance costs, and equipment availability. Safety is another issue that should be considered.

Equipment types evaluated included:

- Traditional Amtrak intercity train – Diesel electric locomotive with 4 short distance Horizon Fleet or Amfleet passenger cars/cafés.

- Self propelled equipment – Adtranz Flexliner equipment from Europe (2 Diesel Multiple Unit (DMU) passenger cars with up to 2 non-powered passenger cars).

- Tilting equipment – Diesel electric locomotive with 6 Talgo passenger cars (the minimum consist). This train has a passive tilt capability with the ability to operate at higher speeds through curves.

All of the equipment named above is capable of much higher speeds than the current maximum speed limit of 75 mph. Exhibit 10 summarizes general advantages and disadvantages of alternative equipment.

Current Amtrak equipment may be less efficient than the alternatives because:

- The number of cars in the present train set is small for the locomotive's capabilities, resulting in unnecessarily high power to weight ratios. Consequently, the trains consume large quantities of fuel unnecessarily (about 400 gallons per one-way trip).

- Present equipment has higher gross weight per seat than some alternatives.

Present equipment is not maintained at a convenient location to the corridor, requiring equipment to be cycled in and out of Chicago for maintenance purposes.

Track Speed Limits

Except in terminal areas, the current track infrastructure permits a maximum speed of 79 mph. The study team could not identify any compelling reasons for not increasing maximum passenger train operating speeds to 79 mph. The time benefit of raising limits is shown in Exhibit 11.

EXHIBIT 10
GENERAL COMPARISON OF EQUIPMENT ALTERNATIVES

Equipment Type	*Advantages*	*Disadvantages*
Base Equipment	Proven in service	Highest fuel consumption
Locomotive, three cars, one café car	Matches Amtrak fleet	Staff of four required.
Self Propelled (DMU)	Highly fuel efficient	Not yet FRA compliant Multiple Engines
Adtranz Flexliner	Light weight Reduced crew needs	Not fully tested in U.S.
Siemans VT628	Reduced crew needs	Unproven
Tilt	FRA compliant[5]	High fuel consumption
Locomotive, Talgo, or Pendolino cars[4]	Lighter than base equip. Higher speed in curves Talgo equipment is proven in U.S.	

EXHIBIT 11
EFFECT OF INCREASING SPEED LIMITS – PRESENT EQUIPMENT

Station	*Base Case Trip Time*	*Trip Time – 79 mph*
St. Louis	00:00	00:00
Kirkwood	00:25	00:25
Washington	01:03	01:02
Hermann	01:35	01:32
Jefferson City	02:20	02:16
Sedalia	03:25	03:20
Warrensburg	03:54	03:47
Lee's Summit	04:35	04:25
Independence	04:49	04:38
Kansas City	05:10	05:00

[4] Pendolino cars are not certified as FRA compliant.
[5] Current designs will not be compliant for Stage II requirements without some modifications.

Operational Trade-Offs: Tilt vs. Self-Propelled (DMU)

CSI's Train Performance Calculator (TPC) estimated trip time improvements based on the ability of tilt equipment to navigate curves at speeds producing up to 5 inches of cant deficiency (compared to FRA's regulations for traditional equipment which allows only 3 inches of cant deficiency)[6].

Exhibit 12 presents the impact of curve restrictions.

While trip times with the Talgo equipment are shorter, the time savings of 17 minutes is not large relative to the total trip. Travel time is reduced by about 5 percent using the Talgo sets which may draw small numbers of added passengers. Experience from around the country suggests that a 5 percent reduction in travel time will produce an approximately 4 percent increase in ridership, all else being equal.[7] The Flexliner, with steerable trucks, can produce additional time savings approaching those of the Talgo, if federal permission to operate at higher unbalanced speeds can be obtained.

Preferred Equipment

From an operating standpoint, self propelled equipment (DMU's) is preferred to the base equipment for a variety of reasons, subject to some caveats. The preferability of DMU's is based on operating flexibility and efficiency.

The DMU, with its low weight, can save significant amounts of fuel over both the base equipment and the Talgo option. It has lower operating and maintenance costs and can be operated more efficiently. The fuel consumption rates for potential equipment sets is given in Exhibit 13.

DMU's allow the operator to match the train consist to the demand by removing or adding powered or non-powered units. Traditional equipment and Talgo consists have one powered locomotive with 4000 hp. Locomotive power and weight remains constant whether or not cars are removed (or deadheaded) so fuel consumption savings associated with removing cars is not proportional to train size. DMU's can be assembled to match power requirements with the size of the train[8].

Current Operations

Currently there are about 34 through freight trains per day operating over the line between St. Louis and Jefferson City. West of Jefferson City, trains operate over two different routes to and from Kansas City. Twenty two of the 34 trains remain on the Sedalia Subdivision. The other 12 operate via the River Subdivision.

CSI simulated the operations of the Union Pacific and Amtrak over the Sedalia

[6] Cant deficiency, or "imbalance", refers to the number of inches of superelevation required to maintain equilibrium through a curve. If a curve has a superelevation of four inches (the outside rail being four inches higher than the inside rail) but requires seven inches of superelevation to maintain equilibrium at a designated speed, then three inches of cant deficiency (imbalance) is observed. FRA regulations limit cant deficiency to three inches although four inches is currently under consideration. Passive tilt equipment has been granted a waiver to allow five inches of cant deficiency in the Pacific Northwest. Tilting equipment can operate at greater cant deficiencies by converting some side thrust to a force perpendicular to the floor of the car. This vertical force component is hardly or not even noticed by passengers.

[7] This calculation is based on a travel time elasticity of approximately –0.8 which implies that for every 1 percent reduction in travel time, 0.8 percent more passengers result.

[8] With articulated equipment, such as the Flexliner, this is not a simple task, however.

subdivision to assess the capacity of the rail line under current levels of service and for each scenario. Simulation results indicate that the Sedalia subdivision has adequate capacity to handle each passenger scenario studied without requiring costly changes to the rail infrastructure to increase capacity.

EXHIBIT 12
TRIP TIMES – NON TILTING VS TILTING EQUIPMENT

Station	Trip Times (Base Equipment & Flexliner) – 79 mph	Talgo Trip Time – 79 mph + Faster Curves
St. Louis	00:00	00:00
Kirkwood	00:25	00:21
Washington	01:02	00:57
Hermann	01:32	01:26
Jefferson City	02:16	02:08
Sedalia	03:20	03:07
Warrensburg	03:47	03:32
Lee's Summit	04:25	04:08
Independence	04:38	04:22
Kansas City	05:00	04:43

EXHIBIT 13
FUEL COST COMPARISON

Train Set	Trip Time - STL-KCU (hh:mm:ss)	Fuel Consumed (annual gal)	Annual Cost ($0.74/gal)
Base Equipment	5:00:16	604,659	$447,448
Self-Propelled (Flexliner)	4:57:33	342,662	$253,570
Passive Tilt Equipment (Talgo Pendular)	4:43:25	548,960	$406,230

Travel Demand Model

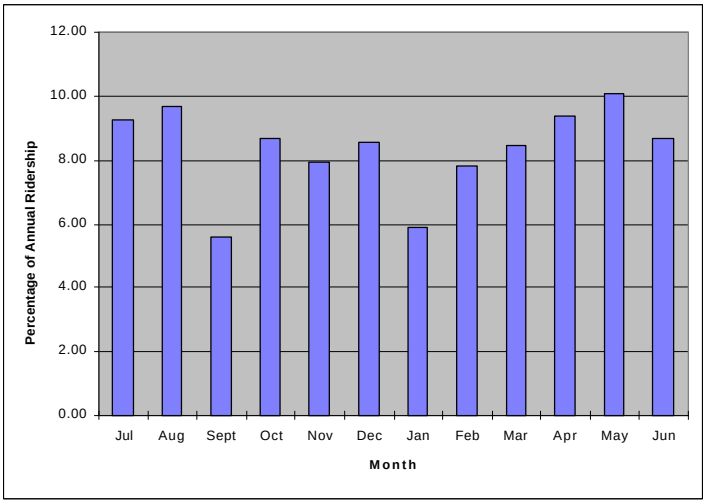
Currently, average daily ridership is about 560 people[9] with about 9 percent of the trips representing business related travel. The average annual ridership on these services has remained relatively steady over the last 10 years in spite of the region experiencing an average annual population and employment growth rate of 0.7 percent. This indicates that competing modes are capturing the increase in total travel demand and that the rail market share is declining.

Ridership on Missouri trains is seasonal. Ridership levels in September and January are much lower than the other months. Peak ridership occurs during the summer months of April through August, as illustrated in Exhibit 14.

Ridership exhibits variations by day of the week, increasing toward the end of the workweek. Weekend travel peaks occur on Fridays and Sundays as shown in Exhibit 15, suggesting a strong non-work travel demand for the services.

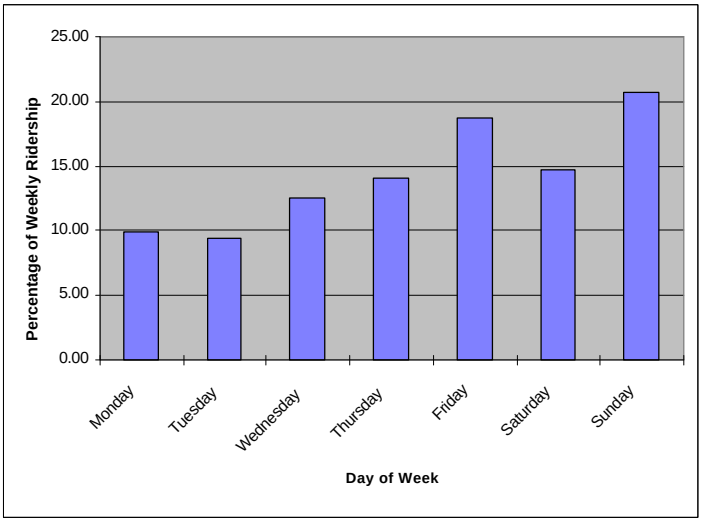
[9] Based on the Amtrak report of 16,771 riders in June 1998 on train numbers 301, 303, 304, and 306.

EXHIBIT 14
DISTRIBUTION OF ANNUAL RIDERSHIP BY MONTH



Source: Amtrak

EXHIBIT 15
DISTRIBUTION OF WEEKLY RIDERSHIP BY DAY



Source: Amtrak

Ridership and Revenue Results

Exhibit 16 summarizes results of ridership and revenue forecasts for each scenario.

A primary conclusion from this analysis is that limited new frequencies do not create large increases in ridership. New equipment, optimized schedules, and slightly higher speeds combine to produce the largest available ridership gain compared to expanded services. The results do not necessarily mean that adding a round trip is not warranted, however. Due to the potential for reduced train staffing with Flexliners, three round trips could be provided with only marginally higher costs than two round trips. Additional focused marketing efforts could create new demands not considered by the forecast model.

EXHIBIT 16
RIDERSHIP MODEL RESULTS
(Ridership in Thousands; Revenue and Passenger Miles in Millions)

Results	1998	2000	2005	2010
Base Case - Two Round Trips				
Ridership	207.3	215.3	236.6	260.0
Revenue	$3.6	$3.8	$4.2	$4.6
Passenger Miles	37.9	39.4	43.3	47.6
Scenario 1 - Base Case + Flexliner + 79 MPH where Feasible + Optimized Schedules				
Ridership	223.5	232.1	255.1	280.4
Revenue	$4.0	$4.1	$4.6	$5.0
Passenger Miles	42.0	43.6	47.9	52.6
Scenario 2 - Scenario 1 + One Daily Round Trip				
Ridership	226.4	235.1	258.4	284.0
Revenue	$4.0	$4.2	$4.6	$5.1
Passenger Miles	42.4	44.1	48.4	53.2
Scenario 3 - Scenario 1 + Two Jefferson City Originated Round Trips				
Ridership	228.0	236.8	260.2	286.0
Revenue	$4.0	$4.2	$4.6	$5.1
Passenger Miles	42.3	44.0	48.3	53.1
Scenario 4 - Scenario 2 + Scenario 3				
Ridership	228.4	237.2	260.7	286.5
Revenue	$4.1	$4.2	$4.6	$5.1
Passenger Miles	42.5	44.1	48.5	53.3

Ridership and revenue forecasts lead to the following conclusions:

- Socio-economic growth in the St. Louis –Kansas City corridor and a quality rail transportation service makes it possible to improve rail passenger travel in the corridor at the rate of approximate 2 percent annually. Excess capacity in the present service provides important opportunities for increasing ridership and revenue.
- Without special promotional efforts, reduction in travel time through higher speed limits combined with better equipment will increase ridership more than adding more frequency in the corridor. According to the modeled forecast, operating faster Flexliner schedules with no additional trips, will lead to a 7.8 percent traffic growth compared to only a 5.2 percent increase in ridership with an additional round trip (Scenario 2).
- Jefferson City Originations (Scenario 3) are estimated to attract a higher level of ridership than the extra round trip (Scenario 2), but only estimated to generate marginally higher revenues. This is attributable to the fare structure of Amtrak that charges slightly higher fares on a passenger mile basis for longer distance trips.
- Revenue increases from traffic growth are generally forecast to be higher than ridership increases, attributable to longer average trip lengths.
- Growth in ridership on the Kansas City end of the corridor will be stronger than the St. Louis end due to faster economic growth around Kansas City.

Socio-Economic Growth Assumptions

The growth projections in population, employment and per-capita income are shown in Exhibit 17. The values in the table represent the average annual rate of growth in employment, population, and per capita income during the periods 1998-2000, 2000-2005 and 2005-2010. For example, the table indicates that employment in Missouri is expected to grow at an annual rate of 1.1 percent until 2005, and then expected to slow down to an 0.8 percent annual rate after 2005.

EXHIBIT 17
ANNUAL RATE OF MISSOURI SOCIO-ECONOMIC GROWTH

	1998 - 2000	2000-2005	2005-2010
Employment	1.1%	1.1%	0.8%
Population	0.8%	0.7%	0.7%
Per Capita Income	1.6%	1.9%	1.7%

Source: Bureau of Economic Analysis, US Department of Commerce.

V. ECONOMIC AND FINANCIAL ANALYSIS

The economic (cost) aspect of the service is a critical determinant of future rail passenger services in the St. Louis – Kansas City corridor. This chapter examines operating costs in some detail.

Amtrak Cost Models

Amtrak submitted results from two costing models to MoDOT and the study team in support of its justification for increased state subsidy. These models are the State Supported Service Pricing Model and the Intercity Forecast Model.

The Intercity Forecast Model report summarized costs for Fiscal Year 1998 which ended on June 30, 1998. The Service Pricing Model report is for Fiscal Year 2000, beginning on July 1, 1999. The one year difference is not a factor in disqualifying comparison between the two models.

While the two models yield similar bottom line results regarding total revenues and expenses, components of revenue and expense differ significantly between the two models. The differences raise questions as to what costs are appropriate and assignable to the present two trains for purpose of establishing the route deficit upon which contract subsidy payments are estimated. Differences among cost components are large enough to raise credibility questions with one or both models. Discussions with Amtrak did not explain or justify the differences. Amtrak emphasized, however, that it was making considerable efforts to improve its cost accounting procedures to more accurately estimate assignable avoidable costs and fairly apportioned joint and common costs. Of the two models, the Service Pricing Model provides more supporting detail.

Examining certain components of cost for reasonableness, the study team noted that total train and engine (T&E) crew costs were, on a daily basis, approximately 50 percent higher than the basic hourly rate for T&E personnel. Part of this can be explained by allowances for relief crews, overtime, holiday pay, sick days, jury duty, personal reasons, etc., and additional costs for maintaining an “extra board” for crew layoffs. However, the most important factor responsible for high T&E cost is a large guaranteed “extra board” pool of personnel. The guarantee amounts to payment of about 178 days pay for no work for each T&E employee. Without state supported services, guaranteed extra board costs would not only

increase, but must be borne entirely by Amtrak[10].

In the study team's opinion, the penalty cost of a guaranteed extra board is not an attributable cost that should automatically be factored in state contract (subsidy) payments. In return for certain labor work rule concessions, Amtrak agreed to a special arrangement of guaranteed employment for T&E crews. Although labor work rule concessions provide a net cost benefit in the long run, paying for a guaranteed extra board is a separate issue more properly a subject for negotiations.

Extra labor costs represented by guaranteed extra board labor payments are increased by fringe benefits and G&A (General and Administrative) costs. Combined, the total cost to the state for unneeded labor is at least $666,000 per year.

There are several other cost areas that the study team could not audit as part of this study. The following areas need to be examined (audited) more thoroughly prior to concluding negotiations with Amtrak:

- Attributable revenues;
- Contract railroad payments (particularly incentives); and,
- Fuel costs (based on differences between study team estimates and Amtrak estimates, discussed later).

Other cost areas, if only because of their large dollar amount, need to be carefully reviewed. They include:

- Insurance and property damage; and,
- Station services.

[10] As regular bid jobs are annulled, crews drop back to the guaranteed extra board as a result of an Amtrak labor agreement with the Brotherhood of Locomotive Engineers and the United Transportation Union.

Other high cost areas, specifically equipment related costs (capital and maintenance) and on-board services (OBS), are excluded from the above list because the study team is proposing alternatives in these two major cost categories.

OBS Services

According to Amtrak supplied information, Amtrak spends $3.73 for every $1 in food and beverage revenue it earns. And, this does not include the cost of train fuel to haul the café car or contract and incentive payments to Union Pacific which may be associated with the café car.

The availability of food and beverage service is a very important part of passenger amenities (affirmed by the on-board survey). The study team is of the opinion, however, that food quality and service can be maintained more effectively if the service is privatized. To help ensure revenues to the private contractor, a coupon for a beverage and snack (peanuts or pretzels) could be included (added) in the ticket price, similar to airline practices. Marketing this new "feature" could help mask a nominal increase in ticket price (greater than the cost of the coupon). Eliminating the café car could save up to $830,000 in annual subsidy costs.

Crew Wages

Though T&E crew levels are the same in the Base Case and Scenario 1, CSI has adopted a more reasonable (but still high) daily rate for T&E crew members. This change will produce a direct savings of almost $500,000 per year, which when increased for overhead and G&A, produce a total savings of approximately $573,000. Most, if not all, of this lower labor cost assumption assignable to reductions in guaranteed extra board labor costs, previously discussed[11].

[11] Crew wage savings and elimination of extra board guaranteed wage costs should not be added, as it represents double counting.

Fuel

The gross train weight of a three-car DMU consist is only 40 percent that of a four car locomotive pulled train. Because of lighter weight, the DMU train will consume only about 60 percent of the fuel of a four car locomotive hauled train. This reduction in fuel consumption yields savings of approximately $180,000 which, increased for G&A totals about $216,500.

Railroad Contract Payments

Though the exact formula for determining railroad contract payments is not known, assumptions made by the study team suggests a potential savings in railroad contract payments of approximately $100,000 per year for three-car DMU's.

Equipment Maintenance

Savings in equipment maintenance are uncertain, since there is insufficient history or experience with modern DMU cars in the United States. Based on the best estimates provided by Adtranz, third party maintenance costs compared to present Amtrak reported maintenance costs produce savings of approximately $450,000 per year, which increased for G&A amounts to approximately $538,000.

Total Operating Expenses Before Capital Charges

Under the assumptions outlined, including an allowance for overhead and G&A, the use of DMU's and three man T&E crew would save approximately $2.1 million per year in operating costs (assuming break even food service), a reduction of approximately 19 percent over Amtrak's forecast Fiscal Year 2000 full operating costs.

Equipment Costs

A major disadvantage of DMU's is the higher first cost for new equipment compared to the continued use of older, lower cost conventional locomotives and passenger cars. Purchase costs for three unit DMU's are difficult to estimate since final specifications for FRA compliant cars have not been translated into construction costs. Adtranz is also reluctant to provide estimates with current negotiations with prospective buyers currently underway. The study team's best estimate is $6.2 million for a three-car set. This very high cost can be reduced significantly if this equipment is produced in greater volume.

A rough estimate of annual capital lease cost was based on amortizing $6.2 million dollars over 15 years at 12 percent interest, with no salvage. Assuming that only one additional spare powered and non-powered car is needed to protect the service, total equipment capital costs of the DMU alternative to the Base Case represent a cost increase of approximately $1 million per year, reducing grand total operating cost savings to approximately $1 million. The bottom line is still a nine percent reduction over Fiscal Year 2000 full costs. These cost savings do not reflect additional cost savings that we believe are possible, as discussed later.

MoDOT has indicated the state might be able to issue tax-exempt bonds, currently at interest rates of around five percent, to purchase DMU's. Under these conditions, DMU costs would be about $597,300 per year ($6.2 million amortized over 15 years at five percent) versus an estimate annual lease cost of $910,300. Multiplied by 2.7 sets required to protect services in Scenario 1, additional savings of $845,000 could be realized. This would help reduce total operating costs by over $1.8 million per year – a 16 percent reduction over the Service Pricing model Fiscal Year 2000 forecast cost of $11.0 million.

Net Subsidy Requirements

Total revenue for proposed DMU operations with Base Case schedules are estimated to be approximately the same, at least based on the present fare schedule. Though the new DMU's would, in their own right, attract additional ticket revenues, these additional revenues are offset by the loss of food and beverage income attributable to present services. Under the DMU *lease* option, the overall reduction in subsidy requirements, however, is still positive at approximately $1.18 million. Even with these cost savings, subsidy costs would increase from Fiscal Year 1998's cost of $4.5 million to approximately $5.5 million for Fiscal Year 2000.

Purchasing, instead of leasing, DMU's, would add another $.85 million in savings, reducing total subsidy costs by $2.03 million compared to the Base Case. Under this option, subsidy payments would be $4.6 million – on par with current Fiscal Year 2000 subsidy costs.

The conclusion of the financial analysis is that, at current Amtrak cost levels, the use of state arranged DMU equipment, and third party equipment maintenance, subsidy cost savings of at least $2 million can be realized, compared to Amtrak's requested $6.5 million subsidy for continued "business as usual" operations.

Pro Formas

A summary of pro formas for the Base Case and each scenario is summarized in Exhibit 18.

The buy versus lease option for DMU's produces a constant annual savings across each of ten years, summarized as follows:

- Scenario 1 - Substitute DMU's for present equipment; $845,000
- Scenario 2 - Third round trip; $1,158,000
- Scenario 3 - Two round trips and new Jefferson City service; $1,471,044
- Scenario 4 - Three round trips and new Jefferson City service; $1,471,044

Forecast revenue, costs, and subsidy requirements for the ten year period beginning in 1999 are summarized in the bar graph shown in Exhibit 19. This excludes yet additional steps which might be taken to reduce costs and increase revenues, discussed in a following section. In this exhibit, the DMU purchase option is used in the calculation of required subsidy costs.

Privatization

A significant factor in the expansion, or even continuation of present rail services between St. Louis and Kansas City is whether the relationship between revenues and costs can be improved. Privatization of all or some portion of Amtrak services, could provide cost savings with no reductions in service quality.

Principal areas or functions which may be privatized include:

- Train operations;
- Equipment ownership and maintenance;
- Insurance;
- Station services;
- Reservations, information, and marketing; and,
- On-board services

EXHIBIT 18
SUMMARY OF ANNUAL OPERATING EXPENSES, REVENUES, AND SUBSIDY

	MILLIONS OF DOLLARS				
	Base Case	Scenario 1	Scenario 2	Scenario 3	Scenario 4
ITEM	Present Service	Present Service (DMU's)	Third Round Trip (DMU's)	Scenario 1 + New Jefferson City Service (DMU's)	Scenario 2 + New Jefferson City Service (DMU's)
Direct Costs					
Total T&E Crew Costs	$2.02	$1.54	$1.68	$1.96	$2.49
Total Cafe Car & OBS Expense	$0.64	$0.00	$0.00	$0.00	$0.00
Total Fuel Costs	$0.44	$0.26	$0.39	$0.39	$0.52
Switching Costs	$0.05	$0.02	$0.03	$0.04	$0.05
Total Railroad Contract Payments	$1.69	$1.59	$2.39	$2.39	$3.18
Total Insurance	$0.60	$0.59	$0.74	$0.75	$0.92
Total Equipment Maintenance	$0.99	$0.54	$0.81	$0.81	$1.08
All Other Costs	$1.13	$1.30	$1.30	$1.30	$1.39
Total Train and Route Expense	$7.56	$5.83	$7.32	$7.63	$9.63
Overhead and G&A	$1.51	$1.17	$1.46	$1.53	$1.93
Total Oper. Exp Before Capital Charges	$9.07	$7.00	$8.79	$9.16	$11.56
Capital Charge - Current Equipment (1)	$1.44	$0.00	$0.00	$0.00	$0.00
DMU's - Lease Option (2)	$0.00	$2.46	$3.37	$4.28	$4.28
DMU's - Purchase Option (3)	$0.00	$1.61	$2.21	$2.81	$2.81
Grand Total Oper. Costs w/DMU Lease	$10.51	$9.45	$12.16	$13.44	$15.84
Grand Total Oper. Costs w/DMU Purch.	$10.51	$8.61	$11.00	$11.97	$14.36
Attributable Transportation Rev (FY98)	$3.87	$3.99	$4.04	$4.04	$4.05
Net Subsidy Required w/DMU Lease	$6.64	$5.47	$8.12	$9.40	$11.78
Net Subsidy Required w/DMU Purchase	$6.64	$4.62	$6.96	$7.93	$10.31

Notes: (1) Amtrak Capital (Depreciation plus Interest) Charge
(2) Estimated at $6.2 million per trainset, amortized at 12 percent over 15 years.
(3) Same as (2), except a 5 percent interest rate is used.

Train Operations

Including overhead and G&A, train crew expenses make up, by far, the largest single cost component of train operations. According to Amtrak, total train and engine crew expenses exceed $2 million which, when marked up for overhead and G&A, total approximately $2.4 million.

To reduce these expenses, there are three options, not all of which may be feasible or practical:

- Contract with UP to provide T&E crews;
- Contract with a third party to provide T&E crews; or,
- Renegotiate wage payments with Amtrak.

Among the three options, Exhibit 20, below, summarizes base rate labor costs among the three alternatives.

EXHIBIT 19
SUMMARY OF REVENUES, SUBSIDY, CONSTANT LEVEL COSTS
(DMU Purchase Option)

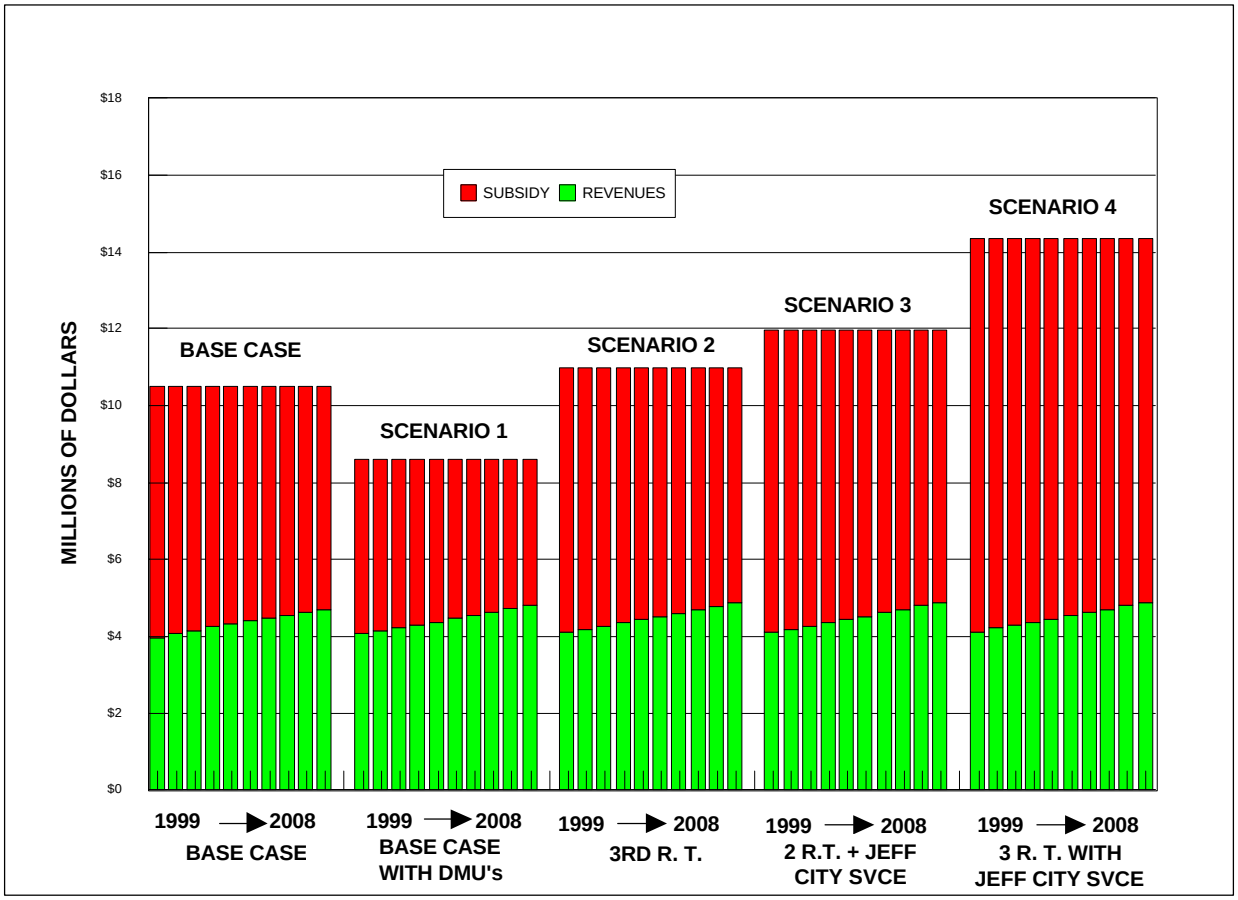


EXHIBIT 20
COMPARISON OF CREW WAGE ALTERNATIVES PER TRIP

	BASE WAGE RATES		
	AMTRAK	UNION PACIFIC	THIRD PARTY*
Engineers	$241.50	$285.00	$176.00
Conductors	$179.44	$233.50	$176.00
Assistant Conductors	$153.60	$214.81	$160.00

**If crews are not subject to Federal regulations regarding Federal Employees Liability Act (FELA) and Railroad retirement, additional fringe costs for Health & Welfare, Pension, Workmen's Compensation, etc. may be 25 - 30 percent compared to Amtrak and UP's approximate 42 percent.*

Equipment Ownership and Maintenance

This is clearly an area where MoDOT can achieve major cost savings producing direct and ancillary cost reductions in many areas, as previously discussed.

A major issue is the portion of Ann Rutledge schedule which operates between St. Louis and Chicago. If Amtrak could jointly agree with Missouri to provide DMU's on this train, it could work to the mutual advantage of both parties. Failing that, a determination would need to be made of whether to have through passengers change trains at St. Louis or to continue the use of existing equipment. The value of this trade off cannot be evaluated in this study.

Insurance

The total direct insurance and property damage cost to the state is approximately $580,000 (Service Pricing Model for Fiscal Year 2000). Including overhead and G&A, the total cost is approximately $700,000. This is a significant expense. Marked up for overhead and G&A, total insurance and property damage costs translate to approximately $3.38 per passenger carried or $18.46 per 1,000 passenger miles. The direct cost of the state providing equivalent coverage may be less than Amtrak costs assigned to Missouri on a pro rata basis. At least this bears further investigation by MoDOT.

Station Services

Station services is another area subject to privatization, at least for staffed stations such as Jefferson City and Kirkwood. A third party may be able to employ lower cost labor. Third party labor also may not be subject to FELA or Railroad Retirement costs.

Reservations, Information, and Marketing

Prior to Amtrak, each railroad had its own reservation, information, and marketing system, not unlike the more modern systems maintained by airlines. If a third party operator cannot provide these services directly, there are other organizations that might provide a competitive alternative when compared to the present $248,000 annual cost included in the Amtrak Service Pricing Model.

On-Board Services

This is clearly an area that warrants change. Though precedent may make it difficult to discontinue on-board services on trains as they are presently operated, eliminating the café car through the use of DMU's may make it easier to introduce third party services whose costs are likely to be much more in line with revenues.

Other Savings Potential

Privatization, or the threat of privatization of one or more of the above categories may help the state negotiate more favorable terms with Amtrak as an alternative to losing whatever contribution the state would otherwise be willing to make.

Lodging and meals currently cost an estimated $114,000 per year (Service Pricing Model). Presently, on-time passenger trains meet on the single track line west of Jefferson City, it means that one train is stopped in a siding waiting for the other to pass. With DMU's, there may be justification to stop the other train to swap crews – a practice that has some precedent both in the U.S. and abroad. While this might add three to five minutes of delay, it has the advantage of allowing crews to return home each night, improving both crew morale

and saving in lodging and meals[12]. If scheduled departures from St. Louis and Kansas City are not equalized, this arrangement may not be workable if it results in engineers operating more than six hours on continuous duty (at least under the present labor contract).

In summary, the use of purchased DMU's in present operations and discontinuing on-board services would yield savings over the present Base Case of at least $2 million. More aggressively pursuing some of the other cost areas discussed above could provide further savings and still result in the provision of equal or higher quality service in the corridor.

VI. COST BENEFIT ANALYSIS

The cost-benefit analysis ranks the net benefits of the base service and four rail service alternatives[13]. The base case against which the alternatives are evaluated is the existing service of two daily round trips. The cost-benefit analysis model measures the benefits and financial returns to the state of Missouri, and public (social) benefits to its residents. These benefits are compared to the costs of purchasing/financing new equipment and operating and maintaining the passenger rail system to determine which alternative produces the most value.

Methodology

The cost-benefit analysis is compatible with models used by the US Department of Transportation, including the Federal Railroad Administration (FRA), for evaluating transportation improvements.

Exhibit 21 describes and identifies the source for the major assumptions in the analysis. The assumptions are consistent with standard practice and those used in the cost-benefit analysis conducted in the Midwest Regional Rail Initiative study (1998).

Cost-Benefit Analysis

The benefits and costs of each service option are presented in Exhibit 22. Notice that the base case accounts for most of the benefits and costs since the ridership and revenue changes estimated in the demand analysis are small relative to the base case.

The results show that each scenario, except for Scenario 4 under the lease option, produce benefits in excess of costs. Scenario 1 stands out as the preferred alternative. This is intuitive since Scenario 1 features reduced annual expenditures while attaining ridership gains nearly as large as the other alternatives. On purely economic grounds, assuming no other changes in the future, this alternative maximizes benefits net of costs to the state of Missouri. This does not necessarily mean additional services (Scenario 2 or 3) should not be considered, for reasons previously discussed.

Passengers derive the vast majority of total benefits, followed by environmental benefits and benefits to highway users respectively. Exhibit 23 presents the distribution of benefits.

The analysis highlights the fact that rail passenger service, even as it stands, is highly beneficial to the state of Missouri. It is a fairly low cost alternative that is valued highly by a significant portion of the Missouri public. The cost benefit results confirm findings from the rail passenger survey and community survey that found strong support for passenger rail service. MoDOT's challenge is to find more cost effective means of providing high quality rail service to the citizens of Missouri.

[12] Crews should occasionally run through, however, to maintain their familiarity of the territory in which they are certified to operate.

[13] Note: The distinction between economic and financial feasibility is that economic feasibility includes the full range of benefits (i.e., including safety, environment) whereas financial feasibility is concerned only with the returns from operations.

EXHIBIT 21
DESCRIPTION AND SOURCES OF KEY ASSUMPTIONS

Variable	*Assumption*
Travel Demand	Demand estimates projected over a 20-year period using elasticities developed by the Midwest Regional Rail Initiative.
Analysis Period	20 years. This time frame is standard in the cost-benefit analysis of capital projects. The period is chosen to reflect the nominal useful life of the project.
Discount Rate	Rate is assumed constant at 4 percent in real terms. The standard discount rate suggested by the Office of Management and Budget is seven percent nominal. Our discount rate is identical after subtracting an assumed three percent inflation rate.
Operating Costs	Derived from Amtrak operating cost analysis. Costs are assumed constant in real terms over the analysis period.
Value of Time	$15.00 per hour. This value is the approximate average wage of travelers.
(1998$)	All values are in constant 1998 dollars.

EXHIBIT 22
COST BENEFIT ANALYSIS RESULTS, PRESENT VALUE OVER 20 YEARS
($ MILLIONS)

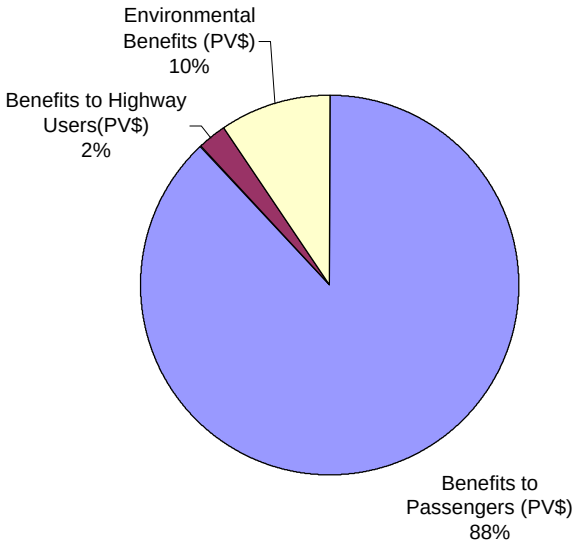
	Scenario				
Primary Evaluation Criteria	*Base Case*	*1*	*2*	*3*	*4*
Passenger Benefits (PV$)	$114.2	$116.8	$117.1	$117.1	$117.1
Benefits to Hwy Users (PV$)	$3.1	$3.4	$3.5	$3.4	$3.5
Environmental Benefits (PV$)	$12.3	$13.7	$13.8	$13.8	$13.8
Total Benefits (PV$)	$129.6	$133.9	$134.4	$134.3	$134.4
Subsidy Costs -Lease (PV$)	$(78.3)	$(64.0)	$(102.6)	$(117.4)	$(149.8)
Subsidy Costs -Purchase (PV$)	NA	($52.6)	($84.3)	($97.4)	($129.8)
Net Benefits -Lease (PV$)	***$51.3***	***$69.9***	***$31.8***	***$16.9***	***($15.4)***
Net Benefits -Purchase (PV$)	***NA***	***$81.3***	***$50.1***	***$36.9***	***$4.6***

VII. CONCLUSIONS AND RECOMMENDATIONS

For the St. Louis – Kansas City rail corridor to succeed, the State of Missouri must commit to ensuring its success. Rail is a valued link in the transportation system for a large number of people. Current passengers are pleased with the service, communities surveyed along the route value the service, and the cost-benefit analysis finds that benefits to residents in the State of Missouri exceed its public costs. Despite this solid foundation, passenger service has deficiencies that can be remedied by a firm commitment. This commitment can lead to improving passenger rail services, patronage, revenues, and reducing costs, reinforcing all of this study's positive findings.

The state, as the main funding source for the Ann Rutledge and Missouri Mules, can exert much more control over Missouri passenger rail services.

EXHIBIT 23
DISTRIBUTION OF TOTAL BENEFITS



Study Conclusions

Study conclusions are summarized as follows:

- Rail passenger transportation services are valued by communities adjacent to the St. Louis – Kansas City transportation corridor;
- In spite of some observed problem areas, users of the train services give high marks for trip experiences;
- Ticket prices are reasonable and probably lower than they need to be;
- The market for rail passenger services is generally for the leisure, less time sensitive passenger;
- Business travel is limited, but a promising market for development;
- Marketing/advertising was not a major factor influencing travel decisions among on-board passengers surveyed, meaning that the message or media used was not highly effective;
- A very high percentage of passengers are first time rail travelers (or more than three years since they previously rode the train);
- Amtrak costs of providing train services show large variations among reported costs versus modeled costs, creating questions about the validity of its forecasting, costing and/or accounting procedures;
- Because of so many vagaries in Amtrak's cost accountability, the state needs assurance that future subsidies will be consistent with decisions based on a present understanding of costs;
- Privatization and use of DMU equipment in the present service is overwhelmingly a key to reducing labor and other operating costs;
- The ability of the state to utilize low cost, tax-exempt financing makes acquisition superior to leasing DMU's,

even if the state loses the tax benefits of depreciation;

- About 2.7 DMU sets (2 full sets, plus one extra powered and non-powered unit) are minimum requirements to protect existing traffic and service levels;
- To convert the Ann Rutledge to DMU's requires that Amtrak purchase additional DMU sets to protect the Illinois portion of that service. Failing that, interstate passengers moving to or from points east of St. Louis would need to change trains in St. Louis (an undesirable choice);
- Optimized schedules, faster speeds, and DMU trainsets (Scenario 1) offer the most attractive cost-benefit results, though adding a third round trip (Scenario 2) is nearly as good as the Base Case;
- Missouri must be very aggressive in promoting labor efficiency and productivity in the services it sponsors. It cannot be held fully accountable for labor guarantees if the alternative is to discontinue support of present services which will only increase Amtrak's costs of labor guarantees;
- All areas of cost discussed in this report can either be privatized, renegotiated, or reduced. Only in areas where Amtrak cannot be more cost effective and competitive, should the state seek a privatized alternative. Equipment ownership and maintenance is clearly one area. T&E labor costs are a second, fertile area. If T&E costs cannot be reduced, there may be some justification to privatizing the entire service, with Amtrak being offered the opportunity to compete for components of the service.
- Privatizing the whole service, however, adds considerable burden to the state and introduces uncertainties with respect to payments to the UP, liability, and jurisdictional issues. Totally privatizing intercity passenger services now provided by Amtrak would make Missouri a pioneer in uncharted waters. Though state supported services are not a part of Amtrak's "core routes," they still affect the company's economies of scale, management, marketing, equipment standardization, maintenance, and the appearance of a nationwide network.

Recommendations

Based on study conclusions, the following study recommendations are made:

Station Improvements

Stations are the first and last impression that riders have of a rail trip. The appearance and function of stations should support the impression of quality and accessibility. High quality stations advertise the rail service, help to build ridership, can be a source of community pride, and are a service attraction (advertisement) in their own right. The state should ensure a quality station building with minimum amenity attributes.

In addition, the state should strongly support the development of new station facilities for St. Louis and Kansas City. These stations should serve a local transit hub, contain car rental and taxi services, and be within walking distance of some downtown destinations.

Ticketing and Reservations

Obtaining tickets and reservations should be made as simple as possible. Signs posted at each unstaffed station stating that the trains are now "reservation only" are unclear and uninviting. Each unstaffed station should have

a clearly marked direct phone to Amtrak reservations with clear instructions for making reservations and purchasing a ticket. Trains should be equipped with on-board (portable) off-the-shelf equipment to receive reservations and print tickets and receipts for boarding passengers using the reservation phone.

By eliminating on-board fare collection (except, perhaps at a premium charge) it helps justify the use of a two man train crew for a three-car DMU. By having Amtrak (or third party) reservation clerk handle the fare collection by credit card and transmitting the ticket directly to the train, the conductor's ticket workload can be reduced[14]. Passengers also can be given a verbal confirmation number that contains a fare code and payment validation as an aid to the conductor and as an emergency backup in case of communication or equipment problems. Details and procedures need to be developed.

Train Operations and Equipment

Missouri should purchase Diesel Multiple Units (DMU's) to service the Kansas City – St. Louis corridor. The state should join in the Pennsylvania DOT's planned acquisition of FRA compliant Adtranz Flexliner equipment though its train configuration requirements will be different than Pennsylvania's. Maintenance should be contracted out to a third party (where Amtrak could also be a bidder).

Converting the Ann Rutledge to DMU's will require a cooperative agreement with Amtrak to cover the St. Louis to Chicago leg. Requiring passengers to switch trainsets at St. Louis is an unattractive option. Amtrak would need to procure additional DMU sets to seamlessly operate the Ann Rutledge from Kansas City through St. Louis to Chicago. Amtrak can derive some of the same economic benefits from DMU operation as Missouri would enjoy.

Speeds should be increased to 79 mph where feasible. This will require cooperation from the UP. The state, or operator, should also explore an FRA waiver of unbalance regulations to allow four inches of cant deficiency to further increase speeds around curves. Flexliner DMU's have steerable trucks and can safely operate at 4 inch unbalance (as they do in Europe). Increasing speeds to 79 mph can shorten schedules by ten minutes while allowing a four inch unbalance could shorten schedules up to 10 more minutes.

Renegotiate T & E Labor Rates

T&E labor costs paid by Missouri are excessive. If Amtrak cannot reduce T&E expenses to a more competitive level through the use of two man crews at unburdened rates, Missouri should invite a third party to provide train operations, contracting with Amtrak only for services it can most economically and efficiently provide. Labor costs should be based only on employees actually working, in accordance with standard labor agreement rates, with only acceptable levels of payments at premium rates. Anything more is a negotiation issue.

On Board Services (OBS)

Food and beverage service could be provided via pushcart as airlines and some foreign rail passenger operators now do. Alternatively, or perhaps in addition to carts, a small service galley could be provided in one of the DMU's. The service should be provided by a private outside contractor. The cost of one beverage and a snack could be included into the price of a ticket to help guarantee a level of revenue to the OBS contractor and could be marketed as a new service feature.

Trainsets should be configured to include a private (perhaps glassed in) business service

[14] An assistant conductor may be needed on heavy travel days when train utilization is expected to be high, or cars are added to the consist.

area available at a premium price. The area should include amenities useful to conduct business, including at least several outlets for personal computers[15]. If business passengers are going to be drawn to this service, adequate business amenities must be provided to make productive use of on-board time. No other form of commercial domestic transportation could advertise this level of service amenities to the business traveler.

Marketing

The State of Missouri should expand and/or increase its marketing efforts to support the service through the development of marketing materials and brochures. These should be distributed to travel agents, chambers of commerce, and in each station. Better media selection is required to increase public awareness in the corridor.

Third Round Trip (Optional)

The cost benefit analysis favors Scenario 1 – the substitution of DMU's for existing operations and schedules. Scenario 2 (third round trip) is less favorable than Scenario 1, but still almost as favorable than the Base Case. Some serious thought should be given to adopting Scenario 2 if it facilitates a better labor arrangement and a greater state commitment to providing rail passenger services.

Adding a third schedule is a powerful sign to the public of Missouri's commitment to rail passenger service. Properly marketed and advertised, it could well build traffic above forecast expectations.

The improvements recommended in this report will support continued growth in ridership over the next several years until peak weekend demand outstrips the capacity of three-car trainsets. Additional cars or additional frequencies would then become necessary.

Initially, an additional round trip could be added for Friday through Sunday service to provide capacity for peak demand. This would require use of reserve equipment plus one additional power unit at a minimum. Adding a third train may not result in a proportionate increase in costs if the new service utilizes reserve equipment and all trains operate with two man crews (instead of three man crews for only Scenario 1).

[15] Telephone and modem connections for wireless E-Mail of Fax could be provided if demand and revenues justify it.