North Louisiana
Passenger Rail Feasibility Study

Shreveport, La. – Vicksburg, Miss.

Final Report

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HNTB

NLCOG
Northwest Louisiana Council of Governments

CONTENTS

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1 STUDY OVERVIEW

1.1 PURPOSE OF STUDY

The Northwest Louisiana Council of Governments (NLCOG) commissioned the North Louisiana Passenger Rail Feasibility Study to assess the potential of initiating a startup passenger rail service between Shreveport, La., and Vicksburg, Miss. (Shreveport-Vicksburg Corridor).

The following three primary factors were evaluated to assess the feasibility of the potential service:

- Infrastructure improvements needed to accommodate passenger rail service without negatively impacting existing and future freight operations.
- Attractiveness of the service and its ability to generate ridership and revenue.
- Financial resources needed to construct and operate the potential service.

To assess these three factors, this study evaluated existing conditions; prepared a conceptual operating scenario; forecasted ridership and revenue estimates; developed railroad infrastructure improvements; identified potential station locations; and estimated capital and operating costs. The study also reviewed potential funding options and financing mechanisms that could be used to finance the service.

In addition, the study considers the potential for connecting the Shreveport-Vicksburg Corridor with destinations beyond Louisiana including Dallas/Ft. Worth, TX to the west and Meridian, MS to the east.

1.2 CORRIDOR STUDY AREA

The Shreveport-Vicksburg Corridor, shown in Figure 1-1, is located in northern Louisiana. The corridor would serve proposed terminal stations in Shreveport/Bossier City and Vicksburg with proposed intermediate stops in Ruston and Monroe.

Table 1-1 shows the population and labor force within the proposed station communities along the corridor. The Shreveport-Bossier City Metro Area is the largest community along the corridor with a population of 443,350 and a labor force of nearly 215,000 people.

Table 1-1: Station Community Population and Labor Force Statistics (2013)

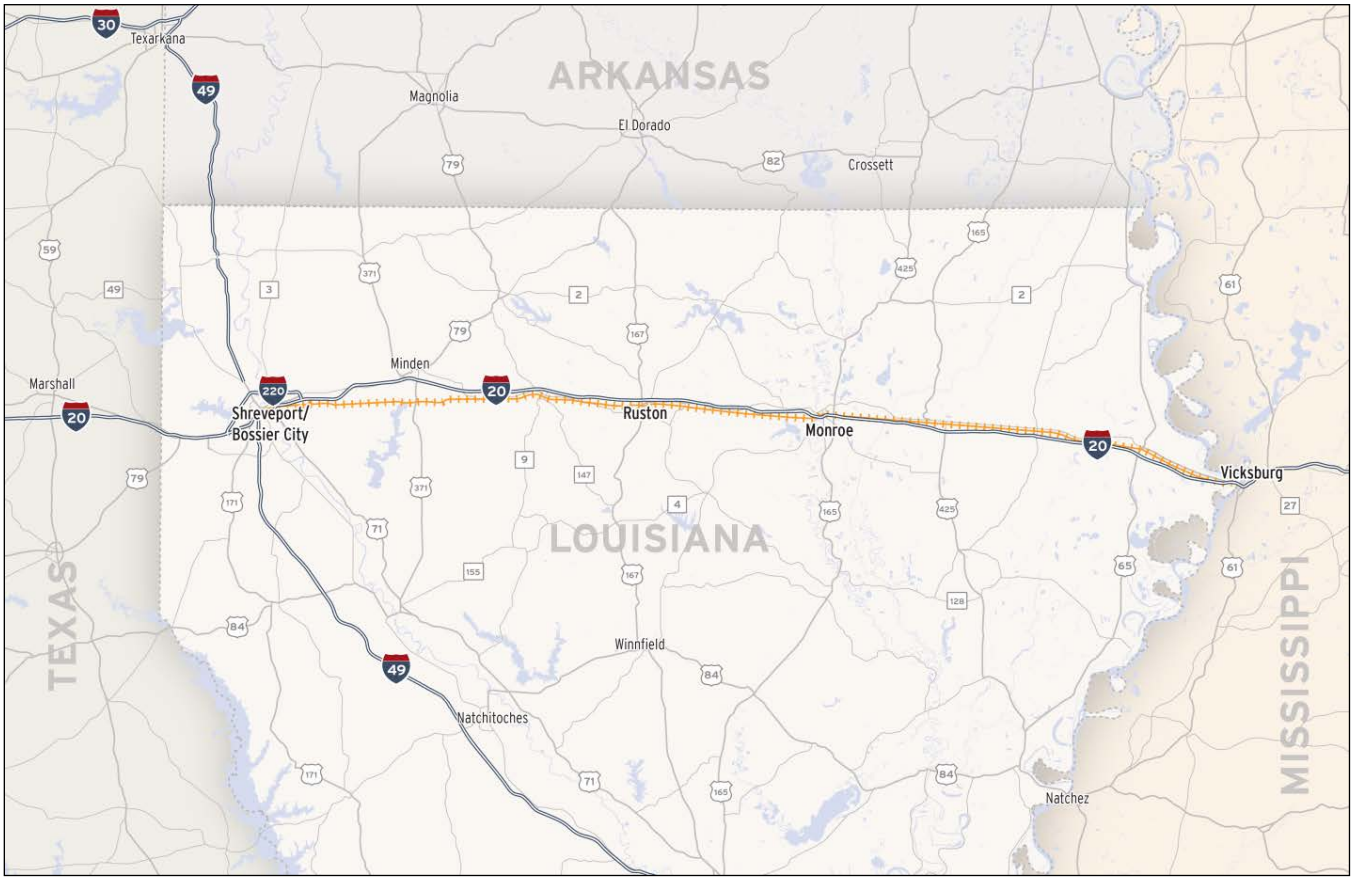
Location	Population	Labor Force
Shreveport-Bossier City, LA Metro Area	443,350	214,452
Ruston, LA Micro Area	46,926	22,985
Monroe, LA Metro Area	177,217	80,851
Vicksburg, MS Micro Area	57,942	25,057

2009-2013 American Community Survey 5-Year Estimates

The Shreveport-Vicksburg Corridor currently does not have passenger rail service and would utilize an existing 170-mile long freight rail line known as the Kansas City Southern (KCS) Vicksburg Subdivision.

The Vicksburg Subdivision provides the only existing rail infrastructure between Shreveport and Vicksburg that, with improvements could potentially be used to support passenger rail service. Any other route alternative would involve purchasing and constructing a new railroad corridor, which would be cost prohibitive for a startup service. Therefore, the Vicksburg Subdivision is the only viable route alternative.

Figure 1-1: Shreveport-Vicksburg Corridor



2 EXISTING CONDITIONS

The 170-mile long Vicksburg Subdivision is a key east-west route for KCS and Norfolk Southern (NS). It is part of the Meridian Speedway, a joint venture between KCS and NS that provides freight connectivity between the east coast ports and the Dallas/Fort Worth area. The line was originally constructed by the Vicksburg, Shreveport & Pacific Railroad in 1861, and after undergoing multiple lease agreements and ownership changes over the years, it was sold to KCS in 1993.

The Vicksburg Subdivision contains a single mainline track that is currently only used for freight traffic. Depending on the location, the mainline experiences 5 to 20 trains per day.[1] The entire rail line is controlled by a centralized traffic control (CTC) signaling system.

The rail line contains 12 passing sidings that range from 1 to 2.2 miles in length and are spaced 15 to 40 miles apart. The line has eight additional sidings less than 1 mile in length, which are too short for passing because the trains are typically longer than a mile. Also, more than 60 business tracks serve freight customers along the corridor.

The Vicksburg Subdivision has interchanges with the Union Pacific Railroad (UPRR) in Shreveport and Monroe and an interchange with the shortline Louisiana & North West Railroad (L&NW) in Gibsland, LA.

The railroad tracks are maintained to the Federal Railroad Administration's (FRA) Class 4 standards. This classification sets maximum operating speeds at 60 mph for freight trains and 80 mph for passenger trains. Currently, freight trains are restricted to maximum operating speeds of 55 mph and intermodal freight trains operate at speeds up to 59 mph over this corridor.

Portions of the railroad corridor (about 7 miles, or less than 5 percent) are limited to lower speeds ranging from 20 to 55 miles per hour. Almost all of the 44 curves located along the corridor have 1 degree of curvature or less; only four of the curves have greater than 1 degree of curvature and are associated with lower train speeds. The rail bridges along the line consist primarily of timber bridge structures. About 145 public at-grade crossings and 40 private at-grade crossings are located along the corridor. Nine grade crossings are included in a quiet zone in the Monroe area.

[1] *Existing daily freight train counts are based on field observations of the Vicksburg Subdivision conducted in January 2015 and the FRA Office of Safety Analysis Highway-Rail Crossing Inventory. http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx*

3 PROPOSED OPERATIONS

This section discusses a conceptual operating scenario for intercity passenger rail service along the Shreveport-Vicksburg Corridor. No connecting services from points east and west of the corridor were considered in the development of the service characteristics, provisional passenger train schedule and forecasted ridership.

3.1 OPERATOR

It is assumed that Amtrak would be the operator of the potential passenger rail service between Shreveport and Vicksburg. Amtrak has a clear advantage over other third party operators because it has statutory right of access to the right of way for freight railroads. Under the Railroad Passenger Service Act of 19702 Amtrak is guaranteed this access and is required to pay for the incremental costs associated with their use of freight railroad tracks. Any other operator, whether private or public, must negotiate and compensate the owning freight railroads at an unrestrained agreed upon market rate for access. This generally results in much higher operating costs for passenger services not operated by Amtrak. The freight railroads are also generally opposed to having operators other than Amtrak on their track, due to liability concerns with a third party operator. The selection of an operator would need to be addressed in more detail as project sponsors move towards implementation of service in the corridor.

3.2 SERVICE CHARACTERISTICS

The passenger rail service would operate along the existing Vicksburg Subdivision railroad corridor and share the track with freight railroads. The conceptual operating plan proposes two daily round trips between Shreveport/Bossier City and Vicksburg with intermediate stops in Ruston and Monroe. Under this proposal, one morning and one evening trip would be provided in each direction, allowing a morning trip with a full day of business or visiting followed by a return trip in the evening.

Maximum passenger train speeds would be 79 mph with an average speed of about 65 mph. The difference between the maximum and average speeds results from station stops and other locations along the route where speeds are restricted, such as at railroad interchanges (for example, at Shreveport and Gibsland) and certain curves in the track alignment.

3.3 PROVISIONAL SCHEDULES

A Train Performance Calculator Model (TPC) was used to calculate the travel time for trains running between the end points and making two intermediate stops at Ruston and Monroe. The model estimates a run time of about 2 hours and 25 minutes. A sample schedule based on this run time is shown in Table 3-1.

Table 3-1: Shreveport-Vicksburg Passenger Train Provisional Schedule

READ DOWN			READ UP	
101	103	Station	102	104
7:30 AM	5:00 PM	Shreveport/Bossier City, LA	10:05 AM	7:32 PM
8:25 AM	5:55 PM	Ruston, LA	9:09 AM	6:39 PM
8:59 AM	6:30 PM	Monroe, LA	8:38 AM	6:09 PM
9:56 AM	7:34 PM	Vicksburg, MS	7:40 AM	5:10 PM

[2] *Railroad Passenger Service Act of 1970. P.L. 91-518.*

3.4 FORECASTED RIDERSHIP AND REVENUE

Ridership and revenue was forecasted using the Texas Statewide Analysis Model Version 2.5 (SAM-V2.5). This analysis was based on the service characteristics and provisional schedule described in Sections 3.2 and 3.3. The SAM-V2.5 is a validated model that encompasses a five state area, including Texas, Louisiana, Arkansas, Oklahoma, and New Mexico. Additional information regarding the methodology used in developing the ridership and revenue forecasts can be found in Appendix A.

Because intercity passenger rail service is meant to serve travelers who take trips longer than 50 to 75 miles, it is generally in the best interest of intercity passenger services to exclude short, commuter-type trips to make room for riders who are willing to pay for longer distance travel. However, the model included riders with shorter trip lengths in the ridership forecasts since the Shreveport-Vicksburg Corridor is relatively short (170 miles long).

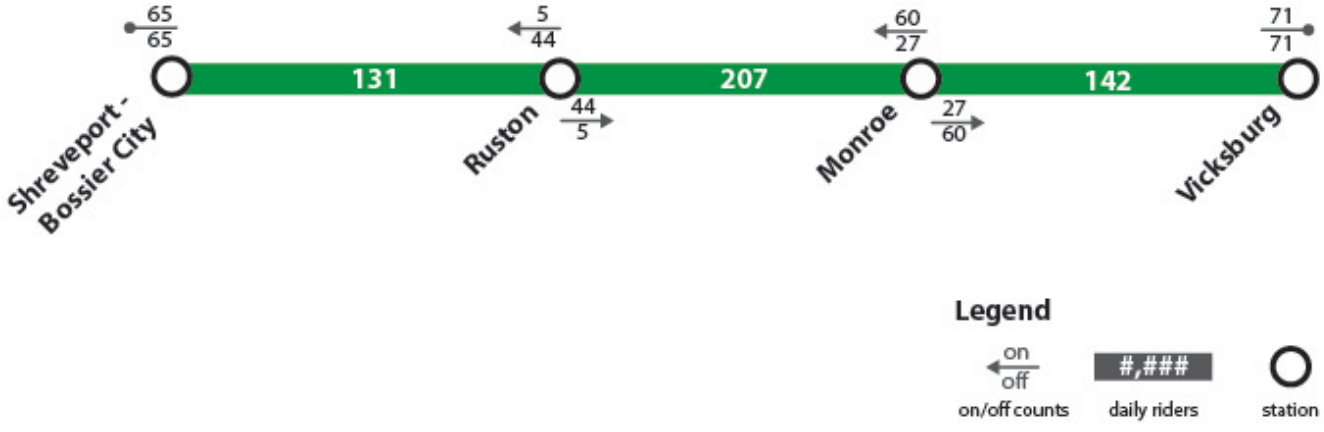
As indicated in Table 3-2, forecasted ridership for the typical weekday (Monday to Thursday) for the passenger rail service between Shreveport and Vicksburg would be 270 riders per day in 2035. Figure 3-1 shows the 2035 weekday daily ridership on each segment of the Shreveport-Vicksburg Corridor, along with the weekday boardings (on) and alightings (off) at each station. Annual ridership, shown in Table 3-3, is estimated to be about 81,500 in 2035.

Table 3-2: 2035 Weekday Station-to-Station Daily Ridership

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	5	21	39	**65**
Ruston	5	-	38	5	**48**
Monroe	21	38	-	27	**86**
Vicksburg	39	5	27	-	**71**
Total	**65**	**48**	**86**	**71**	**270**

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A).

Figure 3-1: 2035 Typical Weekday Daily Ridership



Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A).

Table 3-3: 2035 Annual Station-to-Station Ridership

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	1,601	6,409	11,609	**19,620**
Ruston	1,601	-	11,527	1,548	**14,677**
Monroe	6,409	11,527	-	8,065	**26,002**
Vicksburg	11,609	1,548	8,065	-	**21,223**
Total	**19,620**	**14,677**	**26,002**	**21,223**	**81,521**

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A)

Table 3-4 shows the assumed fare prices between stations, which range between $6 and $30. Fare prices were used to calculate the 2035 annual revenue as shown in Table 3-5. Total annual revenue for the Shreveport-Vicksburg corridor was estimated to be about $1.35 million.

Table 3-4: Fare between Stations (in 2014 Dollars)

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg
Shreveport-Bossier City	-	12	18	30
Ruston	12	-	6	18
Monroe	18	6	-	12
Vicksburg	30	18	12	-

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A).

Table 3-5: 2035 Annual Revenue (2014 Dollars)

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	19,214	115,365	348,282	**482,861**
Ruston	19,214	-	69,165	27,872	**116,250**
Monroe	115,365	69,165	-	96,780	**281,310**
Vicksburg	348,282	27,872	96,780	-	**472,934**
Total	**482,861**	**116,250**	**281,310**	**472,934**	**1,353,355**

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A).

4 CAPITAL COST ESTIMATE

4.1 COST ASSUMPTIONS

An order-of-magnitude capital cost estimate was prepared for the proposed infrastructure improvements that are described in Section 5, though the improvements to the existing rail corridor needed to initiate passenger rail service would require additional coordination and confirmation with KCS and NS in future planning stages. The total estimated capital cost is about $85 million as shown in Table 4-1. The estimated capital cost follows the FRA Standard Cost Categories and includes a contingency appropriate for this conceptual level of analysis.

The capital cost estimate incorporates the following infrastructure elements required to implement and operate the passenger rail service described in Section 3:

- Track: Extensions to 3 sidings for a total additional length of 8.8 miles to add capacity, as well as rehabilitation of 30,000 feet of track;
- Bridges: Replace 7 existing timber structures with 5 concrete structures and t steel structures;
- Station facilities including platforms, site development, parking and other site elements.
- Signal system: Grade crossing warning devices and intermediate signals. Because of current hazardous materials shipments, it is assumed that Positive Train Control (PTC) will be implemented by KCS on this corridor prior to passenger rail service to meet the requirements issued by Congress in the Rail Safety Improvements Act of 2008 (RSIA);
- Grade crossings: Replace passive grade crossing infrastructure at 33 public crossings with active grade crossing warning devices, and adjust active grade crossing pre-emption throughout corridor as needed for the higher operating speeds of passenger rail service;
- Right of way: potential acquisition of land for Monroe station site; and
- Professional services: Project development, engineering, project management, design/construction, testing, inspection, start-up.

The capital cost estimate does not include a cost for the purchase of train equipment since this study assumes Amtrak would be the operator. The cost of a maintenance facility is also not included in the final capital estimate, as it has been assumed that a maintenance agreement can be made with a freight railroad to service the passenger equipment at a nearby freight facility. For reference, a cost estimate for a maintenance facility has been developed and is included in Section 5.6.

Table 4-1: Order-of-Magnitude Capital Cost Estimate (2014 Dollars)

Description	Quantity	Unit	Unit Cost	Base Year Total Cost
10 Track Elements				
10.02 Track Structure: Major Bridge				
Steel Structure	1075	TF	$15,000	$16,125,000
Concrete Structure	820	TF	$9,000	$7,380,000
10.11 Track: Ballasted				
Track: New Track (Capacity Improvements)	46500	TF	$250	$11,625,000
Track: Rehabilitation of Existing Track	30000	TF	$135	$4,050,000
10.12 Track: Special (switches, turnouts)				
Track: #20 PS Turnout	6	EA	$450,000	$2,700,000
20 Stations, Stops, Terminals, Intermodal				
Shreveport/Bossier City	1	EA	$873,000	$873,000
Ruston	1	EA	$625,000	$625,000
Monroe	1	EA	$319,000	$319,000
Vicksburg	1	EA	$733,000	$733,000
30 Support Facilities: Yards, Shops, Maintenance Facility				
N/A (will utilize existing freight maintenance facility)	-	-	-	$0
50 Systems				
50.01 Train Control and Signals				
Addition of Intermediate Signals to Existing CTC System	11	EA	$250,000	$2,750,000
50.02 Traffic Signals and Crossing Protection				
Replacement of Passive to Active Crossing (public)	33	EA	$250,000	$8,250,000
Adjustment of Active Crossing Pre-emption	1	LS	$1,000,000	$1,000,000
60 ROW, Land, Existing Improvements				
Monroe Station ROW	1.058	AC	$65,000	$69,000
CONSTRUCTION SUBTOTAL (10-60)				$56,499,000
70 Vehicles				
N/A (will utilize existing Amtrak equipment)	-	-	-	$0
80 Professional Services				
80.01 Project Development				$565,000
80.02 Engineering				$2,260,000
80.03 Project Management/Design & Construction				$1,130,000
80.04 Construction Administration & Management				$1,695,000
80.05 Professional Liability/Non-Construction Insurance				
80.06 Legal; Permits; Review Fees				
80.07 Surveys, Testing, Investigation, Inspection				$565,000
80.08 Start-up				$565,000
SUBTOTAL (10-80)				$63,279,000
90 Contingency	**35%**	**LS**		**$22,148,000**
100 Finance Charges				**$0**
TOTAL PROJECT COST (10-100)				$85,427,000

**Rounded up to nearest thousand*

Note: "The costs shown in this estimate represent an estimate of probable costs prepared in good faith and with reasonable care. HNTB has no control over the costs of construction labor, materials, or equipment, nor over competitive bidding or negotiating methods and does not make any commitment or assume any duty to assure that bids or negotiated prices will not vary from this estimate."

4.2 CONTINGENCIES AND UNCERTAINTY ANALYSIS

At this conceptual stage of the project, a 35 percent contingency was applied to the overall project cost to provide a means to plan for items and costs otherwise unaccounted for in the estimates. Contingencies are important to maintain throughout project development, though the percentages can be reduced as certainty in design increases.

This feasibility study also included an uncertainty analysis to provide a range of estimated capital costs rather than a single point estimate.

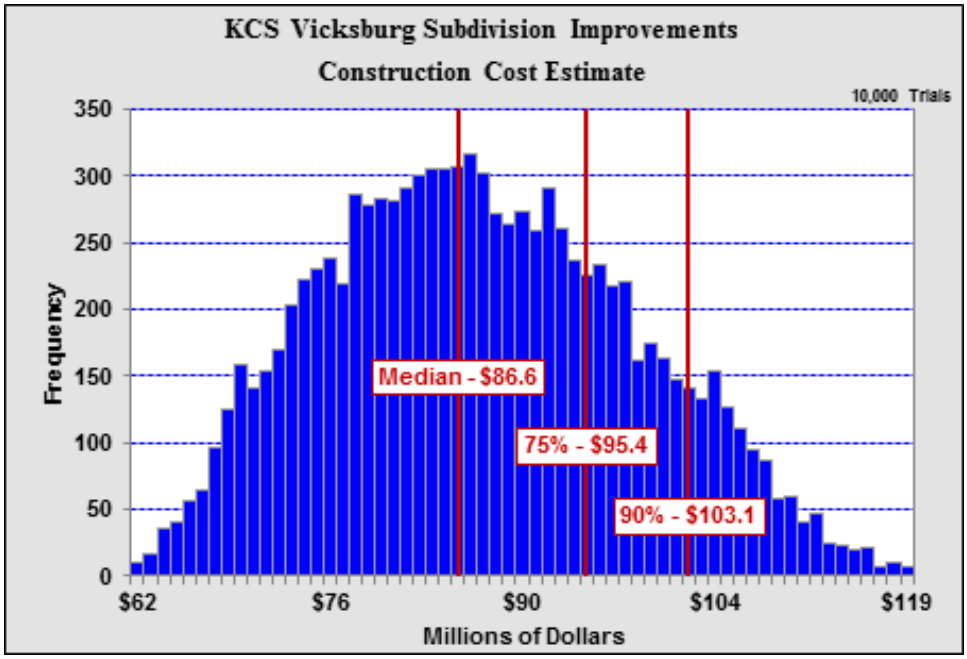
Subject matter experts developed a capital cost distribution by identifying low, most-likely, and high values for the cost components (for example, track elements, stations, support facilities, etc.) that comprise the total capital cost estimate shown in Table 4-1. Correlation coefficients were then developed to represent the relationship between the cost components. The individual coefficients are measures of the interdependence of two assumption value changes that ranges in value from -1.00 to +1.00, indicating perfect negative correlation at -1.00, absence of correlation at zero (or blank), and perfect positive correlation at +1.00. Fundamentally, the value indicates how much of a change in one variable is explained by a change in another. The positive correlation signifies that as the cost of one component increases, generally the cost of another component will increase also (for example, as the cost of vehicles increases, indicating more vehicles, the cost of facilities will increase due to a larger fleet size to be stored and maintained). Table 4-2 provides a description of the coefficient values.

Table 4-2: Correlation Coefficient Descriptions

Description	Coefficient
Strong Correlation	> |.8|
Moderate Correlation	> |.6|
Slight Correlation	> |.4|
Insignificant Correlation	< |.4|

The Oracle Crystal Ball software was then used to run the Monte Carlo predictive modeling tool that randomly generates values for the uncertain variables (cost component values) over and over to simulate a model, which results in a probability distribution for the capital cost estimate. The capital costs were then reported for the 75 percent (P75) and 90 percent (P90) level of confidence. It should be noted that use of P75 and P90 as a decision criteria is a risk averse approach, whereas the use of P50 (50 percent level of confidence) would be a risk neutral approach, and use of levels less than 50-percent would be risk seeking. The capital cost distribution indicates that the $85.4 million capital cost estimate shown in Table 4-1 is in line with a more risk neutral approach as it is about $1 million less than P50, and would fall near the median confidence level shown in Figure 4-1.

Figure 4-1: Capital Cost Distribution



5 INFRASTRUCTURE IMPROVEMENTS

The North Louisiana Passenger Rail Feasibility Study identified infrastructure improvements needed to implement the Shreveport-Vicksburg Service without negatively impacting existing and future freight operations.

The existing freight operations and the proposed infrastructure improvements were not verified by KCS for this feasibility study. All assumptions regarding infrastructure would need to be coordinated with KCS during subsequent study phases.

5.1 TRACK INFRASTRUCTURE

An analysis of existing freight service was conducted to identify new track requirements for the proposed level of passenger rail service assumed in this feasibility study. Field observations were conducted at multiple points along the rail line to determine freight train volumes and operations. Then, the freight operations were modeled utilizing Rail Traffic Controller (RTC), a train performance simulation software program, to develop a baseline scenario.

RTC simulates the operation of trains over a railroad network, accounting for the characteristics of the track (for example, allowable speeds), the equipment (for example, maximum operating speeds associated with the type of locomotive) and service characteristics (such as, locations of stops and duration of dwell time at stops) and reports performance measures such as train speeds, trip times, locations of train meet conflicts and associated delays. Variations can be made in network track layouts; train consists and schedules; and operating rules and constraints, to test the impact of potential improvements. RTC is used by almost all North American Class I railroads to evaluate and plan operations and capital expenditures.

Proposed passenger rail service was added to the RTC simulation with two daily round trips that assume a morning and evening departure from both Shreveport and Vicksburg. Capacity improvements were added iteratively to the simulation until the impact of the passenger trains on freight performance was mitigated and any conflicts between passenger trains travelling in opposite directions and causing delays were minimized.

The locations of train meets and conflicts along the corridor were identified in the model and utilized to develop capacity improvements such as extending existing sidings with consideration given to avoiding impacts to rail interchanges, bridges and grade crossings.

The analysis identified nearly 9 miles of new track comprised of:

- A 2.8-mile extension to the Fitzmorris siding just west of Monroe,
- A 4-mile extension to the Magenta siding that results in an almost 8-mile-long segment of double track just east of Monroe, and
- A 2-mile extension of the Shannon siding about midway between Monroe and Vicksburg.

The locations and lengths of the siding extensions should be considered approximate and would require coordination with KCS.

Track infrastructure requirements also include about 5.7 miles of track rehabilitation (about 3 percent of the corridor), consisting of tie replacements and ballast.

Track infrastructure costs do not include any new track that would be associated with geometry improvements (reductions to curves), since very few curves along the rail line are associated with reduced speeds and those that do require lower speeds are located near the termini of the line or potential station stops. In these areas, the trains would be slowing down regardless of the curves to stop at the stations, meaning that improvements to increase speeds in these locations would not be cost effective and were not included in this study.

5.2 BRIDGE REPLACEMENTS

Although a condition assessment of the existing rail bridges on the line was not conducted, it was assumed that existing timber structures would need to be replaced to accommodate maximum passenger speeds. For cost estimating purposes timber structures were replaced by concrete or steel structures, depending upon span length. A total of 7 bridges were identified for replacement, of which 5 were assumed to be replaced with concrete structures and 2 with steel structures.

5.3 SIGNAL IMPROVEMENTS

For the purposes of this study, it is assumed that KCS would have already implemented Positive Train Control (PTC) prior to the implementation of the proposed passenger service. As required by the RSIA, Class I railroads are required to install PTC on lines carrying over 5 million gross tons annually, over which any poisonous-or toxic-by-inhalation (PIH/TIH) hazardous materials are transported; and,: on any railroad's main lines over which regularly scheduled passenger intercity or commuter operations are conducted. During the field observations conducted for this study, the study team observed multiple freight trains with hazardous materials.

The signal improvements included in the capital cost estimate represent the improvements required to increase the maximum allowable speeds for passenger trains to 79 mph. These improvements would include upgrading all passive (e.g.stop signs, crossbucks, etc.) grade crossing warning devices to active warning devices (flashers and gates) and adjusting signal pre-emption timing for the higher-speed trains. The signal improvements included in the capital cost estimate also include the addition of intermediate signals to reduce existing signal block lengths, which would reduce delays of trains waiting in a passing siding for the train to pass in the opposing direction.

5.4 VEHICLES

Trains would initially consist of two passenger cars with a total capacity of about 140 seats. The trains would operate in a "push-pull" mode with one locomotive on one end of the train and a Non-Powered Control Unit (NPCU), also known as a cab/baggage control car, at the opposite end of the train. The NPCU allows the train engineer to control the locomotive from the opposite end of the train so that the direction of travel can be switched without turning the entire train at the end of the line. This reduces the need for additional track infrastructure at the terminal stations.

As indicated in Section 3, it is recommended that Amtrak operate the Shreveport-Vicksburg Service. An additional benefit of employing Amtrak is the opportunity to utilize Amtrak fleet equipment. The use of Amtrak equipment typically does not require an upfront capital charge that would otherwise be incurred if equipment were purchased for the service. Amtrak only requires annual payment for capital maintenance and overhaul of the equipment that is used for the service. Avoiding the procurement of equipment will save the project millions of dollars in upfront capital costs that would impact the project's feasibility. Table 5-1 provides a list of train equipment needs that would be provided by Amtrak to run the Shreveport-Vicksburg Service.

Table 5-1: Proposed Train Equipment Needs

Unit Type	Operational Units	Spare Units	Total Units
P-42 Diesel Locomotive	2	1	3
Coach Car	4	2	6
Non-Powered Control Unit (NPCU)	2	1	3
Total	**8**	**4**	**12**

5.5 STATIONS

Potential station locations for the Shreveport-Vicksburg Corridor were identified to estimate capital costs and to assess the corridor's feasibility. The potential station locations discussed in this study were identified in coordination with local planning staff in the cities of Shreveport/Bossier City, Ruston, Monroe and Vicksburg. The station locations should only be considered as potential sites to be further analyzed in later planning efforts. Other potential station locations do exist in each station city, therefore additional detailed planning, alternative site analysis, and public outreach should be conducted before selecting a preferred station location in each of the proposed station cities.

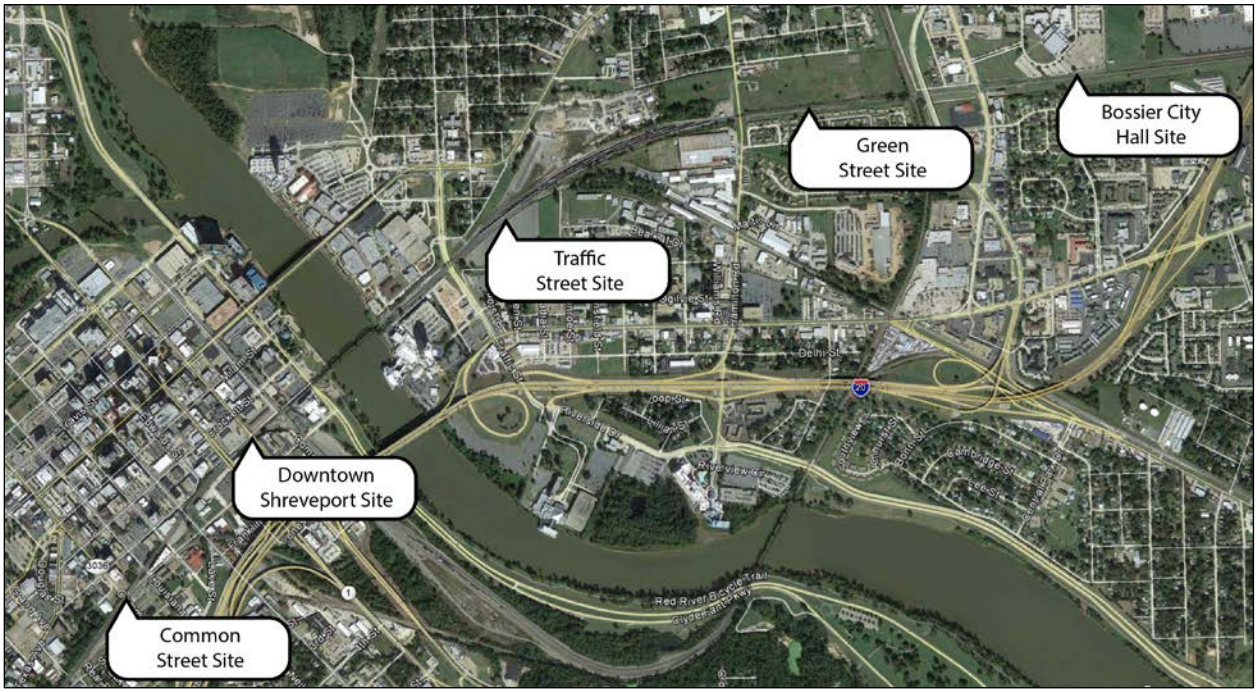
The minimum station infrastructure needed to run the service is considered in the overall capital cost estimate for the study. It is typical of a start-up service to limit station infrastructure to the essential needs, which include a station platform, canopy, lighting, traffic access and circulation, parking, and other safety related improvements. This approach minimizes capital and operating costs associated with the stations and enables the project to focus funding on infrastructure that improves more critical service operations, such as travel time. A description of each potential station and a breakdown of each station cost estimate are provided in Sections 5.5.1 to 5.5.4.

Station cost estimates and needs were developed at a very high level that grouped detailed costs into overarching cost items. All site reconnaissance was completed as a "desk-top analysis" without any field survey. Future station planning will require a more detailed analysis of existing conditions, validation of assumptions and an in depth analysis of station costs.

5.5.1 Shreveport/Bossier City

A high-level analysis of five potential station locations (Figure 5-1) was conducted with input from the local community planning staff. The station location needs direct access to the Vicksburg Subdivision mainline while maintaining accessibility to the local and regional transportation network. The site also needs enough space to accommodate not only the station, but a maintenance facility if it was determined that the heavy train maintenance cannot be contracted to a nearby freight maintenance shop (see Section 5.6 for information about the maintenance facility). It is also preferred to have the station within walking distance of the areas casinos, lodging establishments, jobs, and other attractions.

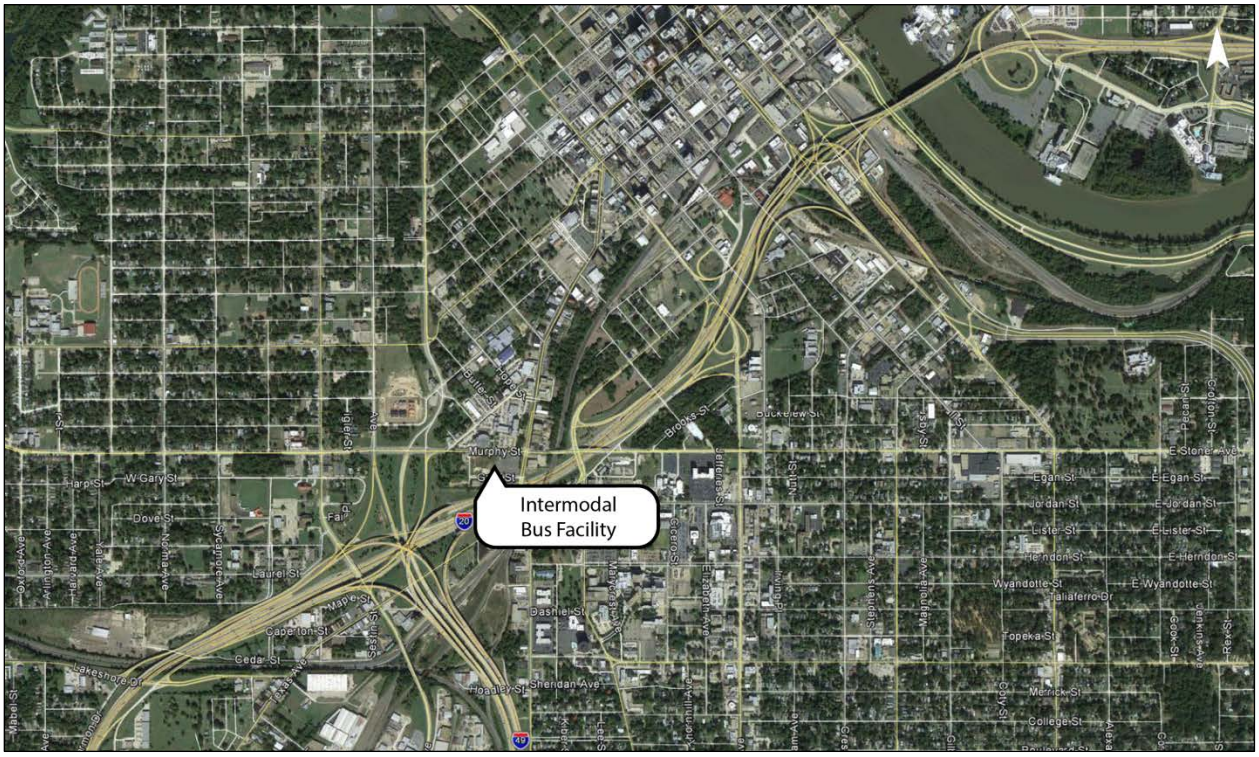
Figure 5-1: Identified Potential Station Locations in Shreveport/Bossier City



Of the five potential station locations identified in Figure 5-1, the Traffic Street Site best met the criteria and was chosen as the representative site for this study. The Traffic Street station site shown in Figure 5-3 and Figure 5-4, is located in Bossier City along Coleman Avenue near Traffic Street. The 14-acre site is publicly owned and is adjacent to the KCS Vicksburg Subdivision mainline. The site provides adequate space for a passenger station and a maintenance facility, if needed. The station site also provides good access to the regional highway network with nearby connections to Interstates 20 and 49, as well as US 80. Casinos, motels, hotels, and other attractions are also within walking distance from the station.

Subsequent to the high-level site analysis, the City of Shreveport also expressed interest in siting the passenger rail station near the new intermodal bus facility being constructed at the corner of Murphy Street and Texas Avenue in Shreveport. Figure 5-2 identifies the intermodal bus facility location. The intermodal bus facility will serve local and regional bus service, taxi service, and provide access to bike paths. Construction of the facility is scheduled to be completed in 2016.

Figure 5-2: Shreveport Intermodal Bus Facility Location



A rail station at the Bossier City location is estimated to cost $1.179 million. A breakdown of the cost estimate is included in Table 5-2. The conceptual plan includes a 300-foot platform that can accommodate the proposed train consist described in Section 5.4.The platform will need to be constructed 15 inches above top of rail (ATR) to meet FRA and Americans with Disabilities Act (ADA) “level boarding” standards for platforms not directly adjacent to track serving active freight operations. The platform also includes safety elements such as guardrails, a tactile strip, and required ADA improvements, as well as a 150-foot canopy to protect passengers from the weather. Passenger parking areas are designed to accommodate anticipated parking needs based on forecasted ridership. A station track would also need to be constructed to accommodate the overnight layover of one train consist at the station, which would require the installation of a turnout to access the KCS Vicksburg Subdivision mainline.

Figure 5-3: Shreveport/Bossier City Conceptual Station Layout

Figure 5-4: Potential Shreveport/Bossier City Station Location

Table 5-2: Shreveport/Bossier City Station Capital Cost Estimate (2014 Dollars)

Item	Cost
Platform (15" ATR)	$105,000
Canopy	$73,500
Pedestrian decorative handrail/guardrail (stairs)	$7,000
Concrete sidewalk	$7,000
Wheelchair lift	$10,000
Landscaping	50,000
Asphalt removal	14,600
Aggregate SubBase for access road (6")	$164,500
Asphalt parking - HMA (6")	$70,000
Aggregate base course (6")	$35,000
Site lighting	$100,000
Layover trackage	$141,800
Layover No. 9 hand throw turnout	$77,000
Flagging	$16,800
Subtotal rounded up to nearest thousand	$873,000
Contingency (35%)	$306,000
Total	**$1,179,000**

5.5.2 Ruston

The conceptual layout for the Ruston station, shown in Figure 5-5, is located near downtown Ruston with access from East Mississippi Avenue. The parcels south of East Mississippi Avenue, between North Sparta and North Hazel Streets are publicly owned, which the City of Ruston has identified as an area for redevelopment. The location of traffic access and parking can be moved to any location within the identified site to accommodate redevelopment plans. However, the train platform must remain adjacent to the railroad track to allow for passengers to board and depart the train. The City of Ruston is planning to zone the identified station location for new parking and apartment/loft style housing.

The station location shown in Figure 5-6, is located near an economically vibrant and attractive downtown that may be an attractive destination for travelers. A farmers market is also being planned in the building just east of North Sparta Street. Other nearby attractions include the Louisiana Military Museum, Lincoln Parish Museum and Dixie Center for the Arts. The station location is also close to large employment centers such as Northern Louisiana Medical Center and Louisiana Tech University, which also attracts visitors attending university athletic events. The station location has good access to the regional highway network through nearby Interstate 20, US 80 and US 167.

For this study it has been assumed that passengers would board and depart the train from the KCS mainline at the Ruston station. As in Shreveport/Bossier City, the conceptual plan includes a 300-foot platform that can accommodate the proposed train consist. However, the platform will need to be constructed at 8 inches ATR so as not to conflict with the height of a standard freight train. The platform also includes safety elements, such as guardrails, a tactile strip and required ADA improvements, as well as a 150-foot canopy to protect passengers from the weather. Passenger parking areas are designed to accommodate anticipated parking needs based on forecasted ridership. The cost estimate breakdown is shown in Table 5-3 and indicates that the station is estimated to cost $844,000.

Figure 5-5: Ruston Conceptual Station Layout

Figure 5-6: Potential Ruston Station Location

Table 5-3: Ruston Station Capital Cost Estimate (2014 Dollars)

Item	Cost
Platform (8” ATR)	$63,000
Canopy	$73,500
Pedestrian decorative handrail/guardrail (stairs)	$7,000
Concrete sidewalk	$7,000
Wheelchair lift	$10,000
Landscaping	$50,000
Asphalt removal	$15,500
Aggregate SubBase for access road (6")	$185,600
Asphalt parking - HMA (6")	$67,700
Aggregate base course (6")	$37,200
Site lighting	$100,000
Flagging	$8,400
Subtotal rounded up to nearest thousand	$625,000
Contingency (35%)	$219,000
Total	**$844,000**

5.5.3 Monroe

The conceptual Monroe station site, shown in Figure 5-7, is located in downtown Monroe with access from Walnut Street and North Second Street. The station location provides good access to the regional highway network with nearby access to Interstate 20 and US 80. The City of Monroe provides local transit service through *Monroe Transit* and is analyzing potential sites to relocate the transit service's bus terminal. The City and Monroe Transit have expressed interest in locating the bus terminal near the proposed train station to improve transit connectivity in the city. Right of way to construct the station would need to be acquired as the parcel currently is privately owned. Right of way needs are discussed further in Section 5.7.

The potential station location shown in Figure 5-8 is located close to a number of downtown attractions, including Anna Gray Noe and Bry Parks, the River Market, Art Alley and the North Louisiana Children's Museum. Additionally, the station is located close to the Riverfront Development District and could benefit redevelopment efforts.

The conceptual layout for the station includes a 300-foot platform that can accommodate the proposed train consist, and will need to be constructed at 8 inches ATR so as not to conflict with the height of a standard freight train. The platform also includes safety elements, such as guardrails, a tactile strip and required ADA improvements, as well as a 150-foot canopy to protect passengers from the weather. Passenger parking areas are designed to accommodate anticipated parking needs based on forecasted ridership.

The cost estimate breakdown is shown in Table 5-4. It indicates the station is estimated to cost $431,000. To minimize cost, it was assumed that the existing pavement would not be replaced, but would need new striping to properly direct traffic and accommodate bus and taxi service.

Figure 5-7: Conceptual Monroe Station Plan

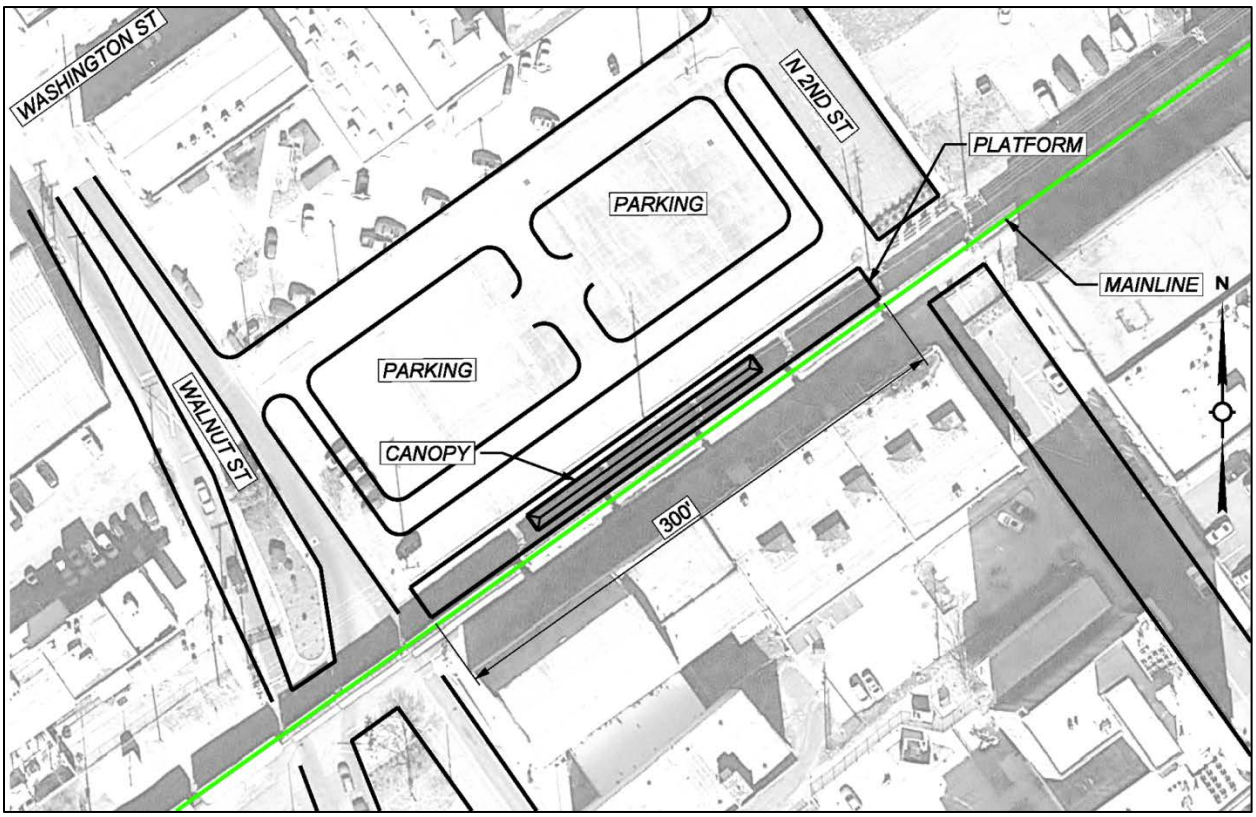


Figure 5-8: Potential Monroe Station Location

Table 5-4: Monroe Station Capital Cost Estimate (2014 Dollars)

Item	Cost
Platform (8” ATR)	$63,000
Canopy	$73,500
Pedestrian decorative handrail/guardrail (stairs)	$7,000
Concrete sidewalk	$7,000
Wheelchair lift	$10,000
Landscaping	$50,000
Site lighting	$100,000
Flagging	$8,400
Subtotal rounded up to nearest thousand	$319,000
Contingency (35%)	$112,000
Total	**$431,000**

5.5.4 Vicksburg

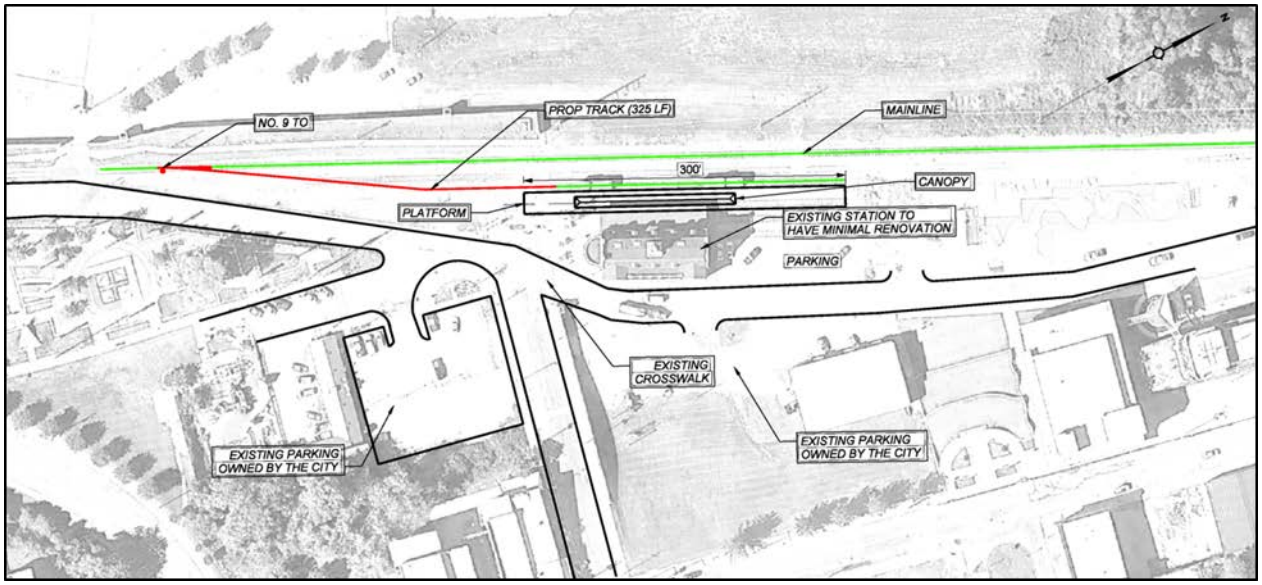
The historic Yazoo & Mississippi Valley Railroad Station has been identified as a potential station location (Figure 5-9) in Vicksburg. The station building shown in Figure 5-10 is a publicly-owned structure located within the Historic Vicksburg District, constructed in 1907, and placed on the National Register of Historic Places in 1979.[3] The City of Vicksburg's historic resources and civil war battlefield attract thousands of tourists each year. The station location is near many other attractions including the Mississippi River Museum. Five urban walking trails through the Historic Vicksburg District have also been funded, and the trail head for all five trails starts at the historic depot. The City is planning a new farmers market, museum, and casino within walking distance of the station.

If the Shreveport-Vicksburg Corridor becomes part of a larger passenger rail corridor that extends east, the Yazoo & Mississippi Valley Railroad Station may not be a viable site alternative. The location of the station does not allow for a through movement past the station to continue east from Vicksburg toward Jackson, Miss. Substantial travel time would be lost changing operating ends as the train is dwelling at the depot and may require substantial investment in new infrastructure to minimize impact on travel time.

Currently, the station building serves as a railroad museum and office facility. In the cost estimate provided in Table 5-5, it is assumed some renovation to the building would be needed to adequately serve modern passenger rail service.

The conceptual plan includes a 300-foot platform that can accommodate the proposed train consist. The platform will need to be constructed 15 inches ATR to meet FRA and ADA "level boarding" standards for platforms not directly adjacent to track serving active freight operations. The platform also includes safety elements, such as guardrails, a tactile strip and required ADA improvements, as well as a 150-foot canopy to protect passengers from the weather. It is assumed existing parking around the station would accommodate forecasted passenger parking needs. Existing city-owned parking is labeled on Figure 5-9. The cost to rehabilitate the existing depot, reconstruct the train platform and provide a layover/station track is estimated at $990,000.

Figure 5-9: Vicksburg Conceptual Station Layout



[3] *Mississippi Department of Archives and History. Historic Resource Inventory. Yazoo & Mississippi Valley Depot Fact Sheet. August 2007. Accessed May 2015 at https://www.apps.mdah.ms.gov/Public/prop.aspx?id=27583&view=facts&y=1050.*

Figure 5-10: Potential Vicksburg Station Location (Historic Yazoo & Mississippi Valley Railroad Station)

Table 5-5: Vicksburg Station Capital Cost Estimate (2014 Dollars)

Item	Cost
Passenger rail facility renovation	$238,000
Platform (15" ATR)	$105,000
Canopy	$73,500
Pedestrian decorative handrail/guardrail (stairs)	$7,000
Concrete sidewalk	$7,000
Wheelchair lift	$10,000
Landscaping	$50,000
Site lighting	$100,000
Layover trackage	$56,900
Layover No. 9 hand throw turnout	$77,000
Flagging	$8,400
Subtotal rounded up to nearest thousand	$733,000
Contingency (35%)	$257,000
Total	**$990,000**

5.6 MAINTENANCE FACILITY

This feasibility study recommends the Shreveport-Vicksburg Service contract for equipment maintenance with a nearby freight maintenance facility if possible. Employing a freight railroad to conduct the equipment maintenance would save the project in up-front capital costs as a new maintenance facility will not need to be constructed.

The capital cost estimate in Table 4-1 assumes that an agreement can be made with either KCS at their Deramus Yard or Union Pacific (UP) at their Hollywood Yard in Shreveport. The KCS Deramus Yard, shown in Figure 5-11 is located 7.4 miles from the proposed Shreveport/Bossier City station location identified in Section 5.5.1. The UP Hollywood Yard is located slightly closer (5.7 miles away) to the proposed Shreveport/Bossier City station near Traffic Street, and is shown in Figure 5-12. It is anticipated that either freight railroad would be able to perform the standard maintenance and turnaround service needed to keep the train equipment in good working order and store spare equipment.

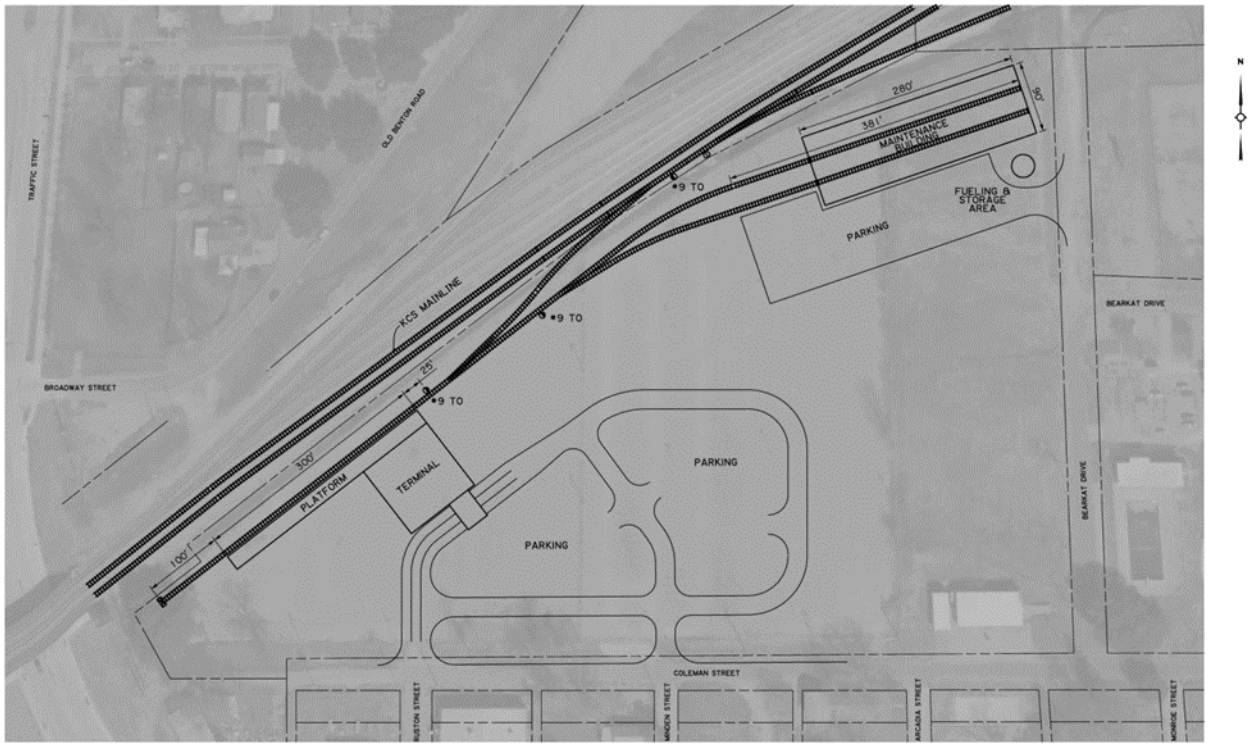
Figure 5-11: Aerial Image of Kansas City Southern Deramus Yard

Figure 5-12: Aerial Image of Union Pacific Hollywood Yard

If the equipment maintenance and turnaround service is not contracted out to a nearby freight railroad, a new maintenance facility would need to be constructed for the service. A conceptual maintenance facility plan was developed and is located at the Shreveport/Bossier City station location identified in Section 5.5.1. The identified maintenance facility location should only be considered as a potential site to be further analyzed in later planning efforts if a maintenance facility needs to be constructed. Additional detailed planning, alternative site analysis and public outreach should be conducted before selecting a preferred location for the maintenance facility.

The conceptual plan for the maintenance facility, shown in Figure 5-13, features standard infrastructure that is needed to perform day-to-day maintenance on locomotives, coach cars and NPCUs. The maintenance facility is estimated to cost $21.68 million as seen in Table 5-6. The order-of-magnitude cost estimate represents a high-level analysis of the maintenance facility infrastructure needs.

Figure 5-13: Conceptual Shreveport/Bossier City Maintenance Facility Plan



Note: Passenger terminal building, platform, and parking are included in conceptual plan to understand maximum site constraints.

Table 5-6: Shreveport/Bossier City Maintenance Facility and Passenger Terminal Capital Cost Estimate (2014 Dollars)

Item	Cost
Car maintenance building (Includes fueling & storage area)	$11,642,400
Administrative offices	$560,000
Car wash facility	$378,000
Car wash equipment	$2,800,000
Asphalt removal	$13,300
Aggregate SubBase for parking (6")	$197,400
Asphalt entrance parking - HMA (6")	$11,600
Aggregate base course (6")	$2,300
Layover trackage	$249,400
Layover No. 9 hand throw turnout	$154,000
Flagging	$50,400
Subtotal rounded up to nearest thousand	$16,059,000
Contingency (35%)	$5,621,000
Total	**$21,680,000**

5.7 RIGHT OF WAY

For this feasibility study, it is assumed all track, structure, and signal infrastructure improvements could be constructed within the existing KCS right of way, if approved by KCS. Also, it is assumed no right of way acquisition costs would be incurred at the Shreveport/Bossier City, Ruston, and Vicksburg station locations because the sites are currently owned by municipalities. The station location in Monroe is privately owned and would require the acquisition of about 1 acre of land. Based on appraised values of property near the Monroe station location, right of way acquisition plus a 35 percent contingency is estimated at a cost of $94,000.

6 OPERATING AND MAINTENANCE COSTS CALCULATION METHODOLOGY

Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) requires Amtrak to work with its state partners to establish a consistent cost-sharing methodology across all corridor routes of less than 750 miles to ensure fair and equitable treatment of all states. In collaboration with a State Working Group, Amtrak developed a methodology that groups costs into a wide range of categories. The methodology links direct costs and other costs closely connected to train operations (for example, train crew labor costs, which are generally associated with operation of a specific route) to trains operating on particular routes. For operating costs that are not attributable solely to a particular route, the methodology allocates a proportionate share of these costs to all associated routes based on factors that reasonably reflect relative use.

The annual operating and maintenance (O&M) costs for this corridor were developed in compliance with the *PRIIA Section 209 Cost Methodology Policy.*[4] Unit costs are used in conjunction with key annual operating statistics shown in Table 6-1. Unit costs were developed from annual operating costs presented in the *Fort Worth, TX to Shreveport, LA Financial Evaluation*[5], the *Baton Rouge – New Orleans Intercity Rail Feasibility Study Capital and Operating Plan*[6], and annual operating costs from Amtrak's Fiscal Year (FY) 2014 Wolverine train operations[7]. The Fort Worth-Shreveport and Baton Rouge-New Orleans studies provide O&M cost estimates for service with similar operating characteristics and are located in the southern part of the United States. Amtrak's FY 2014 Wolverine operating cost data is also used to develop unit costs as it provides current data on train and engine crew and capital overhaul costs.

All unit costs provided in this study are reported in 2014 dollars. Each O&M cost category is driven by the key annual operating statistic that is most appropriate for that type of expense. For example, the cost for train and engine crew labor is driven by total train hours, while the cost for fuel is driven by total train miles. The cost drivers used for each O&M cost category are shown in Table 6-2.

Table 6-1: Key Annual Operating Statistics

Operating Statistics	Total
Forecasted Annual Ridership (2035)	81,500
Forecasted Annual Revenue (2014 $)	$1,353,000
Total Train Miles	244,652
Total Train Hours	3,504
Total Operated Passenger Miles	7,582,000
Scheduled One-Way Trips	1,460
Number of Stations	4
Locomotive Units Used	2
Non-Powered Control Units Used	2
Coach Car Units Used	4
Locomotive and Car Unit Miles	978,609

[4] *The States Working Group and Amtrak. PRIIA Section 209 Cost Methodology Policy, Final Version. August 31, 2011.*

[5] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

[6] *Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes; Capital Region Planning Commission; Baton Rouge Area Foundation. Baton Rouge – New Orleans Intercity Rail Feasibility Study Capital and Operating Plan. February 2014.*

[7] *Amtrak. Michigan State-Supported Service Section 209 Services Operating Pricing. FY2014.*

Table 6-2: Operating and Maintenance Cost Categories and Primary Cost Drivers

Cost Driver	O&M Cost Category
Forecasted Annual Ridership	• Route Advertising • Sales Distribution • Reservations and Call Centers • Commissions
Forecasted Annual Revenue	Marketing
Total Train Miles	• Host Railroad Maintenance of Way • Fuel & Power
Total Train Hours	Train and Engine Crew Labor
Total Operated Passenger Miles	• Customer Concession • Insurance • Police
Scheduled One-Way Trips	Regional/Local Police
Number of Stations	Stations
Locomotive Units Used	Capital Equipment Overhaul
Non-Powered Control Units Used	Capital Equipment Overhaul
Coach Car Units Used	Capital Equipment Overhaul
Locomotive and Car Unit Miles	Car & Locomotive Maintenance and Turnaround

6.1 OPERATING AND MAINTENANCE COST CATEGORIES

The costs have been calculated for several major O&M cost categories as suggested in the *PRIIA Section 209 Cost Methodology Policy.*[8] A description of the O&M cost categories that were used to develop the O&M cost estimate are provided below.

6.1.1 Third Party Costs

HOST RAILROAD MAINTENANCE OF WAY

It is assumed the Shreveport-Vicksburg Service would share the existing KCS Vicksburg Subdivision track with freight operations. Therefore, KCS will require payment to help maintain the railroad to Federal Railroad Administration (FRA) Class 4 standards. The existing track is currently maintained to FRA Class 4 standards, which accommodates 79 mph maximum passenger service speed. Capital track improvements, such as new track, ballast, and a Positive Train Control (PTC) signal system are also needed to support passenger rail. The passenger rail service would be responsible for a portion of the maintenance of the new rail infrastructure.

Payment to the host railroad would equal the incremental costs associated with the use of the railroad tracks for passenger service. For the purposes of this feasibility analysis a unit cost of $4.98 per train mile[9] is used to calculate the host railroad payment.

[8] *The States Working Group and Amtrak. PRIIA Section 209 Cost Methodology Policy, Final Version. August 31, 2011.*

[9] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

FUEL AND POWER

It is assumed that each train will be powered by one P-42 diesel locomotive. An average consumption rate of 1.77 gallons per mile was estimated based upon the *Fort Worth, TX to Shreveport, LA Financial Evaluation.*[10] Assuming diesel fuel costs $3.96 a gallon in 2014 dollars, this translates into a cost of $7.01 per train mile.

6.1.2 Route Costs

TRAIN AND ENGINE CREW LABOR

Train and engine crew labor accounts for salaries, wages, and benefits for employees providing services for train operation. These costs are calculated using a unit cost of $417.18 per train hour.[11]

CAR AND LOCOMOTIVE MAINTENANCE AND TURNAROUND

The annual costs for equipment, labor and facilities related to the maintenance of the locomotives and passenger cars are included in this expense category. Turnaround service typically consists of cleaning, inspection and minor repairs before or after revenue service. This expense item also includes scheduled heavy maintenance, but excludes capitalized maintenance and overhaul. The total maintenance and turnaround cost is based on a unit cost of $2.53 per locomotive and car unit mile[12].

ON-BOARD SERVICE – CREW

Due to the relatively short distance between Shreveport and Vicksburg, it has been assumed that food and beverage service would not be provided for the service; therefore no annual on-board service (OBS) costs were included in the O&M cost estimate. This would reduce operating costs and avoid adding a separate commissary car to the train consists. Food and beverage revenues are not expected to fully cover all the O&M costs associated with food and beverage service.

COMMISSARY PROVISIONS

The service would not have annual commissary provisions since this study assumes food and beverage service would not be provided.

ROUTE ADVERTISING

Route advertising expenses are for the cost of marketing the Shreveport-Vicksburg Corridor service to potential customers. These marketing efforts are in addition to the typical national Amtrak marketing programs that are not accounted for in this cost category. The cost of route advertising is based on a unit cost of $0.25 per forecasted rider.[13]

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[10] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

[11] *Amtrak. Michigan State-Supported Service Section 209 Services Operating Pricing. FY2014.*

[12] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

[13] *Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes; Capital Region Planning Commission; Baton Rouge Area Foundation. Baton Rouge – New Orleans Intercity Rail Feasibility Study Capital and Operating Plan. February 2014.*

SALES DISTRIBUTION

Sales distribution costs typically fund the development of new ticketing and other on-board systems in support of enhancing Amtrak service. Sales distribution costs are based on a unit cost of $0.31 per forecasted rider.[14]

RESERVATIONS AND CALL CENTERS

The annual cost for reservations and call centers covers the salaries, wages, and benefits for call center employees, travel agency costs and supporting information systems. Reservations and call center costs are based on a unit cost of $0.99 per forecasted rider.[15]

STATIONS

The potential service will stop at four station locations, including Shreveport/Bossier City, Ruston, Monroe and Vicksburg. For this start-up service, it has been assumed that all stations would only provide necessary station features and would be unmanned. A unit cost of $10,000 per station was used to cover cleaning and maintenance costs throughout the year.

CAPITAL EQUIPMENT OVERHAUL

Capital equipment overhaul costs cover the cost of major equipment overhauls that are meant to keep the train equipment in a state of good repair and assure the equipment is FRA compliant. Capital equipment overhauls are not completed on an annual basis, but on a less frequent life cycle maintenance plan determined by Amtrak.

Amtrak collects payment ahead of actual overhaul service on an annual basis to spread the cost over time. The annual payments can vary year to year due to the nature of the capital overhaul work scheduled for each equipment type.

Annual costs are calculated on a pro-rata share of the Amtrak fleet which is based on the number and type of locomotives and coach cars used in the service. Annual unit costs per train unit[16] are shown in Table 6-3.

Table 6-3: Annual Pro Rated Capital Equipment Overhaul Costs by Train Unit

Train Unit	Annual Pro Rated Cost
Locomotive	$195,000
Non-Powered Control Unit	$153,000
Coach Car	$114,000

COMMISSIONS

Commission costs include commissions from credit card transactions, travel agencies, airline system access fees and sales by other carriers. Commission costs are based on a unit cost of $0.27 per forecasted rider.[17]

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[14] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

[15] *Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes; Capital Region Planning Commission; Baton Rouge Area Foundation. Baton Rouge – New Orleans Intercity Rail Feasibility Study Capital and Operating Plan. February 2014.*

[16] *Amtrak. Michigan State-Supported Service Section 209 Services Operating Pricing. FY2014.*

[17] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

CUSTOMER CONCESSION

Customer concession, or passenger inconvenience costs, includes payments to passengers as a result of delays that are typically in the form of food, lodging and alternate transportation. Customer concession is calculated based on a unit cost of $0.0003 per passenger mile.[18]

CONNECTING MOTOR COACH

Motor coach service is not proposed for the Shreveport-Vicksburg service.

REGIONAL/LOCAL POLICE

Costs for police patrolling duties in support of Amtrak trains, facilities and rights of way are based on a unit cost of $4.79 per scheduled one-way trip.[19]

BLOCK AND TOWER OPERATIONS

No block and tower operating costs are associated with the proposed project.

TERMINAL YARD OPERATIONS

No terminal yard operating costs are associated with the proposed project as the train consists would be parked at the terminal stations on either end of the corridor when not in service.

TERMINAL MAINTENANCE OF WAY

The proposed service does not utilize any major Amtrak-owned terminal stations. No operating costs are attributed to this cost category.

INSURANCE

Insurance for passenger train operations is based on a unit cost of $0.012 per passenger mile.[20]

6.1.3 Additives

A number of route costs require an additional level of funding support and include additive costs that are proportional to the service provided. These additives were developed by converting support cost data from the Amtrak Performance Tracking (APT) system into rates that are consistent across all trains in a region. Table 6-4 shows the additive rates applied to O&M cost estimates. All additives, except for police, are a percentage of the route cost(s) identified in the table.

[18] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

[19] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

[20] *Amtrak. Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA Route & Service Financial Evaluation. November 7, 2013.*

Table 6-4: Section 209 Additive Rates

O&M Additive Category	Unit Rate/Cost
Train and Engine	33.5% of Train and Engine Crew Labor
Maintenance of Equipment	27.1% of Car and Locomotive Maintenance and Turnaround
On-Board Service and Commissary	10% of On-Board Service Crew and Commissary Provisions
Police	$0.005 per Passenger Mile
Marketing	1.9% of Total Forecasted Revenue
General and Administrative	2% of all Route Costs

7 OPERATING AND MAINTENANCE COSTS AND STATE SUBSIDY REQUIREMENT

Using the methodology and operating scenario described in Section 6, O&M costs have been estimated for the first full year of operation for the potential Shreveport-Vicksburg Service. All O&M costs shown in Table 7-1 are shown in 2014 dollars. The estimated total annual O&M costs is $9.644 million, which includes an annual pro-rated expense for capital equipment overhaul.

Table 7-1 shows projected revenue of $1.353 million based on the forecasted ridership for the potential service. Ticket revenue is based on a ticket fare of $0.18 per passenger mile and is comparable to other Amtrak service in the region including the Texas Eagle and Sunset Limited.

The ticket revenue will offset a portion of the operating costs of the service and reduce the public subsidy that would be needed. The net annual operating subsidy is estimated at $8.291 million as shown at the end of Table 7-1.

Table 7-1: Operating & Maintenance Cost Estimate (2014 Dollars)

O&M Cost Category	Total Cost
REVENUES	
Ticket Revenue	$1,353,000
Food and Beverage	-
Other Revenue	-
Total Revenue	**$1,353,000**
EXPENSES	
Third Party Costs	
Host Railroad	$1,218,000
Fuel and Power	$1,715,000
Subtotal: Third Party Costs	**$2,933,000**
Route Costs	
Train and Engine Crew Labor	$1,462,000
Car and Locomotive Maintenance and Turnaround	$2,476,000
On-Board Service – Crew	-
Commissary Provisions	-
Route Advertising	20,000
Sales Distribution	$25,000
Reservations and Call Centers	$81,000
Stations	$40,000
Capital Equipment Overhaul	$1,152,000
Commissions	$22,000
Customer Concession	$2,000
Connecting Motor Coach	-
Regional/Local Police	$7,000
Block and Tower Operations	-
Terminal Yard Operations	-
Terminal Maintenance of Way	-
Insurance	$91,000
Subtotal: Route Costs	**$5,378,000**
Additives	
Marketing	$26,000
Train and Engine	$490,000
Maintenance of Equipment	$671,000
On-Board Service	-
Police	$38,000
General and Administrative	$108,000
Subtotal: Additives	$1,333,000
TOTAL EXPENSES	$9,644,000
NET ANNUAL OPERATING SUBSIDY	$8,291,000

8 IMPACT OF INCLUDING DESTINATIONS BEYOND LOUISIANA

The Shreveport-Vicksburg Service would serve the four largest metropolitan areas in north Louisiana. However, at an average of 270 passengers per day, trains would typically be running at half capacity and generate revenue that would recover less than 15 percent of the total O&M cost.

The Shreveport-Vicksburg Corridor lacks a major population center that would drive greater ridership to support the corridor service. Major population centers not only provide a large pool of potential riders, but also serve as popular destinations that increase ridership from other station cities along the corridor. As a result, the study team analyzed the impacts of including destinations outside of Louisiana. This section describes the impacts on the service at a conceptual level.

8.1 FORECASTED RIDERSHIP AND REVENUE

Ridership and revenue was forecasted based on extending the Shreveport-Vicksburg Service west to Dallas/Fort Worth (DFW). The DFW metropolitan statistical area (MSA) has a population of 6,426,214, nearly 15 times larger than the Shreveport-Bossier MSA population.[21] The forecast was developed to understand the impact of serving a large metroplex would have on ridership in the Shreveport-Vicksburg Corridor.

The forecast was developed using the same operational characteristics proposed for the stand-alone Shreveport-Vicksburg Service. However, when modeling this longer corridor, short or commuter type trips were removed from the forecast since the model analyzed ridership based on an assumed intercity travel market. This longer intercity corridor service is not expected to be practical for daily commuting trips. Comparisons between the methodologies used in each service scenario are detailed in Appendix A.

As indicated in Table 8-1, forecasted ridership for the typical weekday (Monday to Thursday) in 2035 between Shreveport and Vicksburg would be about 600 riders per day if the passenger rail service was extended to the DFW area.

Figure 8-1 depicts the 2035 weekday daily ridership on each segment of the Shreveport-Vicksburg Corridor, along with the weekday boardings (on) and alightings (off) at each station. It should be noted that the boardings and alightings include riders traveling from Texas to Louisiana via extended passenger service.

Table 8-2 shows the total annual ridership for the Shreveport-Vicksburg Corridor with a connection to DFW is estimated to be about 181,000.

[21] *United States Census Bureau.* CPH-T-5 Population Change for Metropolitan and Micropolitan Statistical Areas in the United States and Puerto Rico (February 2013 Delineations): 2000 to 2010. *Retrieved on 6/24/2015 from https://www.census.gov/population/www/cen2010/cph-t/CPH-T-5.pdf.*

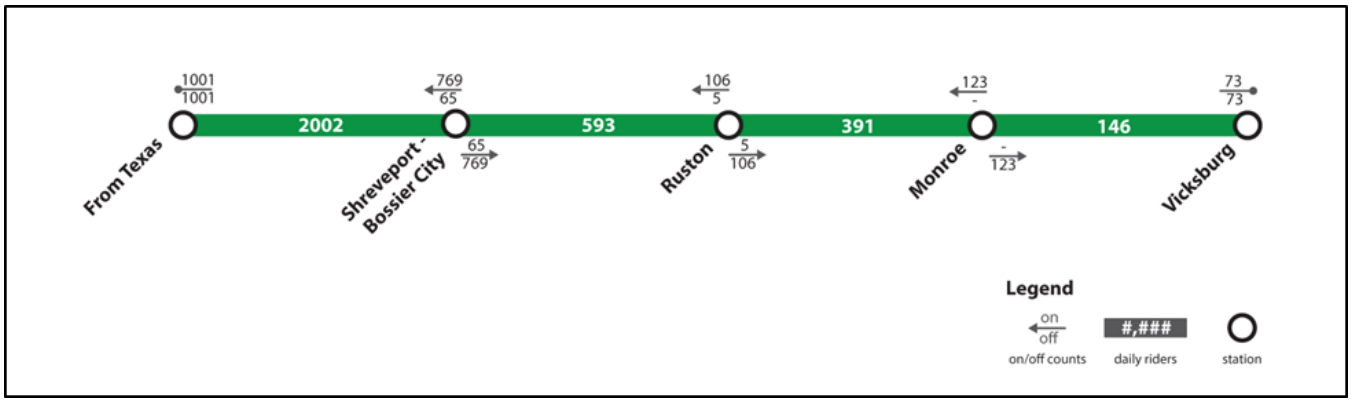
Table 8-1: 2035 Weekday Station-to-Station Daily Ridership Shreveport to Vicksburg with DFW Extension

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	–	106	123	68	**297**
Ruston	106	–	–	5	**111**
Monroe	123	–	–	–	**123**
Vicksburg	68	5	–	–	**73**
Total	**297**	**111**	**123**	**73**	**603**

Note: For simplicity, total boardings and alightings reported at Shreveport/Bossier City include travelers from Texas traveling to and from points east of Shreveport/Bossier City.

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A)

Figure 8-1: 2035 Typical Weekday Daily Ridership Shreveport to Vicksburg with DFW Extension



Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A)

Table 8-2: 2035 Annual Station-to-Station Ridership Shreveport to Vicksburg with DFW Extension

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	31,844	36,761	20,372	**88,977**
Ruston	31,844	-	-	1,520	**33,365**
Monroe	36,761	-	-	-	**36,761**
Vicksburg	20,372	1,520	-	-	**21,893**
Total	**88,977**	**33,365**	**36,761**	**21,893**	**180,995**

Note: For simplicity, total boardings and alightings reported at Shreveport/Bossier City include travelers from Texas traveling to and from points east of Shreveport/Bossier City.

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A)

Based on the fare price between stations, as shown in Table 3-4, the 2035 annual revenue was calculated in 2014 dollars. The annual revenue is presented in Table 8-3. The 2035 total annual revenue for the passenger rail service with a connection to DFW is estimated to be about $3,365,000.

Table 8-3: 2035 Annual Revenue Shreveport to Vicksburg with DFW Extension (2014 Dollars)

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	382,129	661,693	611,168	1,654,990
Ruston	382,129	-	-	27,369	409,498
Monroe	661,693	-	-	-	661,693
Vicksburg	611,168	27,369	-	-	638,536
Total	1,654,990	409,498	661,693	638,536	3,364,717

Source: Alliance Transportation Group. Northwest Louisiana Council of Governments Passenger Rail Feasibility Study: Ridership Forecast Methodology, May 20, 2015 (Appendix A)

In comparison to the stand-alone Shreveport-Vicksburg Service, adding an extension to DFW is expected to increase annual ridership in the Shreveport-Vicksburg Corridor by over 120 percent and revenue by nearly 150 percent. Additional increases in ridership and revenue would also be expected if the service were extended further east to connect to existing Amtrak service in Meridian, Miss., or extended further yet to Birmingham or Atlanta.

8.2 INFRASTRUCTURE AND CAPITAL COSTS

Additional infrastructure improvements would need to be constructed in Louisiana (and in other states) to support a longer distance service that is extended to cities beyond Louisiana. Additional track infrastructure would be needed to support larger train consists that can accommodate higher ridership levels. New track infrastructure may also be needed to support increased train speeds and/or frequencies depending on the needs of a longer distance service. Stations would also need longer platforms, larger parking facilities and potentially more station amenities such as an enclosed station building with ticketing service and restrooms.

Within Louisiana, there may not be a need to construct a maintenance or layover facility as it may be most efficient to construct these facilities at strategic locations that are closer to the terminal stations located out of state. Constructing maintenance and layover facilities at each end of the route avoids having to run non-revenue (empty) trains between the route termini and a maintenance/layover facility that is potentially hundreds of miles away.

The infrastructure needed to support a longer distance passenger service would increase the overall capital cost to construct the project. However, the improvements would help in providing a service that is likely to be more self-sustaining operationally as compared to a stand-alone Shreveport-Vicksburg Service. Depending on the extent of a longer passenger rail corridor, each participating state would be responsible for the cost of infrastructure improvements within its state. The federal government has also funded passenger rail projects around the country through prior legislation and may also be a source of funding as it becomes available. The FRA would likely be more inclined to provide federal funding to support a more self-sustaining service that spans a longer corridor. Additional information on funding and financing capital projects can be found in Section 9.

8.3 OPERATING AND MAINTENANCE COSTS

The implementation of a longer passenger rail service would increase the total O&M costs incurred to operate the service. In comparison to the stand-alone Shreveport-Vicksburg Service, the operating characteristics of a longer distance service would need to be tailored to fit the needs of the communities it is serving, and therefore would be different. Once a longer corridor is identified, operating characteristics, such as train speed, stopping patterns, and frequency can be optimized in coordination with the development of the ridership forecasts and O&M cost estimates.

A corridor and operating characteristics for a long-distance service that travels through North Louisiana has not yet been identified, so O&M cost estimates cannot be developed and compared to the estimates in Section 7. However, because many of the O&M cost item estimates are based on operating statistics like train miles, train hours, and equipment usage it can be surmised that the total O&M costs will increase because the route will be a longer distance. Additionally, there will be more stations to maintain and food service will likely become a necessity to accommodate longer distance travelers.

8.4 OPERATING SUBSIDY

As indicated in Section 8.1, the revenue generated by including large metropolitan destinations outside of Louisiana is expected to boost overall revenue for the service and may offset a larger portion of the O&M costs despite its increase. Typically, conventional 79 mph service will continue to need state subsidies to operate, but potentially at a lower percentage of the total O&M cost.

Intercity passenger rail services with increased speeds at 110 mph or greater have shown the potential to operate at a surplus if frequency and fares are optimized. Analysis of different operating scenarios would need to be completed in a separate study of the longer distance corridor to assess the operational and financial feasibility of each service scenario.

Louisiana would also benefit from the ability to share the operating costs across the states in which the service travels. Agreements among the states and Amtrak would be formed to allocate a certain percentage of the O&M costs to each state based on operating statistics for the service. It is expected that sharing the cost amongst multiple states would lessen the burden for all states subsidizing the service, assuming the service needs to be subsidized.

9 RAIL FUNDING AND FINANCING

While funding of any new transportation project is challenging, the passenger rail sector has many established options to contribute funding to the overall delivery plan. The identification of upfront funding sources as well as dedicated on-going revenue streams is critical in assessing a project's viability and feasibility.

The starting point for this feasibility analysis is to identify the funding and financing options available for the Shreveport-Vicksburg Corridor service so transportation officials, policy makers and stakeholders can develop a tailored plan as the project progresses. This section evaluates classic and alternative funding sources and financing tools.

It is important to understand the distinction between funding sources and financing techniques. Funding broadly refers to the sources of revenue that can be used to pay for the capital or operating costs. Financing refers to financial tools to access money to pay for a project before the project generates the necessary revenue to pay for the investments. The borrower (typically a state) is liable to pay back the capital amount along with a certain percentage of interest.

Financing can have many different forms (such as debt, equity, and capital leases), but in each case they are a means to capture the upfront value of the given revenue stream and apply the proceeds to fund construction and equipment.

Table 9-1 identifies the major categories of funding and financing. The following subsections introduce each option and provide preliminary commentary on the benefits and considerations of each option.

Table 9-1: Funding and Financing Options

Funding	Financing
Taxes	Bonds
Grants	Federal Low Interest Loan Programs (TIFIA/RRIF)
Fare Box	Private-Public Partnership (P3)
Value Capture	State Infrastructure Bank

9.1 FUNDING OPTIONS

Passenger rail typically requires multiple funding sources and is accomplished through multiple partnerships of key public agencies and private sector participants. This is especially true for projects that do not have a dedicated tax revenue stream to fund their specific development and operating costs. In most cases, a passenger rail project will have several funding sources to help fund both the initial project development and also the long-term operations. Since most passenger rail services operate at a deficit (project-specific revenues cannot pay the annual operations costs) it is even more critical for rail projects to find ongoing revenue streams capable of ensuring the long-term payment and feasibility of operations.

The upfront funding component is typically made up of a combination of one-time grants or public equity contributions and supplemented with a financing of ongoing revenues. Ongoing funding commitments from dedicated tax revenue streams, pledged local/state funds and fare box revenues need to demonstrate the ability to cover all ongoing O&M costs.

9.1.1 Tax Sources

The generation of local revenues to support the upfront and ongoing costs is required of rail projects. Taxes are the most common source to fund rail projects. Tax sources are typically stable and can be very broad based. The common form of tax sources are listed below:

- Sales taxes
- General Fund (property and/or income taxes)
- Motor fuel and vehicle registration (if legally permissible)

In Louisiana, sales and motor fuel taxes are established statewide. Localities have the option to create a local option sales tax in addition to the state tax rate. Property taxes are established at the jurisdiction level as well. Other governmental sources could also be applied, such as land sales or MPO funding.

9.1.2 Grant Funding

FEDERAL FUNDING SOURCES

Historically, states have relied on a variety of relatively small federal and state funding programs to develop its state passenger and freight rail systems. With the passage of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) and the American Recovery and Reinvestment Act of 2009 (ARRA), the federal funding picture has changed – especially for passenger rail development. FRA grant programs have mainly been funded through authorizations and appropriations included in legislation like PRIIA and ARRA. However, federal funding through FRA's major grant programs is currently exhausted as all funding has been allocated. Future federal funding levels are also unclear due to the lack of a long-range transportation bill.

PRIIA reauthorized Amtrak and established the framework for a national passenger rail program that lays out a federal/state partnership to fund and develop intercity passenger rail service in the United States. The new statutory framework established a federal/state partnership to fund and develop U.S. high-speed and intercity passenger service using 80 percent federal and 20 percent state capital grants. It is likely that any future federal authorizations for intercity passenger rail funding will continue to follow the PRIIA framework and guidance developed under the FRA High-Speed Intercity Passenger Rail Program (HSIPR). Recently, funding through FRA grant programs has been limited and none of the programs are currently accepting applications.[22] Competitive discretionary FRA grant programs set up under PRIIA are listed below:

- High-Speed Intercity Passenger Rail Program (HSIPR)
  Grants funding for long-term high and higher speed passenger rail in key corridors in the United States.
- Rail Line Relocation & Improvement Capital Grant Program (RLR)
  Under this program, a state is eligible for a grant from FRA for any construction project that improves the route or structure of a rail line and (1) involves a lateral or vertical relocation of any portion of the rail line, or (2) is carried out for the purpose of mitigating the adverse effects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development.
- Railroad Safety Technology Grant Program
  Provides financial assistance to passenger and freight rail carriers, railroad suppliers and state and local governments for the deployment of positive train control (PTC) collision avoidance systems and complementary technologies.

[22] *U.S. Department of Transportation, Federal Railroad Administration. Grants and Loans. Accessed June 2015. http://www.fra.dot.gov/Page/P0021*

Along with PRIIA and ARRA funding authorizations, the FRA has also administered grants through the Transportation Investment Generating Economic Recovery (TIGER) program. The TIGER program is a DOT-wide program investing in critical road, rail, transit and port projects across the Nation. Since 2009, Congress has dedicated more than $4.1 billion over six funding cycles to fund projects that have a significant impact on the nation, a region or a metropolitan area. On April 3, 2015, the U.S. Department of Transportation announced $500 million will be made available for transportation projects across the country under a seventh round of the TIGER competitive grant program.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012 and became the first long-term highway authorization enacted since 2005. The bill funded surface transportation programs at over $105 billion for fiscal years (FY) 2013 and 2014. A long-term federal transportation bill that will likely be based on MAP-21 is due to be authorized. The following MAP-21 funding programs are managed by the Federal Highway Administration and Federal Transit Administration, but can be used for passenger rail projects. These programs are likely to remain under the upcoming long-term transportation bill with varying funding appropriations.

- FHWA Section 130 Crossings Program provides grants for safety improvements to reduce the number of fatalities, injuries, and crashes at public grade crossings.
- Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides a flexible funding source for freight and passenger projects which accomplish the program's air quality goals.
- Fixed Guideway Capital Investment Grants ("New Starts") provides grants for new and expanded passenger rail systems, among other transit systems.
- Enhanced Mobility of Seniors and Individuals with Disabilities funding is directed at enhancing public transportation services to serve the needs of transit-dependent populations. Funds are apportioned for urbanized and rural areas based on the number of seniors and individuals with disabilities.
- Research, Development, Demonstration, and Deployment Projects funding supports the Low or No Emission Vehicle Deployment program and other programs related to operating efficiencies. Typically applies to equipment and communications technologies.
- Urbanized Area Formula Grants (UZA) allocates funding for public transportation planning, capital improvements, and job access and reverse commute projects in areas with a population of at least 50,000. The program can also fund operating expenses in areas with fewer than 200,000 residents.
- Transit-Oriented Development Planning Pilot is a program that provides funding to advance planning efforts that support transit-oriented development (TOD) associated with new fixed-guideway and core capacity improvement projects.
- National Highway Performance Program (NHPP) provides funds for the construction of public transportation projects that help improve infrastructure condition, safety, mobility, or freight movement on the National Highway System (NHS). NHPP funds are "flexible funds" that can be transferred over from the states to transit agencies and local governments for transit projects.
- Surface Transportation Program (STP) Urban Funds are used to improve the conditions and performance of surface transportation, including passenger rail systems. In addition to capital projects, STP funds may go toward transportation planning activities, transit research and development, and alternatives analysis.

STATE AND LOCAL FUNDING SOURCES

- State of Louisiana Capital Outlay or General Fund allocation

9.1.3 Fare Box Revenues

Fare box revenues represent the direct user fees that riders of the rail system pay to utilize the service. User fees are not a tax and the user receives an immediate and direct benefit of the transportation asset in return for the fare. Fare levels are typically not set to recover the full operations cost of the asset and is instead priced to attract ridership. Since fare box revenues are not sufficient to cover operating costs, other revenue sources are required to fill the operating subsidy. Historically, fare box revenues are utilized to offset operating costs and are not pledged to repay debt.

9.1.4 Value Capture Options

Value capture is an emerging tool used in infrastructure funding and finance as a way to harness the benefits created by rail development. Value capture techniques can take a variety of forms and include business or special assessment districts, tax increment financing, development impact fees, negotiated exactions, joint development, land value tax, air rights development, and others.

Numerous variations on the implementation of value capture techniques exist but most rely on extracting the value from a new "district" along the corridor or around the stations themselves. Public entities can assess impact fees, negotiate exactions or have the landowners in a special district vote to assess themselves a fee to support the development.

9.2 FINANCING TOOLS

Once the project's funding and revenue potential has been analyzed, the next step is to translate these sources into upfront financing proceeds. The ultimate financing plan will likely utilize multiple types of debt and equity products to optimize the project's revenues and produce the upfront proceeds to deliver the project.

Municipal tax-exempt debt secured by tax revenues, user fees, TIFs or development fees is typically the most used method but federal loan programs and public-private-partnerships (P3s) are providing financing enhancements and benefits. Innovative federal programs such as RRIF loans, TIFIA loans and Private Activity Bonds can also provide significant value.

While localities or other municipal entities might find it difficult to directly provide revenues to a project, they can be important partners by providing credit support to financing by offering a back-up revenue pledge or operational assistance. The main financing tools are described in the following sections.

9.2.1 Bonds

Debt issuance in the form of capital market bonding is the most common financing tool. State and municipal entities have the benefit of issuing tax-exempt bonds for a wide array of projects. However, bonds can only be issued if they are supported by a revenue stream capable of satisfying rating agency and investors' expectations on debt repayment. The most likely bond types are listed below.

- Sales tax bonds
- General obligation bonds (full faith and credit of a government)
- Revenue bonds (specific pledge of project revenues or other source)
- Tax Increment Financing (TIF financing based on pledging the incremental sales or property taxes generated in a district benefitting from the rail project)
- Grant Anticipation Notes and Grant Anticipation Revenue Vehicles (GANs and GARVEEs are issued against a pledged federal grant or funding source)

- Private Activity Bonds (PABs are tax-exempt bonds issued by a private developer as part of a Public-Private Partnership.

9.2.2 TIFIA / RRIF

The Transportation Infrastructure Finance and Innovation Act (TIFIA) and Railroad Rehabilitation and Improvement Financing (RRIF) are similar federal credit assistance programs that allow eligible projects to receive flexible and low-cost loans. Qualified projects must submit applications and compete for loan awards, but each program is currently adequately funded to provide loans. Both loan projects have a final term of 35 years and the interest rate is based on the 30-year Treasury rate.

9.2.3 Public-Private Partnership

Public-Private Partnership (P3) project delivery plays an important role in the development of rail projects abroad as well as in the U.S. P3s can provide value to public owners by transferring risk and minimizing public subsidies, while the private equity component of a P3 financing can provide a critical funding boost or potentially serve as a local match for federal funding.

The Availability Payment structure of a Design-Build-Finance-Operate-Maintain (DBFOM) contract typically makes the most sense for a P3 rail project and can be structured in a variety of ways to fit the project. In an Availability Payment structure, the public owner pledges a broad revenue stream (typically based on tax receipts) to make annual payments over a 20-35 year period to reimburse the private partner for financing the upfront capital expenditures and operating the rail service. P3s can accelerate project delivery and rely on industry best-practices to drive implementation.

The risk transfer benefit of a P3 is particularly attractive in new rail endeavors where the public sector has not yet had an opportunity to gain the requisite technology and operations experience.

9.2.4 State Infrastructure Bank

Many states utilize a State Infrastructure Bank (SIB) to help finance projects. SIBs are usually capitalized at the state level and offer low-cost loans for key projects. SIBs can allow projects that do not typically qualify for bonds an additional financing option; they can work in tandem with bonding programs and can offer credit assistance (in the form of reserve or liquidity funds) to enhance a financing. Since SIBs are a governmental entity and do not have the same goals as debt investors, SIBs can act as a patient lender and strategically invest in economic development or priority projects.

10 OUTREACH AND PUBLIC INVOLVEMENT

Input from local, regional and state stakeholders and the public was obtained throughout the duration of the study to obtain feedback about interests and concerns regarding the potential rail service. The following subsections describe the outreach efforts that occurred during the study.

10.1 PUBLIC MEETINGS

Two rounds of public meetings, shown in Table 10-1, were conducted for the feasibility study. The first round of meetings was held on Sept. 22, 2014, to introduce the study. The second round of meetings was held on July 16, 2015, to present the results of the feasibility analysis. Attendees included key regional stakeholders such as elected officials, agency leaders, business leaders, employers and colleges and universities.

Table 10-1: Stakeholder Meetings

Date	Meeting Location	Stakeholders Represented
Sept. 22, 2014	Shreveport Chamber of Commerce, Shreveport, LA	Bossier Parish; East Texas Council of Governments; Arkansas-Louisiana-Texas Rail; Northwest Louisiana Council of Governments
Sept. 22, 2014	Ouachita Parish Library, Monroe, LA	South Delta; Vicksburg-Warren County Chamber of Commerce; Keystone Antique Furnishings; The News-Star; Louisiana Tech University; North Delta/Ouachita Council of Governments; National Park Service – Vicksburg National Military Park; City of Ruston; City of Monroe; Monroe-West Monroe Convention & Visitors Bureau; Louisiana Department of Transportation; Vicksburg Convention and Visitors Bureau; Monroe Chamber of Commerce; Lincoln Parish Police Jury; Northwest Louisiana Council of Governments; Congressman Vance McAllister Rep. Bubba Chang; Rep. Frank Hoffman; Sen. Francis Thompson; Sen. Mike Walsworth
July 16, 2015	Bossier Parish Community College, Bossier City, LA	SporTran; Northwest Louisiana Council of Governments; Bossier Press-Tribune; Bossier Parish Police Jury; Red River Radio; Shreveport Railroad Museum; The Coordinating & Development Corporation; City of Shreveport; Monroe Transit; Rep. Patrick Williams; Rep. Roy Burrel; Bossier City
July 16, 2015	Lincoln Parish Library, Ruston, LA	Northwest Louisiana Council of Governments; Southern Rail Commission; City of Ruston; City of Monroe; Louisiana Tech; Lincoln Parish; The Coordinating & Development Corporation; Edko, LLC; Lincoln Parish Schools; Louisiana Department of Transportation and Development; Ruston Daily Leader; CenturyLink; Allen, Green & Williamson; Council on Aging; Ruston-Lincoln Parish Convention & Visitors Bureau; Monroe Chamber of Commerce; Ruston Lincoln Chamber of Commerce; Edward Jones; Lincoln Realty; Rep. Robert Shadoin

Overall public comment on the study was supportive to implement passenger rail service, particularly for a larger corridor service that extended from Dallas/Ft. Worth, Texas east to Meridian, Mississippi and possibly points further east. A representative from the Southern Rail Commission also indicated the Shreveport-Vicksburg corridor is part of the commission's vision to implement passenger rail service among multiple, longer corridors in Louisiana, Mississippi and Alabama.[23]

[23] *The Southern Rail Commission is a multistate, governor-appointed body focused on safe, reliable and efficient railroad connections for people and goods.* http://www.southernrailcommission.org/

10.2 STATION COMMUNITY OUTREACH

In addition to public meetings, the project team held meetings with representatives from proposed station communities to discuss potential station site alternatives (Table 10-2). The meetings resulted in a selected station site for evaluation in the feasibility study. Selected station sites are not final and would need to undergo additional investigation during future study phases.

Table 10-2: Station Community Meetings

Meeting Date	Station City
August 2014	Bossier City
April 2015	Monroe
	Ruston
	Vicksburg

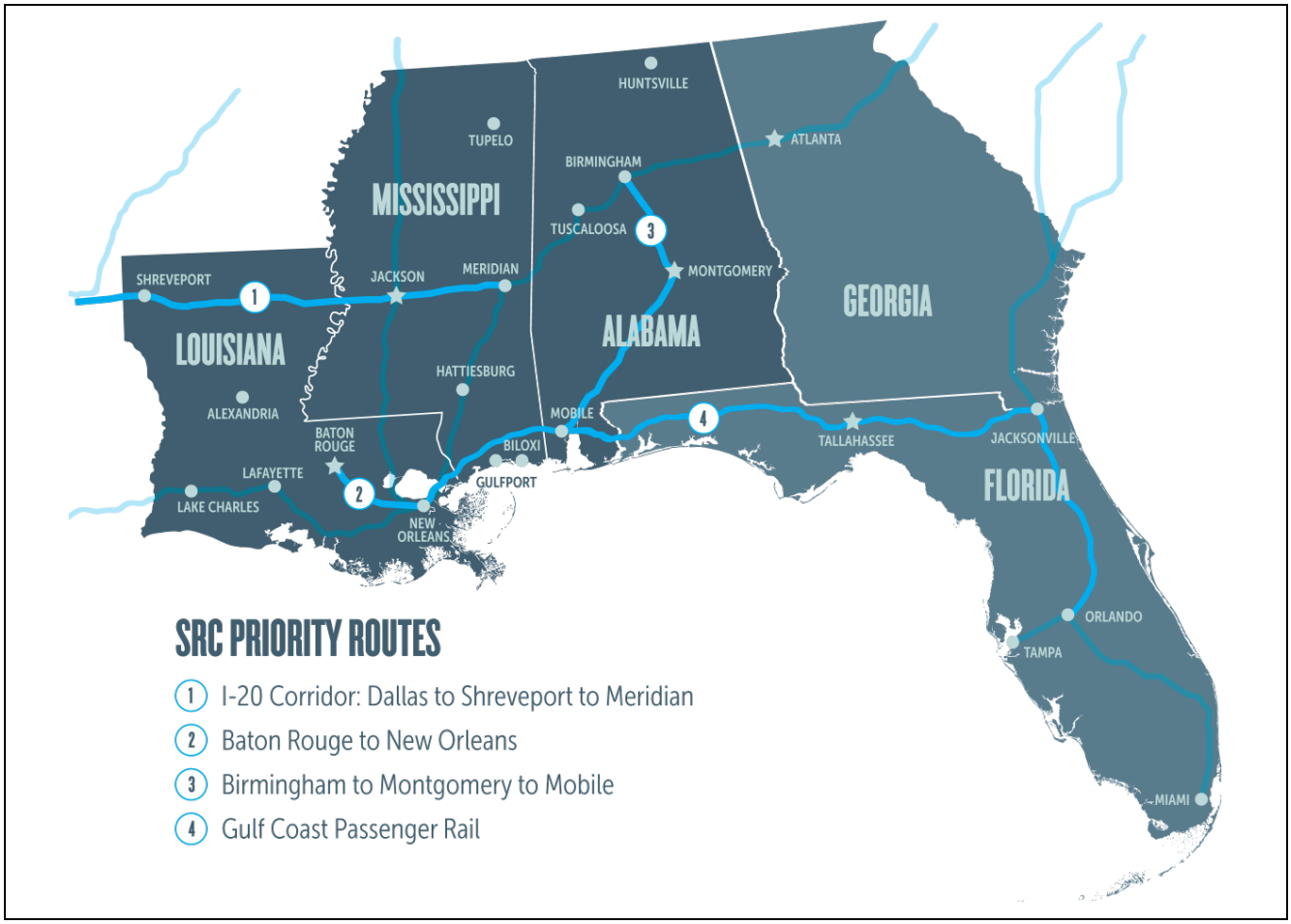
11 RECOMMENDATIONS AND NEXT STEPS

NLCOG is considering the results of this study and is sharing the information with local, regional, state and railroad stakeholders to determine the next steps. Further coordination with KCS and NS in regards to the Meridian Speedway plans and operations will also be needed.

A key consideration will be how to integrate the Shreveport-Vicksburg Corridor into a larger corridor analysis to make it more attractive for ridership and increase its feasibility for implementation. Connecting passenger rail service to major urban population and economic centers east and west (Dallas/Ft. Worth) of the Shreveport-Vicksburg Corridor should increase ridership and generate more revenue to offset the operating subsidy. Also, it would expand state funding partnerships.

The Shreveport-Vicksburg Corridor is part of a large scale plan being supported by the Southern Rail Commission (SRC). It is embedded in the I-20 Corridor: Dallas to Shreveport to Meridian route (Figure 11-1), one of the priority corridors identified by the SRC. The SRC's main goal is support passenger rail initiatives that promote safe, reliable, and efficient transportation choices for people in the SRC region. Support from the states of Texas, Louisiana, and Mississippi along with help from advocacy groups such as the SRC is needed to develop a common passenger rail strategy along this corridor.

Figure 11-1: Southern Rail Commission Priority Routes



Source: Southern Rail Commission

Appendix A
Ridership and Revenue Forecast Methodology and Results

Northwest Louisiana Council of Governments Passenger Rail Feasibility Study

RIDERSHIP FORECAST METHODOLOGY

MAY 20, 2015

Prepared for:

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Overview

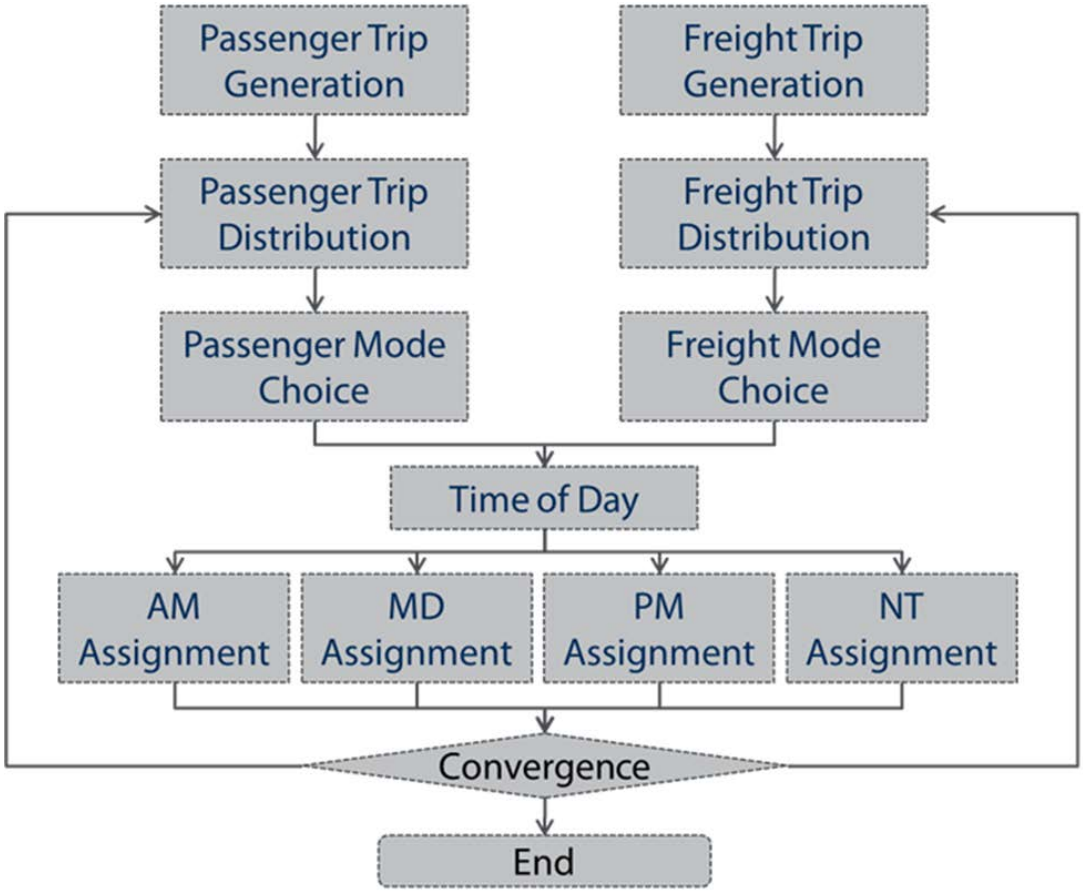
This report describes the methodology used to apply the Texas Statewide Analysis Model Version 2.5 (SAM-V2.5) as developed by HNTB Team Member, Alliance Transportation Group, Inc. (Alliance) to project annual ridership for a proposed rail service between Shreveport, LA and Vicksburg, MS. The SAM-V2.5 is a validated model that encompasses a five state area, including Texas, Louisiana, Arkansas, Oklahoma, and New Mexico. To provide an analysis of the benefits of a connection to the existing Amtrak service in nearby Marshall, TX, the SAM-V2.5 was used to develop ridership numbers in the Shreveport to Vicksburg rail corridor. This analysis added the rail corridor from Shreveport, LA to Vicksburg, MS and added Vicksburg as a virtual extension of the models zone structure. Use of the SAM-V2.5 in this way allows for the production of illustrative ridership forecast suitable for an early feasibility study of the proposed service.

Model Design

The SAM-V2.5 is an advanced four-step model with trip generation, trip distribution, mode choice, and trip assignment. Additionally, the SAM-V2.5 includes a feedback loop between the traffic assignment and trip distribution steps. Separate model streams, each including trip generation, trip distribution, and mode choice, were developed for passenger and freight travel. The SAM-V2.5 provides a significant advantage over the use of multiple urban or statewide models by providing consistency of socioeconomic input data and assumptions and the use of a single, consistent mode choice model across multiple urban areas.

Figure 1 depicts the model structure for the SAM-V2.5. The figure shows how passenger trips go through the trip generation, trip distribution and mode choice steps, and then are joined together with freight truck trips at the time-of-day step. The SAM-V2.5 has four time-of-day periods: AM (morning peak), MD (mid-day off-peak), PM (evening peak), and NT (night time off-peak).

Figure 1: Model Structure



Trip Generation

Trip generation is the first of the four primary steps in the travel demand model process. The result of the trip generation model is a set of trip productions and trip attractions for each Traffic Analysis Zone (TAZ) by trip purpose or, in the case of freight, by commodity. These productions and attractions are used to populate a seed matrix that is passed to the trip distribution step.

Trip Distribution

Trip Distribution is the second step in the traditional four-step model. The trip distribution process takes the production and attraction trip ends developed during trip generation, and connects them, in origin – destination pairs, based on the trip length frequency curves for each trip purpose. The trip length frequency curves are applied through the use of what is described in the industry as a gravity model.

Mode Choice

The passenger mode choice model is structured as a nested logit model. The mode choice models are structured in a manner similar to many urban models in which peak travel times are used for work related trip purposes, and mid-day travel times are used for non-work related trip purposes. This structure allows one mode choice model to be run for each trip purpose. The time of day step is located after mode choice, thus avoiding the running of four mode choice models for each trip purpose. Trips

can be forecast for auto drivers, auto passengers, intercity rail (ICR) passengers, High Speed Rail (HSR) passengers and air passengers.

Trip Assignment

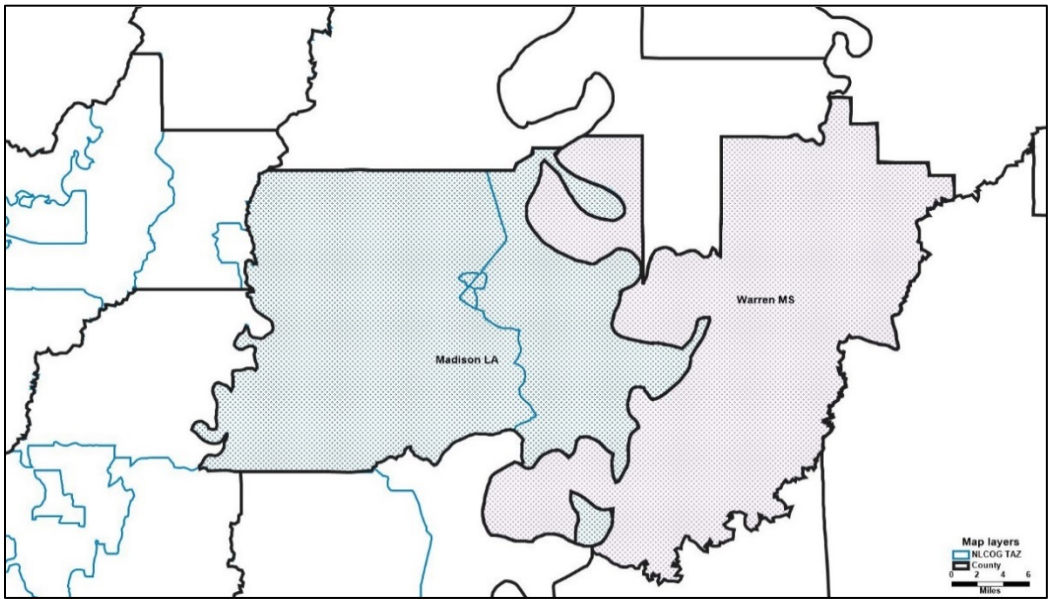
In the SAM-V2.5, the passenger and truck trips are combined and assigned using a multi-class highway assignment procedure. The model is designed to perform at the daily (i.e. 24-hour) level, and also has the flexibility to examine four distinct time periods: AM Peak, Mid-Day, PM Peak, and overnight. Toll analysis is handled with a generalized cost function during traffic assignment. Daily flows of truck tonnages are converted to freight trucks for assignment purposes using payload factors for each commodity group.

Socioeconomic Data

The socioeconomic data is used by both the passenger and freight trip generation models. Employment data uses the North American Industry Classification System (NAICS) standard established for use by Federal statistical agencies. The SAM-V2.5 employment data is maintained at the two digit NAICS level, except for the manufacturing sector, where employment is maintained at the three digit NAICS level.

In order to fully analyze the proposed rail-line extending from Shreveport, LA to Vicksburg, MS within the SAM-V2.5 environment, the demographic data of Warren County, MS (Vicksburg Micro Area) was included in the SAM TAZs within nearby Madison Parish, LA. The demographic data includes population and employment estimates for the years 2010 and 2035. The figure below shows the locations of Madison Parish, LA and Warren County, MS.

Figure 2: Locations of Madison Parish and Warren County (Vicksburg)



The 2010 Census was used as the basis for the population and household estimates, while the 2010 County Business Patterns (CBP) data generated by the Census was used as the basis for the employment

estimates. The Woods and Poole 2012 CEDDS data release[1] (2012 Complete Economic and Demographic Data Source) and the Vicksburg 2006 Travel Demand Model (TDM) were also used as adjustment and comparison data sets.

The SAM-V2.5 2035 estimates were generated using population and employment growth calculated using the CEDDS 2012 dataset. To maintain consistency, the Warren County 2035 estimates used the same method. The calculated population growth from 2010 to 2035 is roughly five percent, while the total employment growth is nearly twenty percent. Both growth rates represent less than one percent growth per year. **Table 1** shows the final demographic estimates for Warren County, MS in 2010 and 2035.

Table 1: Aggregated Warren County Demographics

Warren County	Population	Households	Basic Emp.	Retail Other Emp.	Retail Recreational Emp.	Service Education. Emp.	Service Other Emp.
2010	48,773	18,941	5,306	2,639	4,100	1,847	11,134
2035	51,211	19,888	6,367	3,167	4,920	2,216	13,361

The above demographics were incorporated into the TAZs representing Madison Parish, LA based on Area Type (AT) to maintain consistency with the SAM-V2.5 trip making parameters. AT refers to a method of classifying TAZs by a rough measure of land use intensity, primarily based on population and employment density. The demographic totals for Warren County were split into TAZs of the same AT using TAZ size ratios based on the Vicksburg 2006 TDM. As a result, Warren County AT Urban data was placed in the corresponding AT Urban TAZs of Madison Parish, and Warren County AT Rural data was placed in the corresponding AT Rural TAZs of Madison Parish. This ensured the right number and types of trips would be generated within the SAM. **Table 2** shows the area type definitions of the SAM-V2.5.

Table 2: Area Type Definition in SAM-V2.5

Area Type Number	Area Type Name	Aggregate Type	Area Type Density Range
1	Urban Intense	Area Type I	>=18
2	Large Urban, Urban Central	Area Type II	6-18
3	Large Urban, Suburban	Area Type III	2-6
4	Small Urban, Urban Central	Area Type II	6-18
5	Small Urban, Suburban	Area Type III	2-6
6	Rural, East/Central	Area Type IV	<2
7	Rural, West	Area Type IV	<2
8	Rural, Panhandle	Area Type IV	<2

Rail Station Location

To account for the Warren County, MS (Vicksburg) demographics being transferred to Madison Parish, LA, the rail station for Vicksburg was also represented as being in Madison Parish, LA. The rail station location follows the same AT methodology previously mentioned to best allow access from TAZs representing the city of Vicksburg. Characteristics of the rail are hard-coded so that the change in length does not alter the rail line's performance.

[1] *"Woods & Poole Economics, Inc. Washington, D.C. Copyright 2009. Woods & Poole does not guarantee the accuracy of these data. The use of these data and any conclusions drawn from it are solely the responsibility of [you, the user]."*

Tourist Trips

Alliance calculated the number of infrequent long distance tourist trips to cities along the rail line being studied. A tourist trip was defined as travel 50 miles or more away from home which included an overnight stay. While the annual tourist trips from over 50 miles away in 2010 was available in Shreveport and Monroe, further information on local data and the other cities was not available. As a result, the number of long distance trips were determined from the local data, national surveys of long distance travel, and professional judgement.

Long distance trips were assumed to occur at a 50/50% split between weekdays and weekends as indicated by the 1995 American Travel Survey (ATS). The 2010 tourist data from Shreveport and Monroe was adjusted to represent average non-summer weekday travel that is greater than 150 miles. The adjustment was based on the 1995 ATS and the 2001 National Household Travel Study (NHTS). Since there was no data readily available for Ruston, trips for Ruston were determined from trip rates estimated in the 1995 ATS. Since Vicksburg has a similar casino based tourist industry to Shreveport's, Vicksburg visitors in 2010 were estimated based on casino admission information and the percentage of long distance casino visitors that were indicated by the Shreveport visitor data.

The tourist trips for the forecast year of 2035 were calculated using the estimated business long distance trip rates from the 1995 ATS to both the base year and forecast year demographics. The resulting estimates then enabled Alliance to calculate the average annual growth rate, which was roughly 1% per year for the four areas. The growth rate was applied to the 2010 Special Generator trips to obtain the future year long distance tourist trips. The final adjusted tourist trips are shown in the **Table 3 and Table 4** below.

Table 3: 2010 Base Year Long Distance Infrequent Non-Work Related Trips (Typical Weekday)

Region	Existing Modeled Trips	Tourist Trips from Observed Data	Trips Added to Model as a Special Generator
Shreveport-Bossier City	1,404	2,914	1,510
Ruston	86	479	394
Monroe	482	635	152
Vicksburg	373	725	352
Total	**2,345**	**4,753**	**2,408**

Table 4: 2035 Forecast Year Long Distance Infrequent Non-Work Related Trips (Typical Weekday)

Region	Existing Modeled Trips	Tourist Trips from Observed Data	Trips Added to Model as a Special Generator
Shreveport-Bossier City	1,800	3,737	1,937
Ruston	110	615	505
Monroe	619	814	195
Vicksburg	479	930	451
Total	**3,007**	**6,095**	**3,088**

Rail Ridership

Alliance produced ridership results for two scenarios:

1. Corridor passenger rail service between Shreveport, LA and Vicksburg, MS
2. The same passenger rail service extended west beyond Shreveport to Dallas/Fort Worth following the existing Amtrak route via Marshall, TX.

This section presents ridership forecasts for the two scenarios.

There are assumptions in the SAM-V2.5 modeling process that need to be understood in order to interpret and make use of the ridership forecast:

- Although the proposed passenger rail has schedule and speed characteristics similar to existing Amtrak service, with proposed infrastructure improvements it is anticipated that the service will be considerably faster with an average speed, of approximately 66 mph vs. the typically 40-50 mph associated with current Amtrak long distance trains. The corridor service will also be substantially more reliable with better on-time performance than Amtrak long distance trains because of the shorter distance traveled and infrastructure improvements designed to reduce freight interference. Additionally, the proposed passenger rail service is assumed to provide a higher comfort level and more amenities, such as wi-fi access.
- Because specific information on tourist travel to individual cities in Louisiana was limited to Shreveport and Monroe, estimations of tourist trips to other cities along the rail line in Louisiana were based on published national and regional data for tourist markets of similar scale.
- The fare for the rail service is based on distance at $0.18 per mile, without a minimum fare defined.

Passenger Rail Service between Shreveport, LA and Vicksburg, MS

The initial model scenario developed a ridership forecast for a “stand-alone” service with endpoints at Shreveport, LA and Vicksburg, MS. The forecast represents a scenario where all potential trips are accounted for, regardless of trip length. Typically, intercity rail service is meant to serve travelers who are taking trips that are greater than 50-75 miles. Short, commuter type trips can be detrimental to the viability of intercity service. Many times it is in the best interest of an intercity passenger services to exclude the opportunity for riders to travel short distances along the corridor to make room for riders that are willing to pay for longer distance travel.

However, since the entire Shreveport-Vicksburg corridor is 167 miles long, it would be beneficial for this “stand-alone” service to attract riders with shorter trip lengths. Greater benefit is gained by providing service to all potential riders when compared to excluding short trips to leave space for the few travelers that intend to travel longer distances.

The SAM-V2.5 forecasted that the total 2035 typical weekday (Monday to Thursday) ridership for the passenger rail service between Shreveport and Vicksburg would be 270 riders per day. The number of riders per day would decrease by over 50 percent if shorter trips were excluded from the model.

Figure 3 shows the 2035 weekday daily ridership on each segment of the Shreveport-Vicksburg passenger rail route, along with the weekday boardings (on) and alightings (off) at each station.

Figure 3: 2035 Typical Weekday Daily Ridership Shreveport to Vicksburg

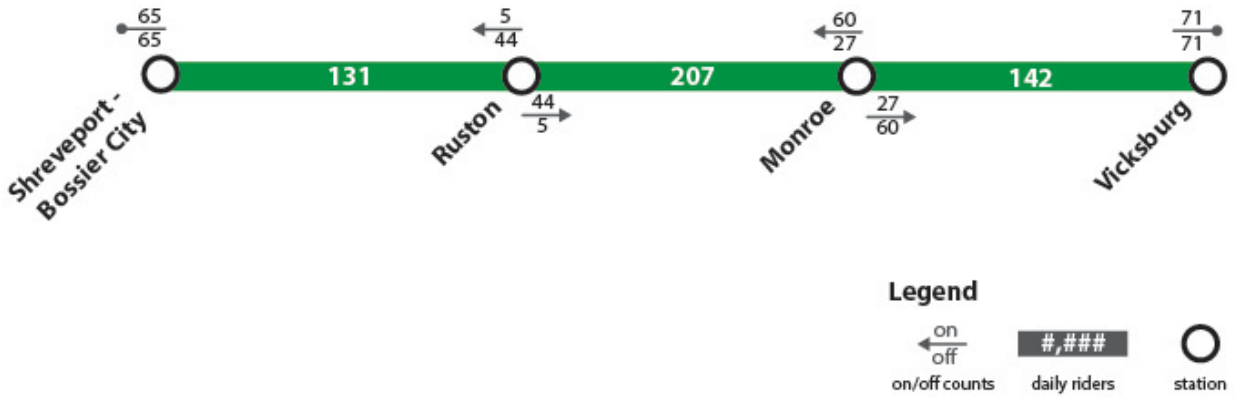


Table 5 depicts directional 2035 station-to-station weekday daily ridership and total boardings at each station.

Table 5: 2035 Weekday Station-to-Station Daily Ridership Shreveport to Vicksburg

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	5	21	39	65
Ruston	5	-	38	5	48
Monroe	21	38	-	27	86
Vicksburg	39	5	27	-	71
Total	65	48	86	71	270

A factor of 300, based on the American Transportation Survey (ATS), was applied to the weekday daily ridership to estimate the Annual ridership, as shown in **Table 6**. The NLCOG passenger rail total annual ridership was 81,500 without connection to existing Amtrak service.

Table 6: 2035 Annual Station-to-Station Ridership Shreveport to Vicksburg

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	1,601	6,409	11,609	19,620
Ruston	1,601	-	11,527	1,548	14,677
Monroe	6,409	11,527	-	8,065	26,002
Vicksburg	11,609	1,548	8,065	-	21,223
Total	19,620	14,677	26,002	21,223	81,521

Table 7 presents the fare price between stations with which 2035 annual revenue was calculated IN 2014 dollars, as shown in **Table 8.** The 2035 total annual revenue for the passenger rail service without a DFW connection is $1,353,000.

Table 7: Fare between Stations (in 2014 Dollars)

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg
Shreveport-Bossier City	-	12	18	30
Ruston	12	-	6	18
Monroe	18	6	-	12
Vicksburg	30	18	12	-

Table 8: 2035 Annual Revenue Shreveport to Vicksburg (2014 Dollars)

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	19,214	115,365	348,282	482,861
Ruston	19,214	-	69,165	27,872	116,250
Monroe	115,365	69,165	-	96,780	281,310
Vicksburg	348,282	27,872	96,780	-	472,934
Total	482,861	116,250	281,310	472,934	1,353,355

The station to station route mileage and 2035 annual operated passenger miles are shown in **Table 9** and **Table 10.**

Table 9: Station-to-Station Route Mileage

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	65	99	168	332
Ruston	65	-	34	103	202
Monroe	99	34	-	68	202
Vicksburg	168	103	68	-	339
Total	332	202	202	339	1,074

Table 10: 2035 Annual Operated Passenger Miles Shreveport to Vicksburg

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	103,994	636,110	1,945,388	2,685,492
Ruston	103,994	-	395,393	158,901	658,288
Monroe	636,110	395,393	-	550,999	1,582,501
Vicksburg	1,945,388	158,901	550,999	-	2,655,288
Total	2,685,492	658,288	1,582,501	2,655,288	7,581,569

Ridership between Shreveport and Vicksburg with Service Extended to Dallas/Fort Worth

The second model scenario developed a ridership forecast based on extending the Shreveport to Vicksburg Service west to Dallas/Fort Worth.[2] The forecast was developed using the same operational characteristics as the initial model scenario. However, short trips were removed from this forecast since the model analyzed ridership based on an assumed intercity travel market and large numbers of intra-urban trips would otherwise be included from the Dallas/Fort Worth metropolitan area. This intercity corridor service is not expected to be practical for daily commuting trips.

The SAM-V2.5 forecasted that the total 2035 typical weekday ridership for the passenger rail service with a future connection to DFW would be 600 riders per day.

Figure 4 depicts the 2035 weekday daily ridership on each segment of the Shreveport-Vicksburg passenger rail route, along with the weekday boardings (on) and alightings (off) at each station. It should be noted that the boardings and alightings include riders traveling beyond Shreveport to the DFW Area and beyond via extended passenger service.

Figure 4: 2035 Typical Weekday Daily Ridership Shreveport to Vicksburg with DFW Extension

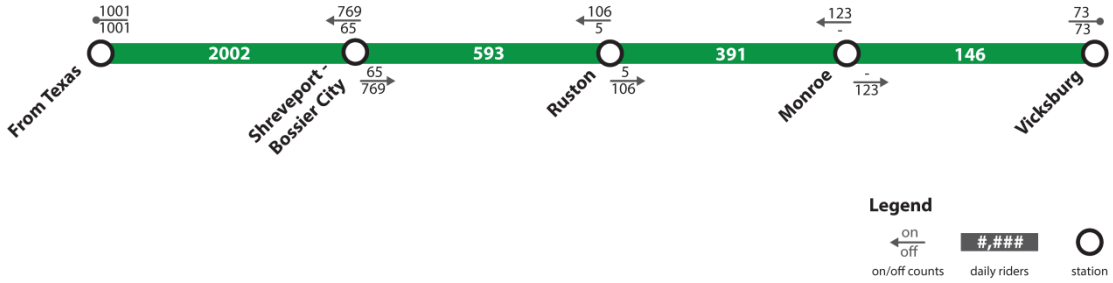


Table 11 depicts directional 2035 station-to-station weekday daily ridership and total boardings at each station.

Table 11: 2035 Weekday Station-to-Station Daily Ridership Shreveport to Vicksburg with DFW Extension

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	–	106	123	68	**297**
Ruston	106	–	–	5	**111**
Monroe	123	–	–	–	**123**
Vicksburg	68	5	–	–	**73**
Total	**297**	**111**	**123**	**73**	**603**

Note: For simplicity, total boardings and alightings reported at Shreveport-Bossier City include travelers from Texas traveling to and from points east of Shreveport-Bossier City.

[2] *Assumed additional intermediate stops included: Marshall, Longview, Mineola, Wills Point, Forney, and Centreport Texas. This is consistent with those used in a recent Amtrak Study for the Texas Department of Transportation: "Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA" (November 7, 2013).*

A factor of 300, based on the American Transportation Survey (ATS), was applied to the weekday daily ridership to estimate the Annual ridership, as shown in **Table 12**. The passenger rail service total annual ridership with a connection to existing Amtrak service is 181,000.

Table 12: 2035 Annual Station-to-Station Ridership Shreveport to Vicksburg with DFW Extension

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	31,844	36,761	20,372	88,977
Ruston	31,844	-	-	1,520	33,365
Monroe	36,761	-	-	-	36,761
Vicksburg	20,372	1,520	-	-	21,893
Total	88,977	33,365	36,761	21,893	180,995

Note: For simplicity, total boardings and alightings reported at Shreveport-Bossier City include travelers from Texas traveling to and from points east of Shreveport-Bossier City.

Based on the fare price between stations, as shown in **Table 7**, the 2035 annual revenue was calculated in 2014 dollars. The annual revenue is presented in **Table 13.** The 2035 total annual revenue for the passenger rail service with a connection to existing Amtrak service is $3,365,000.

Table 13: 2035 Annual Revenue Shreveport to Vicksburg with DFW Extension (2014 Dollars)

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	382,129	661,693	611,168	1,654,990
Ruston	382,129	-	-	27,369	409,498
Monroe	661,693	-	-	-	661,693
Vicksburg	611,168	27,369	-	-	638,536
Total	1,654,990	409,498	661,693	638,536	3,364,717

Based on the station to station route mileage, as shown in **Table 9**, the 2035 annual operated passenger miles are also calculation and shown in **Table 14.**

Table 14: 2035 Annual Operated Passenger Miles Shreveport to Vicksburg with DFW Extension

Region	Shreveport-Bossier City	Ruston	Monroe	Vicksburg	Total
Shreveport-Bossier City	-	2,068,276	3,648,502	3,413,778	9,130,556
Ruston	2,068,276	-	-	156,031	2,224,307
Monroe	3,648,502	-	-	-	3,648,502
Vicksburg	3,413,778	156,031	-	-	3,569,809
Total	9,130,556	2,224,307	3,648,502	3,569,809	18,573,173

Works Cited

Amtrak Study for the Texas Department of Transportation November 7, 2013. *Proposed State-Supported Service from Fort Worth, TX to Shreveport, LA*

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