



Louisiana State Rail Plan

June 2015

prepared for



prepared by



in collaboration with:

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Louisiana State Rail Plan

Prepared for:
Louisiana Department of Transportation and Development

Prepared by:
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In association with
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June 2015

STATEMENT OF ADOPTION

Louisiana Revised Statutes 36:501 through 36:509 grants broad authority to the Secretary of the Department of Transportation and Development in establishing transportation policy for the State of Louisiana. Under this authority, I hereby adopt the Louisiana Rail Plan as the official state rail plan for the State of Louisiana on the 21st day of July 2015.

x



Sherri H. LeBas, P.E.

Secretary

Department of Transportation and Development



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

June 26, 2015

J. Dean Goodell
Louisiana DOTD
Room S-515
1201 Capitol Access Road
Baton Rouge, LA 70802

Dear Dean,

FRA has completed its review of the Louisiana State Rail Plan (SRP) from August 2014. FRA's review of the SRP found that it contained the minimum required elements in accordance with Section 303 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). This letter serves as notice that FRA formally **accepts** the SRP and the projects listed in the SRP will be eligible for capital grants under Sections 301, 302, and 501 of PRIIA, relating to intercity passenger rail, congestion, and high speed rail respectively. FRA acceptance of the 2014 Louisiana State Rail Plan is valid until June 26th, 2020.

While FRA finds that the SRP meets the minimum requirements, the following issues emerged during the review of the SRP. FRA recommends addressing these issues in future updates to the SRP to facilitate a robust planning process for rail in the State of Louisiana:

- Provide the total funding amount Louisiana has allocated to all rail related projects within the last five years.
- 2.2.3, Objectives for passenger rail service do not have to be tied to specific frequency and capacity projects, general objectives can be helpful in shaping the level of desired service in the State. The SRP discusses several passenger service corridor studies, developing service objectives can be useful in guiding the advancement and implementation of those services.
- 5.5, Provide more information on the program effects of the short and long term rail projects identified in the Rail and Service Investment Program. Consider the economic and environmental impacts- including energy consumption and greenhouse gas emissions, and impacts to the capacity of Louisiana's transportation system- including highways, airports, and transit services.
- 5.6 & 5.7, Provide more information on 4-and-20 year financing plans for projects identified in the Rail Service and Investment Plan.

FRA looks forward to partnering with the State of Louisiana to continue building a rail network for America that is safer, more reliable, and more efficient.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Catherine Dobbs', with a stylized, cursive script.

Catherine Dobbs
Central Regional Manager

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Executive Summary

Introduction

The Louisiana Department of Transportation and Development (DOTD) has developed this State Rail Plan for the purpose of guiding the state's rail freight and passenger transportation planning activities and project development plans over the next 20 years.

This plan describes the state's existing rail network and rail-related economic and socio-economic impacts. It also describes the State Rail Plan process, Louisiana's rail vision and supporting service objectives, proposed publicly sponsored short- and long-range capital improvements, studies, and recommended next steps to address the issues identified.

This Plan is intended to meet the requirements established by the federal Passenger Rail Investment and Improvement Act of 2008 to qualify for future federal funding for rail projects.

Louisiana's Rail System

Louisiana's rail system plays an essential role in linking Louisiana shippers with markets throughout North America. Chief among high volume rail shippers in the state is the petrochemical industry. Historically, New Orleans has been a major gateway for the interchange of rail traffic between eastern and western railroads. In recent times, railroads have brought increasing volumes of oil tapped in the upper Midwest to Mississippi River ports for export. Although Amtrak's intercity passenger services in the state are limited, Amtrak provides essential transportation services for Louisianans.

A brief description of Louisiana's rail network is provided below.

Freight Rail System

The Louisiana freight rail system is operated by six large Class I railroads and 14 smaller local, switching, and terminal railroads. The system consists of 2,730 route miles, excluding leases and trackage rights.

The majority of rail mileage in the state is owned by four Class I carriers: Union Pacific Railroad (UP), Canadian National Railway (CN), BNSF Railway (BNSF), and the Kansas City Southern Railway (KCS). These railroads own a total of 2,233 route miles. The remaining Class I railroads, the Norfolk Southern Railway (NS) and CSX Transportation (CSXT), own an additional 107 miles on two routes between New Orleans and the Mississippi state line. The 14 short line railroads operating in the state own the remaining 390 route miles in Louisiana.

Louisiana's freight railroads carried over 120 million tons of freight or almost 1.9 million rail cars of various commodities which originated or terminated within the state in 2009. The leading commodities, comprising almost 75% of rail borne tons, are: *Chemicals and Allied Products* (36.7 million tons); *Coal* (22.4 million tons); *Farm Products* (12.0 million tons); *Nonmetallic Minerals* (10.2 million tons); and *Food or Kindred Products* (7.5 million tons).

Total rail freight flows in the state are forecast to increase through 2040 at a compound annual growth rate of 1.7%.

Passenger Rail Service

The state is served by three long-distance Amtrak trains, centered on New Orleans. There currently is no commuter or intercity corridor service provided in the state, either by Amtrak or by other operators. There is one small tourist railroad operated by the Southern Forest Heritage Museum. Amtrak operates entirely over the trackage of Class I freight railroads, except for a small portion over the New Orleans Public Belt Railroad and trackage at the New Orleans Union Passenger Terminal. While service was expanded to Mobile and Orlando in the 1980s and 1990s, Amtrak's frequency of train service through Louisiana is now what it was in 1971. While the limited availability of passenger cars has constrained traffic growth, revenue management, targeted marketing and high gas prices have driven ridership and ticket revenue to record levels.

The three long-distance trains are: the *City of New Orleans*, operating between Chicago and New Orleans; the *Sunset Limited*, operating between Los Angeles and New Orleans; and the *Crescent*, operating between New York and New Orleans. A total of 258,000 passengers boarded and alighted at the seven Louisiana Amtrak stations in 2012. Of these, 223,000 boardings and alightings were at the New Orleans Union Passenger Terminal.

Boarding and alightings at Amtrak stations in Louisiana are projected to 329,000 in 2032, a 27.5% increase over the 20-year period. The growth equates to a 1.2% annual increase for the period.

Rail Impacts

Rail service is essential to Louisiana's economy. While the basic provision of rail service generates a modest 2,930 direct jobs (8,810 total jobs including multiplier effects), rail freight users in the state generate a much greater 189,650 direct jobs. Combining the total rail freight and visitor (passenger visiting the state) users job impacts of 486,090 (inclusive of the 295,610 multiplier job impacts) with rail transport-services jobs yields a total rail-related employment impact of 494,900 jobs, with \$25.2 billion paid in income and total economic output of \$134.6 billion.

In addition to the direct employment benefits, the availability of rail transport provides cost and logistical advantages to Louisiana firms that enable the state to compete effectively in the global marketplace. The presence of rail freight is especially important in rural areas where manufacturing, agriculture, and local industries rely on freight shipping.

Railroads are also up to four times more fuel efficient than trucks on the basis of ton-miles transported, and as greenhouse gas emissions are directly related to fuel consumption, every ton-mile of freight moved by rail instead of truck reduces greenhouse gases by up to 75%. The diversion of freight traffic to rail also increases the safety of state's highway system.

Amtrak intercity passenger rail service connects major urban areas, which is important given the limited air service in the state. Passenger train travelers generate income not only for the rail operations, but also for restaurants, hotels, and other visitor service establishments. Furthermore, passenger stations have the potential to increase economic development around the station areas.

Rail Plan Development Process

This State Rail Plan was developed under the authority and guidance of the Rail Section of the DOTD's Intermodal Division. DOTD is the designated rail authority in Louisiana. The Rail Section is responsible for rail planning in the state and also assists freight railroads in applying for federal funds for

improvement projects. The Intermodal Division's Rail Section coordinated closely with other DOTD divisions responsible for various rail-related functions, including highway-rail at-grade crossing improvements and grade separations, in the development of the Plan.

To provide a medium for public review, the Draft State Rail Plan was posted to the DOTD website (www.dotd.louisiana.gov/) prior to finalization of the Plan. The State Rail Plan effort was part of the larger Louisiana Statewide Transportation Plan and was integrated into that plan.

All railroads operating in the state were contacted to solicit information as to their operations, projects or other needs, and their opinions as to what the public sector could do to assist or improve the efficiency and expansion of rail in the state. Similar interviews were conducted for shippers located on both the Class I and short line railroad network within the state.

Three public outreach meetings were held at New Orleans, Baton Rouge and Shreveport to educate stakeholders and the general public regarding the State Rail Plan process, obtain input for developing a rail vision, and to provide a forum for discussion of specific rail issues in the state. A total of 85 people attended the October 2012 public meetings. Participants included representatives from short line and terminal railroads, Metropolitan Planning Organizations (MPOs), ports, parishes, the Sierra Club, transportation planning and engineering companies, as well as students and private citizens.

Also, two meetings were held in March and October 2013 with the DOTD's Freight Rail Advisory Committee, comprised of public and private rail stakeholders. These included representatives from the freight railroads, the Louisiana Railroad Association, and the Regional Planning Commission of New Orleans, among others. Existing conditions of the Louisiana rail system and current issues in rail transportation in the state were discussed at the first meeting, and a program of project improvements for the State Rail Plan was discussed at the second.

The Draft State Rail Plan was also provided to the state rail planning contacts of neighboring state departments of transportation to ensure coordination with neighboring states with respect to rail facilities, services, and future plans which cross state boundaries.

Key Stakeholder Input on Rail Issues, Challenges and Opportunities

Various themes were identified from the comments voiced by public outreach meeting attendees and noted in the surveys and comment cards. Among these are:

- Interest in Baton Rouge – New Orleans intercity rail service, in Shreveport/Bossier City – Dallas/Fort Worth intercity service; and in restoration of Gulf Coast intercity service.
- Interest in freight rail projects, particularly for short lines, connections to ports, and the New Orleans Rail Gateway project.
- Interest in state support of freight and passenger rail projects and in a dedicated funding source for rail projects.
- Concern regarding grade crossing safety.
- Interest in public-private partnerships as another means of helping to finance projects.

- Interest in rails-to-trails and rails-with-trails programs.
- Attention to rail impacts to communities from rail improvements.

Class I railroads related their investment plans in the state, which total to \$310 million through 2014. These investments will be paid for through internally generated funds. However, short line railroads noted a need for state assistance, especially to help the railroads upgrade their lines for handling 286,000-pound loaded car weights.

For short line shippers, line improvements such as upgrades for 286,000-pounded loaded car weights are a distinct need as well. To this end, these shippers felt the state should have a rail retention and infrastructure program for helping to realize these improvements. Furthermore, some felt that the state could also have a role interceding with their Class I connections problems and helping to mediate other disputes.

Freight Rail Advisory Council members had various recommendations, including designation of a Rail Program at DOTD and staffing it appropriately to help all the state's railroads secure federal grants and loans. It also called for providing state funding for rail infrastructure improvements. Some Class I railroad shippers complained of excessively high rates charged by their serving railroads.

Passenger rail stakeholders contacted included Amtrak, the intercity rail service provider; the Southern Rail Commission, of which Louisiana is a member and which has studied new and improved passenger rail services between Atlanta, New Orleans and Houston; and the National Association of Rail Passengers (NARP), a non-profit passenger rail advocacy group. Their comments revealed interests in rail passenger initiatives, including Baton Rouge – New Orleans intercity rail service, restoration of Gulf Coast Amtrak service, and new higher speed routes, running west to Houston, northeast to Birmingham and Atlanta, and between Shreveport/Bossier City and Dallas/Fort Worth.

Overall, stakeholders and the general public expressed understanding and appreciation of the value and potential of the state's passenger and freight rail operations.

Louisiana's Rail Vision and Service Objectives

Based on the comments obtained through the outreach effort, DOTD has developed the following vision statement for rail transportation in the state.

The future Louisiana rail system will provide safe, reliable mobility for people and goods. In addition, it will contribute to a more balanced transportation system, economic growth, a better environment and energy conservation. The state's rail infrastructure and levels of service will expand to provide increased transportation efficiency, cost effectiveness, accessibility, capacity, and intermodal connectivity to meet market demands through a freight and passenger rail investment plan which includes public-private partnerships. To further this vision, the state will take a leadership role in planning rail service improvements.

Rail service objectives aligned with the rail vision were developed based on the rail-related benefits, issues and obstacles that had been identified. These objectives are as follows:

Freight Rail Objectives

- Improve the interchange of Class I rail traffic in New Orleans.
- Increase the number of miles of track capable of 286,000-pound car weights on the state's short line railroads.
- Minimize accidents, injuries, and fatalities at highway-rail grade crossings in Louisiana through crossing closures, safety improvements and grade separations.
- Encourage economic development through investments in the rail system, e.g., improved access to marine and river ports, new intermodal facilities, and new industrial leads and spurs.
- Establish a designated Rail Program empowered to assist in funding rail improvements.
- Leverage public-private partnerships for funding rail improvements.

Passenger Rail Objectives

- Enhance existing services – maintain and improve existing stations.
- Engage the freight railroads in new passenger rail planning initiatives.
- Continue outreach to stakeholders.
- Develop funding strategies for passenger rail initiatives.
- Encourage multimodal integration.

Proposed Capital Investment Programs and Future Studies

Based on identified needs and available funding sources, short- and long-range proposed rail investment programs were developed. A summary tally of the projects, prioritized as short-range and long-range projects, appears in **Table ES-1**. The short-range projects are limited to those for which funding is available or expected to be available during the four-year short-range period. Long-range projects (5-20 years) were proposed during the outreach process or from other sources and will be further evaluated as to their feasibility, their merit on the basis of public benefits versus costs, and available public funding.

Additional areas of study were proposed during the outreach process. These study areas include:

- Intercity service between Shreveport and Meridian, which could extend Dallas/Fort Worth – Shreveport/Bossier City intercity service to Atlanta and East Coast cities; and,
- Intercity service on the KCS/UP line between Shreveport and Baton Rouge linked with new Baton Rouge – New Orleans intercity rail service.

Also, transit connectivity with new intercity rail services should be explored as a means to enhance access to the services and reduce dependence on auto travel to and from stations. This could include new Thruway bus service linking Shreveport with the *Texas Eagle* in Texarkana, TX.

Table ES-1: Louisiana Rail Program of Projects

Short-range Needs in Years 1-4	Cost in Millions
New Orleans Rail Gateway	\$49.7
286K upgrade for short lines	\$41.0
NOGC rail relocation	\$40.5
Station improvements	\$9.5
Crossing improvements	\$11.2
Grade separations	\$37.2
Shreveport - Dallas intercity rail*	\$30.0
Baton Rouge - New Orleans intercity rail*	\$75.0
Total	\$294.1
Long-range Needs in Years 5-20	Cost
New Orleans Rail Gateway	\$447.1
286K upgrade for short lines	\$164.0
NOGC rail relocation	\$229.5
Grade separations	\$72.7
Other short line needs	\$51.5
Shreveport - Dallas intercity rail*	\$270.0
Baton Rouge - New Orleans intercity rail*	\$447.0
New Orleans – Mobile intercity rail*	\$5.0
Total	\$1,686.8
Rail Program Total	\$1,980.9

Note: *Excludes annual operating subsidy.

State Rail Plan Recommendations and Next Steps

Based on the input received from stakeholders and the public during the preparation of the Louisiana State Rail Plan, DOTD will work toward the following initiatives:

- Establish a Rail Program, with the primary mission of helping the state's railroads, and particularly short lines, secure federal funding for improvements, such as ensuring 286,000-pound carload capacity on lines where shippers demand it.
- Support the establishment of a state-funded Rail Retention and Infrastructure Program for helping to realize these improvements and maintaining lines in a state of good repair. This program could have a potential budget in a range of \$10 million to \$25 million per year.
- Continue to support the New Orleans Rail Gateway project and port-access improvements such as the Gulf Coast Rail Relocation project.
- Continue to promote and enhance rail safety at crossings.
- Continue to work with neighboring states on rail initiatives which benefit the region; continued participation in the Southern Rail Commission on both passenger and freight initiatives.
- Support the improvement of existing Amtrak services and Amtrak stations.

- Support the development of new intercity rail initiatives that enhance mobility options for Louisianans.

Summary

Louisiana has undertaken a comprehensive study of its passenger and freight rail network and has identified key issues and opportunities through a wide-ranging rail stakeholder and public outreach process. This State Rail Plan serves to document this information and set a direction for rail planning and project development into the future while meeting the federal requirements to qualify the state for any future federal rail funding.

The development of this Plan would not have been possible without the participation of many rail stakeholders and others, and the Louisiana Department of Transportation and Development expresses its appreciation to those individuals and parties who participated in this effort.

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Chapter 1.

The Role of Rail in Louisiana's Statewide Transportation System

1.1 Introduction

In 2008, the U.S. Congress passed the Passenger Rail Investment and Improvement Act (PRIIA) with the expressed intent of improving passenger rail service in the United States. One of the features of the legislation is the requirement that any state seeking federal assistance for either passenger or freight improvements have an updated State Rail Plan. The legislation further stipulated the minimum content of the rail plans, which was codified in Public Law 110-432.

This document was developed by the Louisiana Department of Transportation and Development (DOTD). It meets the requirements set forth in the legislation and public law, and is intended to serve as Louisiana's State Rail Plan. In addition to meeting federal requirements, this Plan is intended to formulate a state vision for rail in the future as well as goals and objectives to achieve that vision. For this purpose, the plan was developed with extensive public participation and involvement by the state's railroads and rail users, the public and other stakeholders. The format and content of this Plan follow those set forth in the State Rail Plan Guidance provided by the Federal Railroad Administration in September, 2013.

This chapter serves to illustrate the current and proposed future role of rail in Louisiana's multimodal transportation system and describe how the state is organized to provide political, legal, and financial support to rail development.

1.2 The State's Goals for the Statewide Multimodal Transportation System

The Louisiana State Rail Plan is part of DOTD's ongoing effort to update its Statewide Transportation Plan. Appearing below are the goals of the Statewide Transportation Plan.

- **Infrastructure Preservation and Maintenance** – Preserve Louisiana's multimodal infrastructure in a state of good repair through timely maintenance of existing infrastructure.
- **Safety** – Provide safe and secure travel conditions across all transportation modes through physical infrastructure improvements, operational controls, programs, and public education and awareness
- **Economic Competitiveness** – Provide a transportation system that fosters diverse economic and job growth, international and domestic commerce, and tourism.
- **Community Development and Enhancement** – Provide support for community transportation planning, infrastructure and services.
- **Environmental Stewardship** – Ensure transportation policies and investments are sensitive to Louisiana's environment, history, and culture.

As explained in the following chapters, the Louisiana State Rail Plan supports each of these multimodal transportation goals.

1.3 Rail Transportation's Role with the State's Transportation System

Passenger and freight rail play an important role including the provision of transportation choices, enhanced economic competitiveness, community support, and improved access for communities and neighborhoods. Passenger rail services can strengthen the intermodal transportation system, creating new options for users as they combine different transportation modes to complete a trip. Attractive multimodal trip options require solid and convenient connections between the different modes of travel.

Currently, passenger and freight rail transport face shortcomings when competing with auto, air, and truck travel. These shortcomings are often due to rail being less convenient and less connected than other modes of travel. However, increased demand and continued reliance on auto and air travel for passenger trips and on trucks for freight movement can lead to negative impacts and degradation in livability, including increased congestion, additional safety concerns, and the depletion of natural resources.

1.4 Institutional Structure of Louisiana's State Rail Program

DOTD is Louisiana's State Rail Transportation Authority (SRTAA) and State Rail Plan Approval Authority (SRPAA). DOTD is responsible for rail planning in the state, including development of the State Rail Plan. Rail-related responsibilities are located primarily within the DOTD central office, but some rail-related activities are also located within the Department's District Offices. A description of these organizations and the rail functions carried out within them follow.

1.4.1 Marine and Rail Section

The mission of the Marine and Rail Section is to improve the marine and rail infrastructure for passenger and freight movement to nurture economic development and enhance quality of life through the development of an efficient, safe, and seamless internal transportation system.

The Section is organized under the Intermodal Division, which is part of the Office of Multimodal Planning. The Intermodal Division also includes Aviation, Public Transportation and Port Program Sections.

Current emphasis areas for the Section include the development of the Statewide Rail System Plan, the New Orleans Rail Gateway Rehabilitation Project and the New Orleans and Gulf Coast Railway's line relocation around Gretna. The section also evaluates and allocates available funding to prospective rail projects. The section represents the DOTD on regional and national rail associations such as the American Association of State Highway and Transportation Officials' Standing Committee on Rail Transportation, the Southern Rail Commission, and the States for Passenger Rail Coalition.

1.4.2 Railroad Safety Unit

Rail safety-related activities, which include all grade crossing and other highway-related activities involving railroads, are conducted within the Rail Safety Unit. This unit is organized under the Project Development Division which is part of the Office of Engineering.

The Rail Safety Unit oversees rail/highway projects which are implemented through the federal Highway Safety Improvement Program. Rail Safety Unit staff conduct diagnostic reviews of proposed crossing improvement projects and crossing consolidations/closures.

The unit is also responsible for maintaining an inventory of all grade crossings in the state. This inventory includes all operating characteristics of the roadway and rail line, and the type of warning equipment. It supports Louisiana's Operation Life Saver program and has implemented a grade separation program.

1.4.3 District Offices

DOTD District Offices are located in Alexandria, Baton Rouge, Chase, Hammond, Lafayette, Lake Charles, Monroe, New Orleans, and Shreveport. District Railroad Coordinators primarily monitor grade crossing conditions and project construction. They also participate on the crossing diagnostic teams that evaluate grade crossing projects.

1.4.4 Additional Public Sector Rail Planning in Louisiana

While the DOTD has primary responsibility for rail planning, policy and project development, a number of additional state and local agencies in Louisiana also have a vested interest in the viability, efficiency, and safety of the state rail system.

1.4.4.1 Louisiana State Agencies

A number of state agencies are dependent on the transportation system, including the rail system, to carry out their responsibilities and objectives. Those state agencies with vested interests in the effectiveness of the rail network include:

Louisiana Department of Economic Development

The Louisiana Department of Economic Development (LED) is the state's lead economic development agency. The Department oversees a variety of programs and services that create jobs, attract new investment, encourage community development and promote Louisiana.

The Department's Office of Business Development implements strategies that will contribute to improving the economy by improving capacity through education and training, infrastructure, financial and social capital and collaboration. The Department has participated with railroad partners to establish new facilities, such as an export grain terminal, and provided grants through the state's Rapid Response fund to make infrastructure improvements, such as expanding rail spurs, to secure the location of industries within the state.

The Department provides funding to public agencies for rail infrastructure improvements based on the public benefits expected to be derived. For example, LED provided a capital outlay to the Port of Lake Charles in 2010-11 for a new connection to the Union Pacific Railroad. The connection gave some port tenants, heretofore unserved by rail, direct access to the national rail system. The investment was justified on the basis of the new jobs and economic development that this new connection would make possible.

Louisiana Office of Homeland Security/State Police

With its numerous ports, petro-chemical and agricultural industry and with the sheer volume of materials imported and exported through its ports, river infrastructure, railroads and interstate

highways, Louisiana faces a significant challenge in controlling and monitoring activities with regard to terrorism and emergency management.

The Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) serves as the state's single point-of-contact for Homeland Security. The agency maintains a Critical Infrastructure Protection Plan to augment current security and assist facilities deemed critical to the nation and state in reducing their vulnerabilities. Fundamental to the plan is a critical infrastructure list for the state.

The Louisiana State Police's Emergency Services Division of the Transportation and Environmental Safety Section (TESS) provides Level A response capabilities. The State Police's HAZMAT Section directs trained State Police personnel who conduct inspections of all transport modes.

Louisiana Department of Environmental Quality

This agency manages all of the state's environmental concerns, including response to citizens' complaints and environmental emergencies. The agency also works with the U.S. Environmental Protection Agency to allocate federal funds for emission reduction and other environmental purposes. With respect to rail, the agency has administered federal stimulus grants to railroads for the installation of idler reduction equipment on locomotives, thus reducing rail emissions in urbanized areas.

Louisiana Public Service Commission

RS 45§561 authorizes the Public Service Commission to participate in the Federal Railroad State Safety Participation Program (49 CFR Part 212). The PSC retains jurisdiction over the closure of private railroad crossings. The PSC does not have the authority, however, to require a railroad facility owner or operator to alter or cease rail operations.

1.4.4.2 Local Government Agencies with Rail Interests

Rail operations are also a significant and increasingly important issue at the local level of government. In many communities the public's interface with the rail mode is at grade crossings, where safety and highway congestion are often the key concern. In addition, as local agencies have recognized the linkage between transportation and economic development, the importance of rail access to preserve existing industries and to attract new industries to potential economic development sites has led to increased emphasis on the rail mode.

At the local level, the agencies most involved in the rail mode are Metropolitan Planning Organizations (MPOs) and local economic industrial agencies. These are addressed below.

Metropolitan Planning Organizations

MPOs are federally mandated and federally funded transportation policy-making organizations comprised of local government and transportation officials. The formation of an MPO is required for any urbanized area with a population greater than 50,000.

An MPO is required to maintain a Long-range Transportation Plan (LRTP) as well as a Transportation Improvement Plan (TIP), which is a multi-year program of transportation projects to be funded with federal and other transportation funding sources. Federally funded projects within each MPO's geographic area, such as grade crossing improvement projects, must be cited in the TIPs.

Planning activities conducted by some MPOs have also evolved to address the movement of freight and passengers. These include consideration of multimodal solutions, improved intermodal connections, and more specific rail and rail-related project solutions.

There are eight MPOs that have jurisdiction over the heavily populated areas of the Louisiana transportation system. These MPOs, and their respective jurisdictional areas, are described below.

- ***Capital Region Planning Commission*** – Encompasses the Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, Tangipahoa, Washington, West Baton Rouge, and West Feliciana parishes.
- ***Imperial Calcasieu Regional Planning and Development Commission*** – Serves the parishes of Calcasieu, Beauregard, Cameron, Jefferson Davis, and Allen.
- ***Lafayette Consolidated Government*** – Serves the Lafayette urbanized area.
- ***North Delta Regional Planning and Development District*** – Serves the Monroe urbanized area.
- ***Northwest Louisiana Council of Governments*** – Serves as the MPO for Caddo and Bossier Parishes.
- ***Rapides Area Planning Commission*** – Houses the MPO for the urbanized area of Rapides Parish.
- ***Regional Planning Commission*** – Serves as the MPO for three urbanized areas.
 - The Greater New Orleans Transportation Management area on the south shore of Lake Pontchartrain encompassing Jefferson, Orleans, Plaquemines, St Bernard, St. Charles, and St. John Parishes.
 - The urbanized areas of Covington/Mandeville.
 - Slidell on the north shore of Lake Pontchartrain.
- ***South Central Planning and Development Commission*** – Encompasses Assumption, LaFourche, St. Charles, St. James, St. John the Baptist, and Terrebonne Parishes.

Public Economic Development Agencies

There are a number of local economic development agencies within the state which recruit industries and businesses on the basis of their location, labor force, room for growth, and transportation assets. Rail access to existing industrial parks and other business sites are emphasized as an asset to prospective recruits.

The Louisiana Economic Development Directory lists 31 entities around the state, including economic development agencies, chambers of commerce, development councils, corporations, and associations at the regional, county or city level of government. Many of these agencies offer incentives such as tax exemptions and credits and other means of assistance to attract business interests.

Although these agencies do not generally work directly with freight railroad operators, they do have a vested interest in the level of rail services and rail assistance programs available to supplement their incentives.

1.5 State Authority for Grant, Loan and Other Financing

Louisiana state law provides the Louisiana Secretary of Transportation with the authority to qualify and disburse federal rail funding, and to establish a state program from which it can make rail loans and grants to qualified entities within the state.

Title 48,§388 provides DOTD the powers necessary for the state to qualify for federal rail service assistance pursuant to the provisions of the Railroad Revitalization and Regulatory Reform Act of 1976 or any other applicable federal act as follows:

- Administer and coordinate or modify the state rail plan as required by Federal Public Law 94-210, as amended.
- Provide satisfactory assurances on behalf of the state that such fiscal control and fund accounting procedures will be adopted by the state as may be necessary to assure proper disbursement of an account for federal funds paid to the state.
- Provide financial assistance, within the limits of the funds appropriated for this purpose, for the preservation of operations and maintenance of any railroad within the state as provided for in relevant federal legislation. DOTD may act as the agent in cooperation with any railroad of any local or regional transportation authority, local government units, or any person, and the federal government in any rail freight service assistance program.
- Cooperate with other states in connection with the preservation of any rail freight services within the state. In carrying out the authority conferred by this section, the DOTD may enter into general contractual arrangements with other states.
- Contract with any person firm, corporation, agency or government to provide, maintain or improve rail freight service within this state.
- To promulgate rules and regulations consistent with and for the purpose of adequately implementing this act.

No state funds shall be used for financial assistance to any private or public person or corporation.

Other state laws relevant to rail oversight include: Rail grade crossings (49§382-394); and financing through the Louisiana Economic and Port Development Infrastructure Fund (39§100.36); and for the Public Service Commission to participate in rail safety inspection (45§561).

1.5.1 Louisiana Public Rail Funding Programs

Following the cessation of the federal Local Rail Freight Assistance Program in the 1990s, Louisiana did not establish a state-funded rail assistance program. The state has utilized, however, both federal and state funding programs where rail infrastructure improvements were eligible and appropriate. The following is a short summary of state rail funding resources utilized over the recent past.

Louisiana is in compliance with Title 49 United States Code Section 22102, which pertains to its eligibility to receive federal financial assistance for rail projects. DOTD is the designated rail authority to distribute federal funding for rail projects in the state.

1.5.1.1 DOTD Port Construction and Development Priority Program

The program, created in 1989, was established for the construction, improvement, capital facility rehabilitation and expansion of publicly owned port facilities including intermodal facilities, and maritime-related industrial park infrastructure developments. Projects such as wharves, cargo handling capital equipment, utilities, railroads, primary access roads and buildings which can be shown to be an integral component of any proposed port project are eligible. This program is administered by DOTD's Intermodal Division.

1.5.1.2 DED Rapid Response Program

This fund, administered by the Louisiana Department of Economic Development (LED), has been utilized to secure the infrastructure improvements necessary to locate industries to the state. Recent projects have included the expansion of a rail spur to increase rail shipment capacity and services to a new paper manufacturer.

1.5.1.3 State Budget Appropriations

Specific rail projects are funded from the state's annual capital construction program which provides funding for transportation projects around the state.

1.5.2 Louisiana Rail Funding Proposal

A Rail Infrastructure Improvement Program has been proposed for rail infrastructure improvements, primarily to upgrade short line railroads to the standard 286,000-pound carload capacity or to extend tracks to serve additional industries. The sponsoring entity could be a port or short line railroad (small railroad) and the project must demonstrate a compelling public benefit.

This program would be administered by the Rail Section of the Intermodal Division.

1.6 Summary of Freight and Passenger Rail Services

1.6.1 Freight Services

The rail system in Louisiana comprises 2,730 route miles which are owned by 20 freight railroads. Six of these railroads are categorized as Class I railroads (large railroads) and own a total 2,340 route miles or 85% of the total rail mileage in the state. Short line and terminal railroads own and operate the remaining route miles in the state. Detail on each railroad in terms of lines, route mileage, yards and connecting carriers appears in Chapter 2.

In 2009, these freight railroads carried over 121 million tons of freight or almost 1.9 million rail cars of various commodities which originated or terminated in Louisiana or passed through the state in 2009. *Chemicals and Allied Products* comprised 21% of the total carloads, followed closely by *Nonmetallic Minerals, Farm Products, and Coal*. Detail on origins and destinations of freight rail traffic, along with the tonnage and value of commodities handled by rail, appear in Chapter 2.

One major ongoing freight rail initiative is the implementation of the New Orleans Rail Gateway – a combination of rail and roadway improvements to both improve the interchanges of Class I railroads in New Orleans and eliminate highway-rail at-grade crossings.

Another major initiative is the relocation of the New Orleans and Gulf Coast Railway's line that presently runs through Gretna to ports on the Mississippi River south of New Orleans. The line would be routed around the west side of Gretna, allowing many grade crossings there to be closed.

1.6.2 Passenger Services

Three Amtrak long distance intercity rail passenger routes within the state operate over rail lines owned by freight railroads. The *City of New Orleans* operates between Chicago and New Orleans; the *Crescent* between New York City and New Orleans; and the *Sunset Limited* between Los Angeles and New Orleans. In all, the services had a combined ridership of 258,000 passengers in 2012. Of Louisiana's seven rail stations, New Orleans Union Passenger Terminal was the most utilized rail station in the state, handling 223,000 boardings and alightings. Greater detail on these services and Amtrak stations in Louisiana appear in Chapter 2.

One major passenger initiative is the ongoing effort by the Regional Planning Commission, the MPO for New Orleans, and other local jurisdictions investigating the feasibility of establishing a new intercity rail service between Baton Rouge and New Orleans.

The other major ongoing passenger rail initiative is a feasibility assessment of a new intercity passenger rail service between Shreveport/Bossier City and Dallas/Fort Worth. Current planning includes two efforts: one being conducted by Amtrak and the other by the North East Texas Regional Mobility Authority.

Chapter 2.

Louisiana's Existing Rail System

2.1 Introduction

This chapter provides an overview and inventory of Louisiana's existing rail system as a baseline for planning and decision making. Discussed below are three major aspects of the state's existing freight rail and passenger rail systems: a description of the services as they are today; rail service trends and forecasts; and needs and opportunities.

2.2 Louisiana's Existing Rail System

The Louisiana freight rail system is operated by six large Class I railroads and 14 smaller local, switching, and terminal railroads. The system consists of 2,730 route miles, excluding leases and trackage rights. Mileages of Louisiana's freight railroads appear in **Table 2-1** on the following page. All train operations on lines owned by Class I railroads are controlled by Central Traffic Control (CTC) systems, whereby a dispatcher in a remote location directs train operations by the use of wayside signal control systems.

2.2.1 Existing Rail Line Network

2.2.1.1 Class I Railroads

Each Class I railroad has principal routes through the state that are fed by its own branch lines and connecting carriers. **Figure 2-1** (following Table 2-1) shows all of the routes of the Class I carriers across the state.

BNSF Railway Company

BNSF Railway Company (BNSF), a wholly-owned subsidiary of Berkshire Hathaway, Inc., operates over 32,000 route miles in the U.S. and Canada. It operates over 351 route miles in Louisiana. Two hundred and forty of these, extending from the Texas / Louisiana state line at the Sabine River near Orange, TX, through Lake Charles and Lafayette to Avondale Yard on the west bank of the Mississippi River at New Orleans, are "joint trackage", owned on an equal "50/50" basis with Union Pacific Railroad (UP).

BNSF also has trackage rights on 111 route miles, primarily in northwestern Louisiana and in and around Avondale Yard in New Orleans.

Traffic moving on the east-west joint trackage mainline connects to all of the Class I carriers in New Orleans via the Huey P. Long Bridge and New Orleans Public Belt Railroad (NOPB). Traffic moving into Texas on the western side of the state can connect to all of the 28 states and two provinces in Canada on the BNSF network from Beaumont, TX. BNSF short line connections are listed in **Table 2-2**.

Table 2-1: Louisiana Rail System Mileage

Railroad	Reporting Marks	Route Miles Operated				Owned not Operated
		Owned	Leased	Trackage Rights	Total	
Class I Railroads		2,340*	2	241	2,583*	195
BNSF Railway Company	BNSF	240		111	351	
Canadian National Railway Company	CN	239			239	
CSX Transportation	CSXT	35		8	43	
Kansas City Southern Railway	KCS	673	2	62	737	173
Norfolk Southern Railway	NS	72		4	76	
Union Pacific Railroad	UP	1,321		56	1,377	22
Local, Switching Terminal Railroads		390	208	201	799	
Acadiana Railway	AKDN	68	5	21	94	
Arkansas Louisiana & Mississippi Railroad	ALM	39			39	
Baton Rouge Southern Railroad	BRS		2		2	
Delta Southern Railroad	DSRR	28	15		43	
East Camden & Highland Railroad	EACH	2			2	
Lake Charles Harbor & Terminal District (Port of Lake Charles, Port Rail Link)	LCH	13			13	
Louisiana & Delta Railroad	LDRR	120		178	298	
Louisiana and North West Railroad	LNW	38			38	
Louisiana Southern Railroad	LAS		157		157	
New Orleans and Gulf Coast Railway	NOGC	24	13		37	
New Orleans Public Belt Railroad	NOPB	26			26	
North Louisiana & Arkansas Railroad	NLA		16	2	18	
Ouachita Railroad	OUCH	10			10	
Timber Rock Railroad	TIBR	22			22	
TOTAL MILES		2,730*	210	442	3,582*	195

Sources:

- *Class 1 Railroads – 2011 R-1 Annual Reports to the Surface Transportation Board – Form 702 Miles of Road at Close of Year, by States*
- *Local, Switching and Terminal Companies – Study team interviews with short line contacts within State of Louisiana, Railroad websites, various maps including the Professional Railroad Atlas of North America, Railroad Infrastructure Services, 2004, p. 60.*

*Note:

- Owned miles for both BNSF and UP include 240 miles of joint trackage.
- Totals, however, count the 240 miles of joint trackage once, to avoid double counting.
- A switching and terminal railroad is a freight railroad company whose primary purpose is to perform local switching services or to own and operate a terminal facility. Switching is a type of operation done within the limits of a yard. It generally consists of making up and breaking up trains, storing and classifying cars, serving industries within yard limits, and other related purposes. These movements are made at slow speed under special yard rules.

Figure 2-1: Freight Railroad Lines in Louisiana

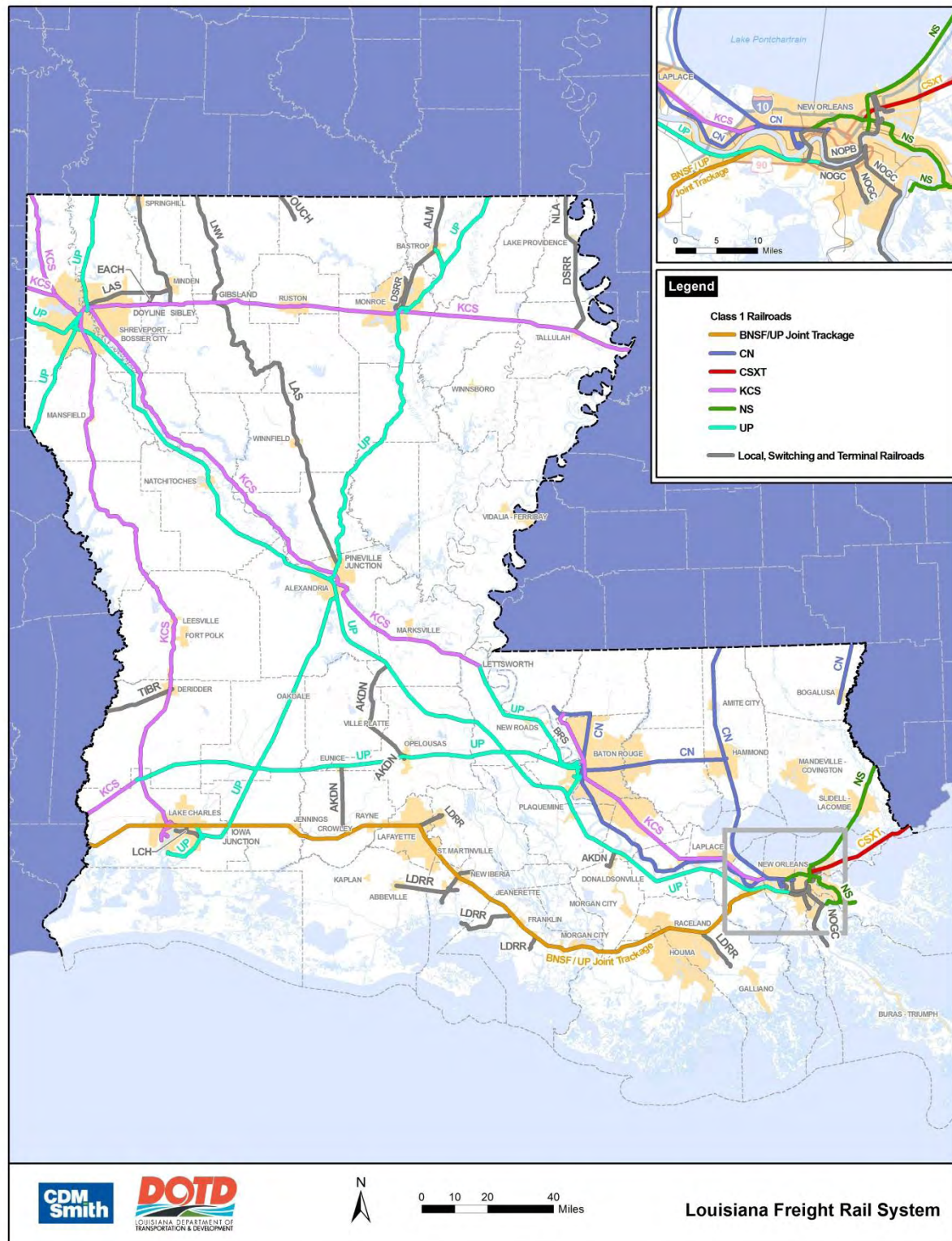


Table 2-2: BNSF Short Line Connections in Louisiana

Short Line	Connections
NOPB	New Orleans
LDRR	Lafayette and Raceland
AKDN	Crowley
TIBR	Kirbyville, Texas

BNSF transports over 120,000 carloads per year through Louisiana. Traffic hauled includes intermodal (trailer and container on flatcar or in a double-stack car), automotive, grain and industrial products. In 2010, BNSF originated 59,268 carloadings and terminated 56,880 in Louisiana. All of its lines in Louisiana are capable of handling 286,000-pound carloads.

Canadian National Railway

Canadian National Railway (CN), a publically traded company headquartered in Montreal, Quebec, Canada, owns 20,400 route miles in Canada and the U.S. Its Southern Region, extending from Rainer, MN to New Orleans and consisting of 7,400 route miles, serves the Gulf ports of Mobile and New Orleans and the river ports of Memphis and Baton Rouge. It operates 239 miles in Louisiana comprising both main routes and branch lines, as listed in **Table 2-3**.

Table 2-3: CN ownership in Louisiana

Routes	Description
Mississippi /Louisiana state border near Osyka to Kentwood via Hammond to New Orleans	North / South main track
New Orleans to Baton Rouge	East / West line
Hammond to Baton Rouge	East / West line
Baton Rouge north to Slaughter	Branch line currently not in service
Slaughter west to Riddle Zee	Branch line currently not in service
Brookhaven (MS) to the border of Twin (MS) south to Bogalusa and Lee Creek	Branch line in northeastern Louisiana

CN's primary points of traffic interchange are noted in **Table 2-4**.

Table 2-4: CN Interchange Points in Louisiana

Railroads	Interchange Points
BNSF	New Orleans
KCS	New Orleans and Baton Rouge
NOPB	New Orleans
NS	New Orleans
UP	New Orleans and Baton Rouge

CN handles 286,000-pound car weights across all of its lines in Louisiana. Annual capital expenditures average \$23 million per year in the state.

CSX Transportation

CSX Transportation (CSXT), a publically traded railroad company, operates over 21,000 route miles in the eastern, southern and Midwestern U.S. It operates 43 route miles in Louisiana (35 miles owned and 8 miles of trackage rights in New Orleans) from the Mississippi / Louisiana state line in the east to the City of New Orleans in the west. CSXT operates over and maintains nearly 140 miles of single main

track, other main tracks, yard tracks and sidings in Louisiana as of December 31, 2011. The east- west route connects all of the Class I railroads and the NOPB to the entire CSXT network branching eastward from the Mississippi state line, with primary lines across the panhandle of Florida and to the northeast into Montgomery, AL. CSXT handles over 249,000 carloads per year in Louisiana. Carloads include automotive, intermodal, sulfur, chemicals, plastics and other merchandise traffic. All CSXT lines in the state are capable of handling 286,000-pound loaded car weights.

Kansas City Southern Railway

Kansas City Southern Railway (KCS), a wholly owned subsidiary of Kansas City Southern Industries, Inc. (KCSI), operates approximately 3,500 route miles in a 10-state region serving the central and south central U.S. KCS operates 737 route miles in Louisiana: 673 miles owned, approximately 62 miles operated with trackage rights, and 2 miles leased. KCS has 40 miles of trackage rights on UP between Baton Rouge and Lettsworth, and 22 miles of trackage rights on CN in the New Orleans area. KCS routes in Louisiana routes are shown in **Table 2-5**.

Table 2-5: KCS Routes in Louisiana

Route	Description
Lake Charles via De Quincy and De Ridder to Shreveport	North - South line
New Orleans via Baton Rouge, Shreveport and northward to Kansas City	Northwest line <i>Note: KCS operates over UP via trackage rights from Lobdell Junction in Baton Rouge to Torras Junction in Lettsworth.</i>
Meridian, MS to Dallas, TX via Vicksburg, Mississippi, Monroe and Shreveport	East - West line <i>Note: The east - west line between Shreveport and Meridian, MS is the Meridian Speedway, LLC (MSLLC). NS, through its subsidiary, the Alabama Great Southern Railway Company, owns a minority interest in the MSLLC while KCS is the majority owner of MSLLC. A KCS mainline connects the MSLLC in Shreveport to Dallas.</i>
Baton Rouge to Port Hudson	Branch line

KCS serves the Ports of New Orleans, Lake Charles, Baton Rouge, and Natchitoches. KCS's Class I railroad connections are cited in **Table 2-6**.

Table 2-6: KCS Connections with Class I Railroads in Louisiana

Railroad	Connection
BNSF	Lake Charles and New Orleans via NOPB
CN	New Orleans and Baton Rouge
CSXT	New Orleans
NS	New Orleans
UP	New Orleans, Baton Rouge, Lake Charles, Shreveport, Monroe and Alexandria

KCS's connections to short lines operating in Louisiana are shown in **Table 2-7**.

Table 2-7: KCS Connections with Short Lines in Louisiana

Short Line	Connection
ALM	Monroe
BRS	Baton Rouge
DSRR	Tallulah
LAS	Gibbsland, Pineville, and Sibley
LNW	Gibbsland
EACH	Doyline
NOPB	New Orleans
TIBR	De Ridder

KCS handles 286,000-pound car weights across all lines in Louisiana.

Norfolk Southern Railway

Norfolk Southern Railway (NS), owned by Norfolk Southern Corporation, a publically traded corporation, operates approximately 20,000 route miles in 22 states east of the Mississippi River. NS operates 76 route miles of railroad in the state of Louisiana, owning 72 miles and operating over trackage rights on four miles in New Orleans. The primary NS route in Louisiana is operated by NS subsidiary, the Alabama Great Southern Railway, and runs northeast from the City of New Orleans to Benton, where it crosses the Louisiana / Mississippi state line. NS also operates the former New Orleans Terminal Railroad in St. Bernard Parish and across the "Back Belt" to interchange traffic within New Orleans. The Black Belt is a rail bypass of downtown New Orleans through Metairie.

NS serves the Port of New Orleans and connects with all of the Class I carriers in New Orleans (BNSF, CN, CSX, KCS, and UP). NS also interchanges traffic with NOPB.

NS also operates through trains on the Meridian Speedway, LLC (MSLLC), between Shreveport and Meridian, MS by virtue of its minority interest in the MSLLC, and on to Dallas via the KCS. NS handles maximum car weights of 286,000 pounds on its lines in Louisiana.

Union Pacific Railroad

Union Pacific Railroad (UP), a wholly owned subsidiary of Union Pacific Corporation, operates over 32,000 route miles in 23 states across the western two-thirds of the United States. UP operates over 1,377 route miles of track in Louisiana west of the Mississippi River. It owns 1,321 miles, including partial ownership of the 240 miles of joint trackage shared with BNSF. UP also have trackage rights over 56 miles on KCS between Lettsworth and Alexandria. Primary routes include those shown in **Table 2-8**.

Table 2-8: UP Rail Lines in Louisiana

Route	Description
Baton Rouge to Livonia to Dequincy then via trackage rights on KCS from Dequincy to Sabine River (state line with Texas)	East - West line <i>Note: This line continues in Texas serving Beaumont and Houston</i>
New Orleans to Livonia, Alexandria, Shreveport to Lorraine (state line with Texas)	East - West line <i>Note: This line continues to Dallas, Texas</i>
New Orleans via joint trackage shared with BNSF from Iowa Junction to the Sabine River (state line with Texas)	East - West line <i>Note: This line continues to Beaumont and Houston, TX</i>
Iowa Junction to Alexandria, Monroe to Muller (state line with Arkansas)	North - South line <i>Note: This line continues to Pine Bluff, Arkansas and St. Louis, Missouri</i>
Northwest Louisiana running through Shreveport (crosses Texas / Louisiana border at Logansport and Louisiana / Arkansas border north of Plain Dealing)	North-/ South line

Other UP routes include:

- Baton Rouge to Addis, a connection to its New Orleans-Livonia-Alexandria-Shreveport route.
- Baton Rouge to Lettsworth, thence via trackage rights over 56 KCS route miles to Alexandria.

UP's primary Class I connections are shown in **Table 2-9**.

Table 2-9: UP Connections with Class I Railroads in Louisiana

Class I	Connection
BNSF	New Orleans and Iowa Junction
CN	New Orleans and Baton Rouge
CSXT	New Orleans
KCS	New Orleans, Baton Rouge, Lake Charles, Shreveport, Monroe and Alexandria
NS	New Orleans

UP's short line interchanges in Louisiana are cited in **Table 2-10**.

UP originated 232,445 cars and terminated 194,848 cars in Louisiana in 2011. Recent annual capital expenditures in the state have averaged \$56 million with an additional \$200 million in expansion capital for 2011 through 2014 to provide new double track and greater network capacity to handle unit trains. UP operates intermodal, automotive, unit and mixed carload trains throughout Louisiana.

UP handles maximum car weights of 286,000 pounds on its lines in Louisiana.

Table 2-10: UP Interchanges with Short Lines in Louisiana

Short Line	Connection
AKDN	Bunkie, Eunice, and Opelousas
ALM	Monroe
DSRR	Monroe
LDRR	Lake Charles
NLA	McGehee, Arkansas <i>Note: Expected interchange end of 2012</i>
NOGC	Westwego
NOPB	New Orleans / Avondale
OUCH	El Dorado, Arkansas <i>Note: No connection in Louisiana</i>
Port of Lake Charles Port Rail Link (PRL)*	Lake Charles

*Lake Charles Harbor and Terminal District has formed the Port Rail Link, Inc. ((PRL), a non-rail carrier which now operates the LCH trackage and will receive certain trackage rights from UP (Notice of Exemption filed with Surface Transportation Board on December 2, 2011).

2.2.1.2 Local, Switching and Terminal Railroads

The local, switching, and terminal rail lines are also shown on Figure 2- 1, and miles owned and operated are contained in Table 2- 1. Many of the small railroads, also known as short lines, own and/or operate lines abandoned or spun off by Class I carriers. A brief description of each follows.

Figure 2-2 shows all lines in Louisiana that cannot accommodate loaded car weights of 286,000 pounds. The capability of handling this car weight is becoming a *de facto* industry standard. All such lines in the state belong to small railroads. As noted previously, all Class I railroads in the state can handle this car weight on all of their lines.

Acadiana Railway

Acadiana Railway (AKDN) owns and operates 68 miles of lines in Louisiana comprised of four segments: Opelousas to Bunkie (36.1 miles); a three-mile-long of former Southern Pacific Railroad switching spur at Opelousas; the five-mile Thibodaux industrial lead at McCall; and Crowley to Eunice (21.6 miles). The first and last segments are connected via 20.9 miles of trackage rights over the UP from Eunice to Opelousas. The railroad also has trackage rights on BNSF in Crowley. The Thibodaux industrial lead is currently leased for one mile to allow UP to stage unit crude oil trains.

The railroad connects with the UP at Bunkie, Opelousas and Eunice, and with the BNSF at Crowley. Gross carload weights are limited to 263,000 pounds on all AKDM lines except for 2.5 miles of 286,000 pounds permissible in Opelousas. There are two industrial parks under development in Opelousas: Saint Landry Parish and in Bunkie. Traffic includes agricultural products (primarily rice), edible oils, gravel and general freight. The carrier is affiliated with Trac-Work, Inc.

Figure 2-2: Lines Incapable of Handling Car Weights of 286,000 pounds



Arkansas, Louisiana & Mississippi Railroad

Arkansas, Louisiana & Mississippi Railroad (ALM), a Genesee and Wyoming (G&W) affiliate, extends 52.5 miles from Crossett, AR to Monroe. ALM connects with KCS and UP in Monroe and can connect with the UP at Fordyce, AR via haulage provided by the Fordyce & Princeton Railroad (F&P). However, ALM does not carry traffic north of Crossett or utilize the interchange with UP at this time. The railroad's 39 miles in Louisiana extend from the Arkansas / Louisiana state line near Geddies through Bastrop, and southward to Monroe. Gross carload weights of 286,000 pounds are permissible from MP (milepost) 0.0 to MP 4.0 in Monroe but limited to 263,000 pounds from MP 4.0 to MP 52.5. Typical commodities transported include chemicals, lumber, paper, and forest products. The ALM was acquired by G&W in 2003.

Baton Rouge Southern Railroad

Baton Rouge Southern Railroad (BRS), a Watco carrier that began operation in 2008, operates 1.5 miles of track interchanging with KCS at the BSR Brooklawn Yard about 8 miles north of Baton Rouge. BRS provides transloading services and car repair through Union Tank Car. It switches KCS customers and offers car storage services. Primary commodities are bauxite, plastic pellets, and raw and calcinated coke. BRS handles 286,000-pound carload weights.

Delta Southern Railroad

Delta Southern Railroad (DSRR) is a private company operating on two line segments for a total of 43 miles:

- *Tallulah to Lake Providence (28 miles):* DSRR owns the former Missouri Pacific Railroad line from Tallulah to Lake Providence (the line north of Lake Providence to McGhee, AR was abandoned by DSRR and is discussed later in this section). DSRR is currently operating only from Tallulah to Talla Bena and the Madison Parish Port, a distance of approximately 7 miles.
- *Monroe to Sterlington (15 miles):* DSRR leases the former Missouri Pacific line from UP.

Interchange points for the DSRR are Monroe with UP; Tallulah with KCS; and Lake Providence with NLA.

DSRR has two sites available for transloading at Tallulah and also accommodates rail car storage. Primary commodities include agricultural and chemical products, forest products and clay. DSRR limits gross carload weights to 263,000 pounds on the two line segments.

East Camden & Highland Railroad

East Camden & Highland Railroad (EACH) serves Camp Minden, the former Louisiana Army Ammunition Plant of approximately 15,000 acres near Minden which was deeded to Louisiana as a National Guard facility. EACH interchanges traffic with KCS at Doyline. The railroad provides switching services and has a 3,200-car storage capacity. Carload weights of 286,000 pounds are permissible.

Louisiana and Delta Railroad

Louisiana and Delta Railroad (LDRR), a Genesee and Wyoming (G&W) affiliate, operates seven disconnected line segments that branch off of the BNSF - UP joint trackage between Lafayette and Raceland. The LDRR interchanges traffic with BNSF at Lafayette and Schriever and with UP at New Iberia and Raceland. LDRR has 178 miles of trackage rights between Lake Charles and Raceland,

and owns another 120 route miles of former branch lines along this stretch. The seven branches are shown in **Table 2-11**.

Table 2-11: LDRR Branch Lines

Branch	Description
Breaux Branch	Breaux Bridge Package with Breaux Bridge Branch, Lafayette Commercial Branch, Elks and Power House Spurs that fan out from Lafayette
Midland Branch	New Iberia to Abbeville with Pesspon and Slat Mine Spurs
MOP Line	Serving customers in New Iberia
ARA Spur	Serving Acadiana Regional Airport facilities in New Iberia
Cypremont Branch	Baldwin to Cypremont and Port of West St. Mary
Bayou Sale Branch	Bayou Sale to North Bend
Lockport Branch	Raceland to Jay

LDRR gross carload weights are limited to 263,000 pounds across the seven branches. Typical commodities transported include aggregates, brick and cement, carbon black, chemicals, food and feed products, forest products, oil products, pipe, steel and scrap. The LDRR was acquired by Genesee & Wyoming in 1987.

Louisiana and North West Railroad

Louisiana and North West Railroad (LNW), a wholly owned subsidiary of Patriot Rail, operates 62.6 miles between Gibsland and McNeil, AR including 38 miles in the State of Louisiana. Interchange points for LNW are with KCS at Gibsland; and with UP at McNeil (via 6.5 miles of UP-leased lines between Magnolia to McNeil).

LNW provides transloading services at Gibsland, Athens, Mulnix, Homer, Haynesville and Iron Bridge Road in Louisiana. LNW owns 845 acres for real estate development and provides car storage and locomotive repair services in Gibsland. Primary commodities include chemical products, wood, steel and plastics. Gross carload weights are limited to 263,000 pounds but are being upgraded to 286,000 pounds.

Louisiana Southern Railroad

Louisiana Southern Railroad (LAS), a Watco carrier that began operations in 2005, leases and operates three separate line segments which total 167 miles, per **Table 2-12**.

Table 2-12: LAS Line Segments in Louisiana

Line Segment	Miles
Shreveport to Bossier City East to Minden	31
Sibley to Springhill	34
Gibsland to Tioga and to Pineville Junction	102

LAS interchange all of its traffic with the KCS at three stations: Gibsland, Pineville, and Sibley. LAS provides transloading services at Minden, rail car repair at Zwolle and mobile repair services at Hodge. Primary commodities are sand, chemicals, petroleum, metals, ores, and paper and forest products. Carload weight limits are limited to 263,000 pounds.

New Orleans and Gulf Coast Railway

New Orleans and Gulf Coast Railway (NOGC) is 100% owned by Rio Grande Pacific Corporation. A former UP branch line located outside of New Orleans, NOGC is a 32-mile-long railroad located on the west bank of the Mississippi that interchanges with the UP in Westwego. The railroad serves over 20 switching and industrial customers and is the only short line railroad operating east of Avondale. The main track of NOGC operates eastward from Westwego to Harvey through Gretna to Gouldsboro Yard and southward from Gouldsboro to Ironton. An abandoned rail right-of-way will be used for a six-mile extension to the Kinder Morgan International Marine Terminal (IMT) located in Myrtle Grove. Predominate shipments include a variety of food products, oils, grains, petroleum products, chemicals, coal and steel products. NOGC has access to the Kinder Morgan Delta Terminal at Harvey and the Plaquemines Parish Ports, Harbor and Terminal District south of Gouldsboro. NOGC is a 10-mph, unsignalized railroad capable of handling 286,000-pound carload weights.

Assistance from the Louisiana Department of Transportation and Development has been requested by the NOGC in relocating the main track from the town of Gretna which would facilitate the closing of many at-grade highway-rail crossings there. Partners in this project include the Regional Planning Commission in New Orleans as well as Jefferson and Plaquemine Parishes.

2.2.1.3 New Orleans Public Belt Railroad

New Orleans Public Belt Railroad (NOPB) is owned by the citizens of the City of New Orleans and managed by the Public Belt Railroad Commission. NOPB operates 26 route miles and other trackage and facilities including:

- 37.5 miles of main track and passing sidings.
- A 4.4-mile-long, double-track bridge, known as the Huey P. Long Bridge.
- 85.5 miles of yard and industry tracks.

NOPB connects to the Port of New Orleans and to the Napoleon Avenue Container Terminal to provide intermodal switching services for CN. NOPB transfers containers at the Napoleon Intermodal Rail Yard. NOPB operates four carload (switching) yards as noted in **Table 2-13**.

Table 2-13: NOPB Switching Locations

Switching Location	# of Tracks	Description
Cotton Warehouse	22	Manifest switching
Clayborn	13	Storage in transit (SIT) yard
Pauline	5	Storage in transit (SIT) yard
France	8	Industry switching

NOPB connects to all six Class I railroads (BNSF, CN, CSX, KCS, NS, and UP) in New Orleans. NOPB can handle 286,000-pound carloads on its lines.

North Louisiana & Arkansas Railroad

North Louisiana & Arkansas Railroad (NLA), an affiliated company with Arkansas Short Line Railroad, Inc., was formed in 2011 after the DSRR abandoned the former Missouri Pacific Railroad line from Lake Providence to McGehee, AR. The NLA owns 24 miles of track and leases another 41 miles of track from the Southeastern Arkansas Economic and Development District and the Lake Providence Port Authority Commission. The Lake Providence Port Authority owns all of NLA's trackage within Louisiana (16.2 miles). NLA has two miles of trackage rights on DSRR in Lake Providence.

Though not operational today, NLA will interchange traffic with UP at McGehee via a switch provided by AKDN; and DSRR at Lake Providence; the particulars of the interchange agreement are to be determined.

NLA has secured funding to rehabilitate the line and is expected to be operational at the end of 2014. Primary customers are both on the line and within the Port of Lake Providence. Primary commodities will include agricultural and industrial products. NLA will be able to handle 286,000-pound car weights.

Port of Lake Charles – Port Rail Link

The Lake Charles Harbor and Terminal District (LCH) owns 13 miles of track at the Port. Currently, the Port switches traffic among five port districts using port employees and leased locomotives. In 2011, the Port opened the new IFG Port Holdings export grain facility that can process one million tons per year in the first phase of operations with an expected expansion to two million tons in second phase. Primary commodities of the port are agricultural products, coal, coke and chemical products.

Port of Lake Charles – Port Rail Link, Inc. (PRL), a non-rail carrier, has filed a notice of exemption with the Surface Transportation Board (STB) to lease 2.3 miles of track from UP near Harbor Yard in Lake Charles and 2.8 miles of track from the Lake Charles Harbor and Terminal District, operator of the Port of Lake Charles, near the City Docks. PRL will interchange carload traffic with UP at Harbor Yard and unit trains with UP at New Yard.

Ouachita Railroad

Ouachita Railroad (OUCH), an affiliated company with Arkansas Short Line, Inc., owns and operates 26.2 route miles from El Dorado, AR to Lille. Approximately 10 miles of the line are in the State of Louisiana (Junction City to Lille) and are currently not operating. OUCH has used the line to provide storage for rail cars. The railroad is currently involved in potential economic development projects in the Junction City to Lille area that may result in rehabilitation of the line. OUCH is only capable of handling 263,000-pound car weights. Primary commodities include chemical and forest products.

Timber Rock Railroad

Timber Rock Railroad (TIBR), a Watco carrier that began operation in 1998, operates approximately 22 miles in Louisiana from the Texas / Louisiana state line near Bon Weir, TX to De Ridder. TIBR interchanges with KCS at De Ridder and with BNSF at Silsbee and Tenaha, TX.

Primary commodities are forest products and rock. TIBR handles 263,000-pound car weights.

2.2.1.4 Intercity Passenger Rail Network

This section summarizes history of passenger rail service in the state, and also summarizes the current intercity rail services provided by National Railroad Passenger Corporation, also known as Amtrak.

Historical Rail Passenger Perspective

New Orleans is a key connecting point between eastern and western railroads and transfer location to Caribbean, South and Central American water carriers. Radiating from New Orleans, the southernmost crossing of the Mississippi River, rail lines provided significant levels of passenger service during the first half of the 20th Century. Bolstered by trade and later tourism, passenger trains were the dominant mode of intercity travel until after World War I. The rail share of intercity travel began to

decline during the 1920s and 1930s when highways were improved and auto travel became more affordable to more families.

However, the rail share remained important through the 1940s and into the early 1950s, and passenger trains served all major urban areas and most of the country's small towns. In addition to transporting passengers, the trains carried mail and express. Railroad depots, usually located close to the center of each community, were activity hubs with the city development radiating out from their central location.

With the construction of the Interstate highway system during the 1950s and 1960s, and the introduction of high capacity jet aircraft that significantly reduced travel times and costs, passenger rail usage declined. Private railroads increasingly were unable to compete with publicly funded highway and airport transportation modes, and a cycle of passenger train discontinuance ensued as the rail industry sought to drop service that had become uneconomical.

With each discontinuance of rail passenger routes, connections were broken and travel options were reduced, further hastening a cycle of service reductions.

In Louisiana, the level of rail passenger service provided in the mid-1950s reflects the period before the greatest cutbacks occurred. The 1956 service level is illustrated in **Figure 2-3**.

With multiple rail routes originating at the rail hub of New Orleans, passenger trains served major cities and small towns throughout the state. Most of these were long-distance services, operating several hundred miles into adjoining states. Primary routes within Louisiana in 1956 included:

- Five daily trains across southern Louisiana, with four of these operating to Houston or beyond to Los Angeles (Southern Pacific Railroad, Missouri Pacific Railroad).
- Four daily trains through the heart of the state from New Orleans to Baton Rouge to Shreveport, continuing west to Dallas/Fort Worth or north to Little Rock, Kansas City, or St. Louis (Texas & Pacific Railway, Kansas City Southern Railway).
- Four daily trains north to Memphis and Chicago (Illinois Central Railroad).
- Two daily trains northeast to Birmingham, Atlanta and the Northeast (Southern Railway).
- Seven daily trains east to Mobile, diverging to Cincinnati, Atlanta, Washington, and Florida (Louisville & Nashville Railroad).

Additional trains operated between Shreveport and Beaumont, Shreveport and Meridian, and Monroe and Lake Charles. Passenger service was gradually reduced to only a handful of long-distance trains by 1971, when the National Railroad Passenger Corporation (Amtrak) was created by the Congress due to financial losses sustained by the freight railroads (especially the Penn Central Railroad) on their passenger operations. Amtrak is a congressionally chartered corporation owned by the US Department of Transportation and operates as a quasi-nonprofit corporation. It began with a basic national system of passenger trains. Through Louisiana, Amtrak retained service over only three routes radiating from New Orleans.

Figure 2-3: Lines with Rail Passenger Service in 1956



Gulf Coast Rail Service

The purpose of this section is to describe Gulf Coast Service operated by Amtrak. In 1982 the Louisiana-Mississippi-Alabama Rapid Rail Transit Commission undertook a study of the feasibility of rail service on several routes including one from New Orleans to Mobile. Ridership estimates were developed for this route and required capital improvements were identified. Reinstitution of the service was studied in conjunction with the Louisiana World Exposition which was scheduled to take place in New Orleans from May 12 through November 11, 1984. Based on the study it was decided to move forward and institute a rail route between New Orleans, the Mississippi Gulf Coast and Mobile.

The service, a Section 403b shared subsidy agreement with Amtrak, began April 29, 1984. The 1984 *Gulf Coast Limited* departed Mobile at 7:00 AM arriving New Orleans at 10:40 AM. It left New Orleans at 6:30 PM and arrived back in Mobile at 10:05 PM. Intermediate stops were East New Orleans, Waveland/Bay St. Louis, Gulfport, Biloxi, and Pascagoula. The schedule allowed a full day in New Orleans and was similar to Louisville & Nashville's old Gulf Wind schedule. Ridership was generally strong, and a positive funding balance enabled the train to continue operations beyond the end of the exposition. The rail service was discontinued on January 6, 1985.

After the train's termination, efforts continued to restore rail service along the Gulf Coast. These efforts bore fruit in April of 1993 when Amtrak's *Sunset Limited* was made a transcontinental route extending from New Orleans to Miami. It operated three times a week in each direction.

In an effort to capitalize on the new gambling venues along the Mississippi Gulf Coast and given the *Sunset Limited's* tri-weekly schedule, the Southern Rapid Rail Transit Commission (which has since been renamed the Southern High Speed Rail Commission) continued to seek additional rail service along the Gulf Coast. After much discussion Amtrak agreed to a 90-day experiment using layover equipment from the *City of New Orleans*. Service began on June 27, 1996. The train was once again named the *Gulf Coast Limited*, and its schedule was similar to the one in 1984 – early morning westbound from Mobile to New Orleans and evening eastbound from New Orleans to Mobile. Intermediate stops were at Bay St. Louis, Gulfport, Biloxi and Pascagoula. Service was successful and lasted beyond the 90-day period until March 31, 1997, when funding issues resulted in its discontinuance. Thus for almost a year there were multiple frequencies on the Mobile, Mississippi Gulf Coast, New Orleans route.

Amtrak's *Sunset Limited* continued to provide intercity passenger rail service along the Gulf Coast until Hurricane Katrina in August 2005. The destruction caused by the hurricane along the Gulf Coast forced Amtrak to suspend the service east of New Orleans. The service remains suspended today due to funding issues.

Current Amtrak Service

The state is served by three long-distance Amtrak trains, centered on New Orleans. There currently is no commuter or intercity corridor service provided in the state, either by Amtrak or by other operators. There is one small tourist railroad operated by the Southern Forest Heritage Museum. Amtrak operates entirely over the trackage of Class I freight railroads, except for the New Orleans Public Belt Railroad and the trackage at New Orleans Union Passenger Terminal. While service was expanded to Mobile and Orlando in the 1980s and 1990s, Amtrak frequency of service on its trains through Louisiana is now what it was in 1971. While the limited number of cars available has constrained traffic growth, revenue management, targeted marketing and high gas prices have driven

ridership and ticket revenue to record levels. Current routes appear in **Figure 2-4**. The current services are discussed below.

Crescent

The *Crescent* operates between New York and New Orleans. (**Table 2-14**) The service consists of one daily round-trip, stopping at Slidell in Louisiana before terminating in New Orleans. Intermediate stops outside Louisiana include Birmingham, Atlanta, Charlotte, NC, Washington, DC, Baltimore, Philadelphia, and New York City. Southbound the train leaves New York at 2:15 PM and arrives in New Orleans at 7:32 PM the following day. Northbound route train leaves New Orleans at 7:00 AM and reaches New York at 1:46 PM the following day. The *Crescent's* schedule offers daytime service between Atlanta, Birmingham and New Orleans.

Table 2-14: Route Segments of the *Crescent*

Segment	Miles per Segment
New York - Washington DC	225 miles
Washington DC - Charlotte	376 miles
Charlotte - Atlanta	258 miles
Atlanta - New Orleans	518 miles
Total:	1,377 miles (48 miles in Louisiana)

The *Crescent* operates with single-level equipment, due to limited clearances through tunnels between Washington and New York. The train carries coaches, sleeping cars, a diner, and a lounge car.

In Fiscal Year 2012 the *Crescent* carried 304,266 riders, virtually unchanged from the previous year. In Fiscal Year 2011, 83,300 riders, almost 28% of total riders on the *Crescent*, traveled to/from New Orleans.

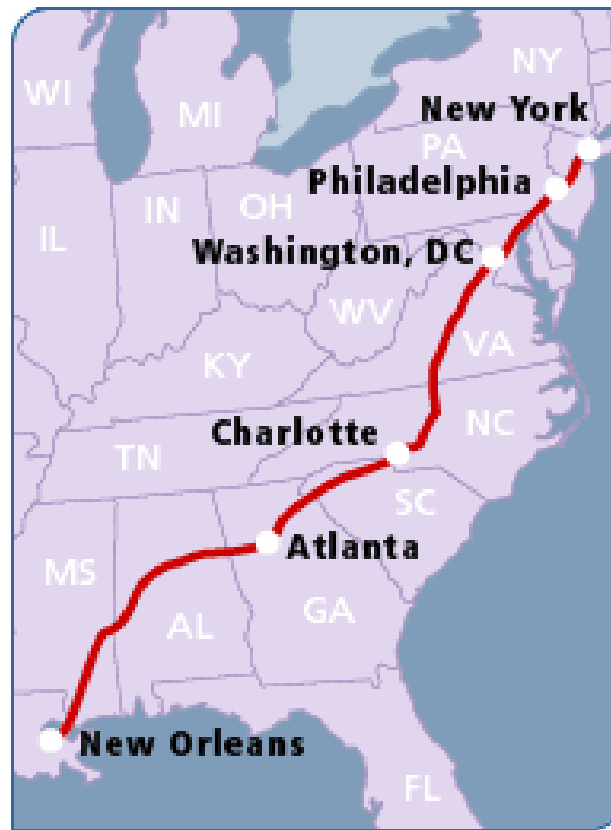
Based on the 2010 Amtrak Ridership Profile for the *Crescent*, passengers are mostly taking leisure trips (79%). The majority of these trips (54%) are for visiting family or friends while vacation or other recreational trips account for the remainder in this category. Of the remaining riders, 9% are traveling for personal business while 11% are making business trips. The majority of riders are female (71%) with an average age of 58 years and with household income averaging \$76,000 per year (2010). Almost half of all travelers are employed, and a large segment (41%) is retired.

New sleeping cars, dining cars and baggage-dormitory cars are under construction that will replace Heritage diners and baggage-dorms and supplement sleeping car capacity.

A map of the *Crescent* route appears in **Figure 2-5**. Through Louisiana, the *Crescent* operates on track owned by the Norfolk Southern Railway and New Orleans Union Passenger Terminal.

Figure 2-4: Current Amtrak Routes in Louisiana



Figure 2-5: *Crescent Route*

Source: Amtrak

City of New Orleans

The *City of New Orleans* operates between Chicago and New Orleans. (**Table 2-15**) The service consists of one daily round-trip, stopping at Hammond in Louisiana before terminating in New Orleans. Intermediate stops outside Louisiana include Champaign-Urbana, IL, Carbondale, IL (with connecting Thruway bus service to St. Louis), Fulton, KY, Memphis, TN and Jackson, MS. Southbound the train leaves Chicago at 8:00 PM and arrives in New Orleans at 3:32 PM the following day. Northbound route train leaves New Orleans at 1:45 PM and reaches Chicago at 9:00 AM the following day. The *City of New Orleans* schedule offers daytime service in both directions through Mississippi. The distances between some of the major cities along this route are as follows:

Table 2-15: Route Segments of the *City of New Orleans*

Segment	Miles per Segment
Chicago - Champaign-Urbana	129 miles
Champaign-Urbana - Memphis	391 miles
Memphis - Jackson	223 miles
Jackson - New Orleans	183 miles
Total:	926 miles (120 miles within Louisiana)

A map of the *City of New Orleans* route appears in **Figure 2-6**. Through Louisiana, the *City of New Orleans* runs on track owned by the Canadian National Railway and New Orleans Union Passenger Terminal.

The *City of New Orleans* operates with Amtrak Superliner equipment. The bi-level cars provide coach seats, sleeping car rooms, Cross-Country Café, and a Sightseer Lounge Car.

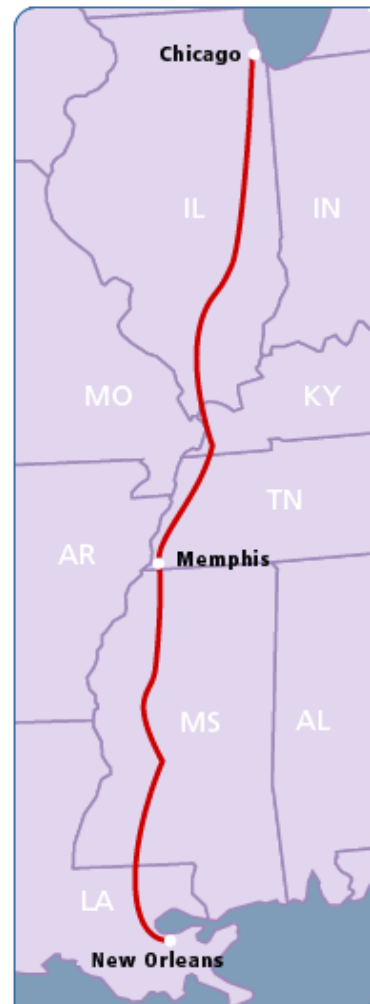
In Fiscal Year 2012, the *City of New Orleans* carried 253,170 riders, an 8.5% increase over the previous year. In Fiscal Year 2011, 95,800 riders, about 41% of total riders on the *City of New Orleans*, traveled to/from New Orleans.

Based on the 2010 Amtrak Ridership Profile for the *City of New Orleans*, passengers are mostly taking leisure trips (74%). A large portion of these trips (44%) are for visiting family or friends, while vacation and other recreational trips account for the remainder in this category. Of the remaining riders, 11% are traveling for personal business while 12% are making business trips. The majority of riders are female (67%) with an average age of 56 years. The household income of riders averages \$70,000 per year (2010). In all, 45% of all travelers are employed, but a large segment (40%) is retired.

Sunset Limited

The *Sunset Limited* operates on a tri-weekly schedule between Los Angeles and New Orleans (1,995 miles), serving major intermediate stations at Maricopa, AZ (Phoenix), Tucson, AZ, El Paso, TX, San Antonio, TX, and Houston, TX. (**Table 2-16**) Through cars from Chicago (via St. Louis and Dallas) are switched to and from the train in San Antonio. The train terminates in New Orleans on Tuesday, Friday and Sunday, and the train originates in New Orleans on Monday, Wednesday, and Saturday. Westbound the train leaves New Orleans at 9:00 AM, arriving in Los Angeles at 5:35 AM two days later. Eastbound the train leaves Los Angeles at 10:00 PM, arriving in New Orleans at 9:40 PM two days later. The *Sunset Limited* offers daytime/evening service locally within Louisiana, although the tri-weekly service limits the appeal of the train for short-distance travel.

Figure 2-6: *City of New Orleans* Route

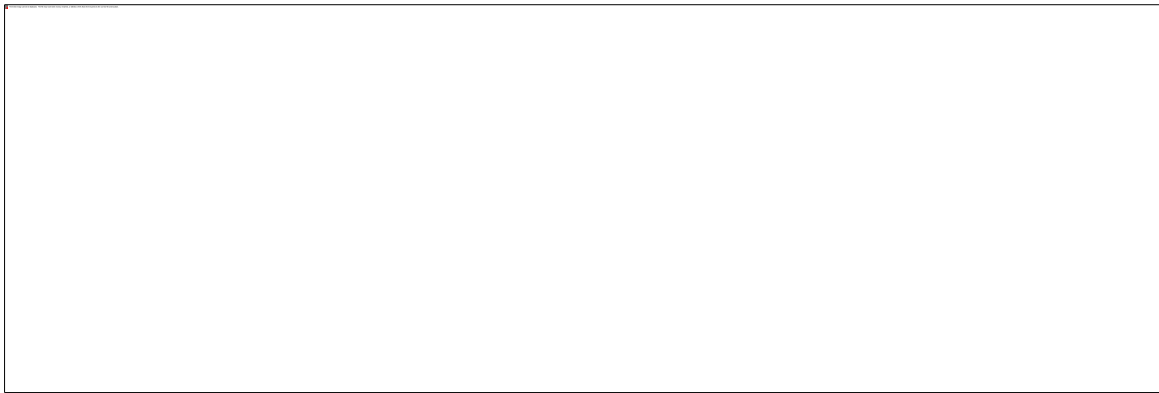


Source: Amtrak

Table 2-16: Route Segments of the *Sunset Limited*

Segment	Miles per Segment
Los Angeles –Tucson	502 miles
Tucson – El Paso	315 miles
El Paso - Houston	815 miles
Houston - New Orleans	363 miles
Total:	1,995 miles (251 miles in Louisiana)

A map of the *Sunset Limited* route appears in **Figure 2-7**. Through Louisiana the *Sunset Limited* operates on track owned by the Union Pacific Railroad, BNSF Railway, New Orleans Public Belt Railroad, Canadian National Railway and New Orleans Union Passenger Terminal.

Figure 2-7: *Sunset Limited* Route

Source: Amtrak

The *Sunset Limited* operates with Amtrak Superliner equipment. These cars are bi-level cars with passenger accommodations on two levels. The train carries coaches, sleeping cars, a diner, a Sightseer Lounge, crew dormitory car and a baggage car.

In Fiscal Year 2012, the *Sunset Limited* carried 101,217 riders, a 1.6% increase over the previous year. In Fiscal Year 2011, 31,200 riders, about 31% of total riders on the *Sunset Limited*, traveled to/from New Orleans.

Based on the 2010 Amtrak Ridership Profile for the *Sunset Limited*, passengers are mostly taking leisure trips (89%). A large portion of these trips (52%) are for visiting family or friends, while vacation and other recreational trips account for the remainder in this category. Of the remaining riders, 11% are traveling for personal business, while 5% are making business trips. The majority of riders are female (57%) with an average age of 59 years. The household income of riders averages \$57,000 per year (2010). In all, 33% of all travelers are employed, but a large segment (55%) is retired.

Thruway Bus Service

Amtrak provides connecting bus service between rail stations and nearby communities without passenger rail service. In Louisiana, Thruway service is provided between Longview (served by the Chicago-San Antonio *Texas Eagle*) and Shreveport/Bossier City, and also between New Orleans and Baton Rouge. The Thruway service is marketed as an extension of the rail service with through tickets and fares.

2.2.1.5 Proposed Services

Passenger Rail

Various passenger rail improvements have been studied which would expand Louisiana's limited passenger rail network. Like the existing Amtrak services, most of these proposed services would serve New Orleans. The proposed intercity rail services include:

- New Orleans-Meridian-Birmingham-Atlanta Corridor
- New Orleans-Baton Rouge-Lake Charles-Houston Corridor
- New Orleans-Gulfport-Mobile Corridor
- New Orleans-Jackson-Memphis Corridor
- Dallas-Shreveport-Jackson-Meridian Corridor
- Shreveport to Baton Rouge and New Orleans Corridor

A commuter rail concept linking Baton Rouge with New Orleans Commuter has also been proposed.

All of these proposed services are discussed in detail in Chapter 3.

Freight Rail

While there are no new freight services anticipated beyond incremental improvements anticipated by the Class I railroads, various freight projects are either ongoing or are planned. These include:

- New Orleans Rail Gateway
- New Orleans and Gulf Coast rail line relocation
- St. James Terminal improvements
- Short line track upgrades to carry heavier loaded car weights

All of these major projects, in addition to grade crossing improvements, closures, and grade separations on freight lines, are discussed in detail in Chapter 4.

2.2.1.6 Abandonments and Rail-Banked lines

Abandonments

Very little mileage of the state rail system has been abandoned since the 2003 *Louisiana Statewide Rail System Plan* was published. Official abandonments accounted for 5.5 miles spread over three line segments of the KCS in Jefferson, Winn, and East Feliciana Parishes in 2005 and 2006.

Two line segments were granted a Discontinuance of Service by the STB, however. They are:

- NS (AGS) – Poydrus Junction to Toca, 4.5 miles, in St. Bernard Parish.
- Gloster Southern Railroad (GLSR) – Slaughter, LA to Gloster, Mississippi, 33 miles in total, 21 miles of which lie in Louisiana, viz., East Feliciana Parish. The tracks in Louisiana have been removed.

In addition, after acquisition of its line north of Lake Providence by other parties as discussed elsewhere, DSRR ceased to operate trains north of Talla Bena. This action effectively took another 16 miles out of service in Madison and East Carroll Parishes.

Also, the UP shows the Bastrop Industrial Lead (8.72 miles Bastrop to Collinston in Morehouse Parish) on its System Diagram Map. It is designated as Category 1 (anticipated to be an abandonment candidate within three years).

In summary, there have been 47 miles of rail line either abandoned or removed from service in the intervening years since the last state rail plan.

Rail-banked Lines

The process whereby inactive rail corridors are preserved for possible future rail use, with interim use as a trail, is called rail banking. A typical means of rail banking lines is converting them for use as trails.

Louisiana is home to several trails developed on abandoned rail lines. One of the most recognized rail trails is Tammany Trace. The trail is located on former Illinois Central right-of-way between Covington and Slidell purchased in 1992. The asphalt trail is now 61 miles long and is in the process of being extended into downtown Slidell. Attractions are located in communities and stops along the trail.

Located in the northwest corner of the state, Louisiana Trails is being developed on the former Louisiana and Arkansas Railway right-of-way between Sibley and Winnfield, some 61 miles. The line was abandoned in 1989 and made available for interim trail use 1997. The first 9 miles of the trail were opened in 2004. The surface is unimproved.

The Lafitte Corridor is being developed on the right-of-way of a former shipping canal and then a railway (NS) that connected the French Quarter to Bayou St. John. The project consists of 3.1 miles between Basin Street (Louis Armstrong Park) and Canal Boulevard next to St. Louis Avenue. The corridor is to be developed as a greenway with a continuous trail and other recreational facilities.

2.2.2 Major Freight and Passenger Terminals

2.2.2.1 Freight Terminals

BNSF Railway

Some of BNSF's rail yards are cited in the **Table 2-17**. General carload or merchandise traffic is handled at traditional carload (switching) yards, while containers and trailers handled at intermodal (lift-on, lift-off) yards.

Table 2-17: Rail Yards with Commodities Handled

Rail Yards	Commodity
Lafayette	Merchandise
Avondale	Merchandise
Westwego	Intermodal

Canadian National Railway

CN operates an intermodal facility in New Orleans. Its primary yards for other rail traffic are Mays Yard in New Orleans, and yards in Baton Rouge and Hammond. Major commodities transported include intermodal, automotive, iron, steel, petroleum and chemical products, forest and paper products, coal, fertilizers and grain products. Along the Mississippi River west of New Orleans, CN connects to grain export terminals at Reserve, Destrehan and Helvetia.

CSX Transportation

CSXT's primary facilities are listed in **Table 2-18**.

Table 2-18: CSXT Facilities in Louisiana

Location/Designation	Yard Type
Gentilly	Major merchandise switching yard
Gentilly-CSXT Intermodal	Hub intermodal yard
Gentilly-CSXT TRANSFLO	Bulk material rail car to truck transloading yard

Kansas City Southern Railway

KCS has no intermodal facilities in Louisiana. Primary carload (switching) yards for KCS in Louisiana are cited in **Table 2-19**:

Table 2-19: KCS Carload Yards in Louisiana

Location	Facilities
New Orleans	Shrewsbury
Shreveport	Deramus, Harriet Street Yards
Baton Rouge	Baton Rouge Yard
Lake Charles	Mossville and Rose Bluff Yards
Monroe	Monroe Yard

Norfolk Southern Railway

NS has two primary yards in New Orleans, as shown in **Table 2-20**.

Table 2-20: NS Yards and Facilities in New Orleans

Location	Yard Type
Oliver Street	Intermodal and carload
Chalmette	Carload

Union Pacific Railroad

UP primary yards in Louisiana are shown in **Table 2-21**.

Table 2-21: UP Yards and Facilities in Louisiana

Location	Yard Type
Avondale, New Orleans	Intermodal and carload
Gouldsboro, New Orleans	Carload
Livonia	Carload
Baton Rouge	Carload
Alexandria	Carload
Monroe	Carload
Hollywood, Shreveport	Carload
Riverside, Shreveport	Carload

Also, UP serves three Gulf ports in Louisiana: Lake Charles, Baton Rouge, and New Orleans.

2.2.2.2 Major Passenger Facilities

Stations

In addition to serving as being gateways to trains, rail stations are also gateways to and from all the cities served by these trains. Rail stations are a focus for activity and foster economic development, commercial endeavors, tourism, cultural activities, civic pride and historic preservation in their cities.

There are seven active Amtrak stations in Louisiana, all located in the southern part of the state. The most significant of these is the New Orleans Union Passenger Terminal (NOUPT), which is the point of origin or destination for all three Amtrak routes that serve Louisiana. These routes are the *City of New Orleans* from Chicago, the *Crescent* from New York, and the *Sunset Limited* to Los Angeles.

In addition to New Orleans, four stations (Schriever, New Iberia, Lafayette, and Lake Charles) are served by the *Sunset Limited*. These stations have tri-weekly service, seeing one train per day except for Thursday when no service is operated. Schriever and New Iberia are flag stops, at which the train will stop only if there is a passenger with a reservation to board or detrain at that station. The other stations are regular stops. The *City of New Orleans* makes a stop at Hammond, and the final station for the *Crescent* in Louisiana is at Slidell, which is a flag stop. The *City of New Orleans* and *Crescent* operate daily in each direction. Amtrak also advertises connecting bus service to Baton Rouge and Shreveport; however, these connections are operated independently from Amtrak by other operators, and Amtrak has no involvement with the bus stations.

Two of the stations, New Orleans and Hammond, are staffed by a ticket agent and offer baggage services. Only New Orleans has Amtrak's QuikTrak automatic ticket vending machines. The other five are unstaffed. Unstaffed stations are facilities with either platforms with shelters or structures with enclosed waiting rooms, but no station employees besides part-time or volunteer caretakers that open and close station structures at train time.

Five of the stations are fully wheelchair accessible. New Iberia and Schriever have some barriers to wheelchair use and not all station facilities are accessible. Only one station (Slidell) is not wheelchair accessible.

The station in Lafayette was reconstructed and is now an intermodal transportation center. The Lake Charles rail station is a new station modeled after the old Texas & New Orleans Lake Charles station. Stations in Slidell and Hammond have been renovated, and a new, ADA-compliant, 550 -foot platform was constructed at the Hammond station in 2011.

Owned by the city of New Orleans, NOUPT is undergoing major renovations. NOUPT is seen as a key portal for hurricane evacuation, and the terminal and surrounding area are a focus for increased development by the city. A new streetcar line is under construction to link the station with the Canal Street streetcar line.

Of the seven Louisiana stations, New Orleans is the most prominent. All three trains service this station, and its ridership represents 86% of the Amtrak travel activity in the state.

New Orleans offers good transit connections with the new streetcar line to the station under construction. It also serves as the New Orleans Greyhound Terminal offering connections to intercity motor coach service. One Amtrak Thruway route, to Baton Rouge, LA, originates at the station.

Two stations, Lafayette and Lake Charles, are local transit centers offering connections with the local transit bus network. Hammond offers “on call” transit service to the Amtrak station while there are few transit connections except taxis at the remaining stations. There is long-term parking at New Orleans with three other stations offering on-site long-term parking. Three others offer long-term parking nearby, and only New Iberia lacks long term parking opportunities around the station area.

In addition to the passenger terminal, the NOUPT facility (leased and dispatched by Amtrak) includes platform tracks, yard tracks for servicing and staging trains and mainline tracks extending from Magnolia Street (connection to the yard tracks) to North Wye and from North Wye to Carrollton Junction (0.6 mi.). At Carrollton Junction NOUPT tracks split with one leg to East City Junction (3.5 mi.) and the west leg to Southpoint Junction (2.0 mi.). In addition to yard tracks, the station complex contains employee parking, baggage facilities, crew base (on-board services and train crew), commissary, management offices, and engine terminal and car maintenance facilities. These mechanical facilities perform turnaround servicing, maintenance and light overhauls.

ADA Compliance

Amtrak's *A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990*, produced in 2009, notes that four in-service Louisiana stations are required to be ADA compliant. These are Hammond, Lafayette, Lake Charles, and New Orleans. The other stations are flag stops, which are not required to be ADA compliant.

The four were assessed as to the levels of ADA compliance of their station structures, platforms and pathways. The assessments ratings are: Generally Compliant, for stations scoring above 80% on their compliance score; Partially Compliant, for stations scoring between 20% and 79%; and Minimally Compliant, for stations scoring lower than 20%. All four of the Louisiana stations which are required to be ADA compliant were rated as Partially Compliant in 2009. The platform at Hammond was the only Minimal Compliant structure. However, recent construction has addressed that shortfall. The same report cited preliminary cost estimates for improvements ensuring ADA compliance and a state of good repair for station structures, platforms, and pathways. For the four Louisiana stations, the total of these estimated costs was approximately \$8.9 million (adjusted for the recently completed Hammond, LA platform).

Amtrak and the freight railroads are currently working to develop strategies and plans to meet FRA's new requirements requiring level boarding to accommodate passengers with disabilities. This is a very complex task integrating railroad clearance requirements, freight traffic, the mix of different boarding levels by type of equipment (Superliner, single-level, and commuter) that often operate on the same line, while fulfilling the requirements and spirit of the ADA statute.

Station Characteristics

The matrix in **Table 2-22** summarizes the existing Louisiana stations and their specific information.

Table 2-22: Characteristics of Louisiana Amtrak Stations

Location	Hammond	Lafayette	Lake Charles	New Iberia	New Orleans	Schriever	Slidell
Owner	Hammond Chamber of Commerce/CN (Platforms)	City of Lafayette/BNSF (Platforms)	City of Lake Charles/UP (Platforms)	L&D RR/BNSF (Platforms)	City of New Orleans	BNSF Railway	City of Slidell
Address	404 N.W. Railroad Avenue Hammond, LA 70401	100 Lee Avenue Lafayette, LA 70501	100 Ryan Street Lake Charles, LA 70601	402 West Washington Street New Iberia, LA 70560	1001 Loyola Avenue New Orleans, LA 70113	Highway 20 and Highway 24 Schriever, LA 70395	1827 Front Street Slidell, LA 70458
Flag Stop?	No	No	No	Yes	No	Yes	Yes
Served By:	<i>City of New Orleans</i>	<i>Sunset</i>	<i>Sunset</i>	<i>Sunset</i>	<i>City of New Orleans Crescent Sunset</i>	<i>Sunset</i>	<i>Crescent</i>
Platform Type	Single	Single	Single	Single	Single	Single	Single
Length	470'	~300'	~130'	~450'	~980'	~200'	160'
Construction	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Shelter	Awning Adjacent to Depot	Covered Platforms	Passenger Shelter	None	Covered Platforms	None	None
Lighting	Fully Lit	Partially Lit	None	None	Fully Lit	None	Partially Lit
Platform Amenities	None	Benches	Bench in Shelter	None	None	None	None
Passenger Safety	Yellow Safety Line, Tactile Strip	Yellow Safety Line, Tactile Strip	Yellow Safety Line, Tactile Strip	None	Yellow Safety Stripe	Yellow Safety Stripe	None
ADA	Fully Accessible	Fully Accessible	Fully Accessible	Partially Accessible	Fully Accessible	Partially Accessible	Fully Accessible
Depot Hours	10:00 AM - 5:30 PM	No Hours	No Hours	No Hours	5:00 AM - 10:00 PM	No Hours	No Hours
Seating Capacity	~25	23 Outside 16 Inside	None	0	~120	None	~16
Restrooms	None	Yes	Yes	None	Yes	None	Yes
Vending	None	Yes	None	None	Yes	None	None
Ticketing	Staffed Counter, Baggage Service	None	None	None	Staffed Counter, Baggage Service, Quik- Trak Kiosk	None	None
Telephones	Payphone	Payphone	None	Payphone	Payphone	Payphone	Payphone
Shared Uses	Chamber of Commerce Clerk of Courts	Lafayette Transportation System	Lake Charles County Transit	L&D Railroad Office	Greyhound Bus Station Restaurants Sheriff Office	BNSF Railway Office	Times Bar & Grill NS Railway
Parking	6 Short Term Spaces 0 Long Term Spaces On Site	Yes	0 Short Term Spaces 12 Long Term Spaces	5 Short Term Spaces 0 Long Term Spaces	180 Short Term Spaces 0 Long Term Spaces	6 Short Term Spaces 6 Long Term Spaces	4 Short Term 44 Long Term
ADA Parking Facilities	1 Accessible Space	1	2	1	None	None	2
Intermodal	None	Yes, LTS	Yes, LCCT	None	Yes, Greyhound	None	None
Other	\$483,000 in ADA Compliance and State of Good Repair Needs. New Platform w/ ADA Access Installed May 2011. Long Term Parking is in City lot 1-block South of station.	\$491,000 in ADA Compliance and State of Good Repair Needs. Transportation center parking area located on west side of site, but unknown if this is for long term parking.	\$567,000 in ADA Compliance and State of Good Repair Needs.	Depot building not used for passenger waiting area.	\$7,330,000 in ADA Compliance and State of Good Repair Needs. Long term parking available off site.	Depot building not used for passenger waiting area.	Depot building used for passenger waiting area. Door was unlocked.

2.2.3 Objectives for Passenger Service in Louisiana

No changes in frequency and capacity of Amtrak services are planned in Louisiana. That noted, improvements on other fronts could be implemented that would enhance the existing services. These are described below. They are based on the experiences of other states, which are described in greater detail in **Appendix A**.

2.2.3.1 Enhance Existing Services

Promotional Programs

Promotion of existing rail service is the first step in building awareness and usage of the rail mode. Noting the availability of Amtrak service and offering a link to the Amtrak website on state and local travel websites is a key first step in promoting rail service. Joint promotions can be developed that link with Amtrak, local transit carriers, hotels and attractions. All of the participants in this program could work together to provide detailed information on how to visit and enjoy Louisiana cities. This effort could also benefit small cities with historic downtowns.

Volunteers Program

Volunteers on the trains and in stations can offer personalized service and information as travelers make their journeys. They can also assist passengers and provide information about passenger services, the train route, ground transportation, and area attractions. These volunteers can also provide feedback to the state on issues important to maintain the quality of rail service. Onboard trains they can highlight on-time performance and recurring mechanical issues, while in stations they can cite potential security issues and maintenance issues.

Amtrak has had an active on-board volunteer docent program on-board its long-distance trains for more than 20 years. It began in the late 1980s in conjunction with the roll-out of the new Superliner equipment. Originally utilizing local historical and rail historical societies for management, training and docents, the program has now been adopted as a major public outreach program by the National Park Service (NPS). Utilizing NPS ranger staff for oversight, training and management, NPS volunteer docents on the trains provide programs on 10 Amtrak long-distance train routes. In addition, two other volunteer programs are offered, one on the California Zephyr sponsored by the California State Railroad Museum, and the other on the Cardinal sponsored by the Collis P. Huntington Historical Society. These programs provide Amtrak passengers with information and discussions about the scenery and historical sites that the long-distance trains pass, which help transform a long-distance train trip into a "Land Cruise". For the National Park Service these programs provide a way to reach non-park travelers with information about national parks along the route (for future visits) and the natural, historic and cultural information of areas the train is passing through. In 2012 it was estimated that over 34,000 volunteer hours were utilized to inform over 450,000 Amtrak riders participating in the Trails and Rail program.

All three long-distance trains serving New Orleans feature Trails and Rails programs. The *Sunset Limited* and City of New Orleans feature programs sponsored by the New Orleans Jazz National Historic Park, while the program on the Crescent between Atlanta and New Orleans is overseen by the Martin Luther King National Historical Park. More information can be found on the NPS website under Trails and Rails. Details on the trip segments and days the programs are offered is available on the Amtrak website under Trails and Rails. In most cases the programs are seasonal and are only offered on selected days of the week so any assistance the State of Louisiana or local Convention and Visitors

Bureaus could offer in terms of funding or volunteer personal would be welcomed by Amtrak and the NPS.

Amtrak and Freight Rail Engagement

The state can also work with Amtrak and the freight railroads in addressing on-time performance and capacity issues. The state can serve as a catalyst in developing funding to resolve these issues. Amtrak has a regional manager who would be the first line of contact on service issues in Louisiana. The freight railroads carrying Amtrak trains are CN, NS and UP. Representatives from these railroads are known to DOTD staff and would be appropriate contacts to engage these Class I railroads on Amtrak service issues.

Multi-state Partnerships for New Service

Most proposed passenger rail routes will extend outside the boundaries of a single state. It is imperative that a strong partnership and working relationship be developed between the state partners or public entities responsible for jointly overseeing the service. The partnership will vary depending on the route of the service. Where the route endpoint is close to the state line one state may dominate. In other cases all states must be equal partners. Several examples of these partnerships include: British Columbia, Washington and Oregon for the *Cascades*; Maine and the Massachusetts Bay Transportation Authority for the *Downeaster*; and the Midwest Regional Rail initiative – a coordinated effort by Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. These states are cooperating in designing a multi-state, multi-route network and key connections at the Chicago Hub. The focus is on constructing the core segments first even if investment in a member state is delayed many years.

2.2.3.2 Freight Railroad Participation

Another key priority is a close working relationship with the partner freight railroads. The freight railroad must not only be a partner but an advocate of the proposed improvements. The freight railroads' traffic needs must be a key element in developing corridor plans. Operations analysis and capacity simulation should be the first step in planning any service improvement. The corridor improvement strategy must not only improve and add capacity for the proposed rail passenger service, but also identify how freight service is maintained and improved as part of the investment. By identifying improvements that also improve rail freight service through joint investment, the opportunity for additional freight railroad capital investment is created. An additional issue concerning freight railroads is that even though the public investment may build sufficient capacity to operate passenger trains without delay to freight trains, the passenger investment may consume valuable right-of-way that results in future freight capacity investment being dramatically more expensive.

2.2.3.3 Continuing Outreach

A strong outreach effort to a wide range of stakeholders is also important in achieving the funding requirements required to support the corridor service and phasing plans developed by the Southern Rail Commission (formerly the Southern High-Speed Rail Commission). It is also a key requirement of PRIIA. Public transportation advocates, on-line cities, right-of-way neighbors, the tourism industry, downtown business interests, connecting transit networks, taxi companies, the freight railroads, rail labor and rail line freight users all will benefit from an improved service and rail network. All will need a complete understanding of the need for a consistent funding source and the requirement that the service be expanded in distinct phases.

2.2.3.4 Funding Strategies

Funding availability will drive Louisiana's implementation strategy. Currently the lack of a clear strategy for the development of specific capital and operating funding flows prevents Louisiana from moving aggressively in developing additional rail passenger service. The lack of such funding impacts the award of federal funds and any private partnerships that might arise. If the state cannot be the lead agency there are several examples of counties (parishes) or regional agencies taking the lead in developing a rail improvement program. In the absence of a state-led program, it should be supportive of efforts by local parishes or agencies in developing such a program.

If funding remains a challenge, then the strategy would be a more conservative one. Implementation of actual rail service would be deferred, while Louisiana's efforts would be directed toward improving the Louisiana rail network and especially the New Orleans Rail Gateway and New Orleans Union Passenger Terminal and trackage. Improvements to the Gateway network are the linchpin for further development of all but one of the potential rail services noted in Section 2.1.1.3 and outlined in Chapter 3. In addition, one of the major benefits is expanded rail network capacity and improved velocity for freight trains in the New Orleans region. Focusing on the New Orleans Rail Gateway and leveraging both private and public funds, capital investment planning and construction would develop projects designed to lay the foundation for future rail passenger service while providing near-term benefits to key stakeholders, especially the freight railroad partners and freight shippers (by also improving rail freight service). Cities would also benefit through grade crossing improvement projects and improved livability. One critical facet is to contractually specify future rail passenger capacity that is added when each project is implemented. Finally, improving the freight rail network and improving its capacity improves Louisiana's competitiveness in the global marketplace.

Potential funding sources for station improvements include the local jurisdictions. As noted in Chapter 2, the cities of Slidell and New Orleans own their respective stations, and the cities of Lake Charles and Lafayette own their respective station platforms. The Hammond Chamber of Commerce also owns its station's platforms.

2.2.3.5 Multimodal Integration and Transit Oriented Development

The improved rail passenger route is but one part of the transportation product. Two other key factors are transit/taxi connections and transit oriented development (TOD).

Developing the station as a transit hub enables passengers to reach their final destination in a convenient, timely manner whether the passenger's destination is within the city, in the region or another intercity journey. Several Louisiana stations including New Orleans Union Passenger Terminal, Lafayette and potentially Lake Charles are multimodal terminals. Located downtown, they are within easy walking distance of nearby destinations and provide convenient transit connections.

Using the rail station as a development tool, recreating the traditional downtown of the rail era where offices, retail and multi-family housing surround the rail station and are within easy walking distance of it, is the goal of TOD. TOD builds rail ridership and builds communities.

The plans for the Gulf Coast High Speed Rail Corridor include initiatives to assure that the proposed stations are multimodal gateways. The stations will be transit hubs, and in some cases regional transportation hubs, thus allowing convenient transfers that will take the passengers to their final destinations. A connection between the Kenner Station and the Louis Armstrong New Orleans International Airport is planned. In addition, planning efforts will be undertaken as the corridor is being developed to create walkable TOD around stations.

2.2.3.6 Projected Ridership

Given that no major enhancements of Amtrak services are planned, future intercity ridership should track, more or less, the growth in populations. **Table 2-23** shows ridership (boardings and alightings) for the last three full years at Louisiana stations and the projects ridership to Year 2032.

Table 2-23: Amtrak Ridership Forecast

Station	2010	2011	2012	2032
Hammond	14,404	15,249	15,212	44,119
Lafayette	6,122	6,295	5,969	6,517
Lake Charles	2,909	3,127	3,438	3,356
New Iberia	1,250	1,667	1,670	1,762
New Orleans	200,249	210,465	222,828	249,158
Schriever	1,292	1,383	1,755	1,747
Slidell	7,369	7,316	7,101	22,816
Total	233,595	245,502	257,973	329,475

The forecasting method was to calculate the population increases in each of the parishes within 30 miles of a station year over year from 2010 to 2030, and then apply those factors to 2012 ridership to create a 2032 ridership estimate. As the mileage of Amtrak routes in Louisiana are a small fraction of their total, the forecast is provided on a Louisiana station basis.

It is important to note that this forecast is unbounded and assumes no constraints on growth due to capacity limitations, e.g., train frequency or cars per train.

2.2.4 Performance Evaluation of Louisiana Amtrak Services

2.2.4.1 Ridership

The totals shown in Table 2-23 indicate that Amtrak ridership in Louisiana continued upward in FY 2012, increasing 5% from the previous year to over 258,000 riders. The major increase was in New Orleans, where over 12,000 more boardings and alightings were reported.

2.2.4.2 Financial Performance

In FY 2012, the *City of New Orleans*' revenue covered 51.9% of its operating costs. This ratio is commonly known as the fare box recovery ratio. The figure for the *Crescent* was somewhat lower at 46.6%, while the *Sunset Limited's* was 24.3%. This poor result reflects the less competitive nature of tri-weekly service.

For the same time period Amtrak's overall long-distance services generated a 49.6% fare box recovery. Thus, it appears that two of the three long-distance trains serving Louisiana generate similar financial results as the Amtrak long-distance network as a whole.

2.2.4.3 On-time Performance

Amtrak defines On-time Performance (OTP) as the total number of trains arriving on-time at a station divided by the total number of trains operated on that route. A train is considered on-time if it arrives at the final destination within an allowed number of minutes, or tolerance, of its scheduled arrival time. Trains are allowed a certain tolerance based on how far they travel.

OTP Annual Trend

The overall OTP for all Amtrak long distance routes in FY 2012 was 77%. In FY 2012 the *Crescent* averaged 80% OTP, while the *City of New Orleans* averaged about 83%. The *Sunset Limited* averaged 96.2% OTP. All of these represent an increase compared to the previous year. A consistent and high on-time performance makes the rail service more attractive to riders, especially those traveling shorter distances.

Cause of OTP Delays

Causes for Amtrak train delays can be attributed to a number of reasons including the host railroad, Amtrak itself, or other delays such as grade-crossing collisions. **Table 2-24** shows the three leading causes of delay by percentage of delay minutes for routes through Louisiana in FY 2012. These represent the key reasons for delays that negatively impact OTP.

Table 2-24: Amtrak Causes of Delay to Trains in Louisiana, FY 2012

Cause of Delay	Route		
	<i>Crescent</i>	<i>City of New Orleans</i>	<i>Sunset Limited</i>
Train Interference	26.2%	31.4%	24.3%
Track and Signals	9.5%	19.6%	9.9%
Operational	8.6%	4.5%	8.7%
All Other Delays	55.7%	44.5%	57.1%

Source: Amtrak

- **Train interference delays** are related to other train movements in the area. These can be freight trains as well as other Amtrak trains.
- **Track and signal delays** are related to the railroad infrastructure and/or maintenance work being done on the tracks or signaling systems. This includes delays from reduced speeds to allow safe operation due to the track problems.
- **Operational delays** are related to equipment turning and servicing, engine failures, passenger train holds for connecting trains and buses, crewing, and detours.
- **All other delays** could include delays caused by the weather and non-railroad third-party factors such as customs and immigration, a bridge opening for waterway traffic, police activity, grade- crossing accidents or loss of power due to a utility company failure.

2.2.5 Public Financing for Rail Projects

Louisiana has utilized both federal and state transportation funding programs where rail infrastructure improvements were eligible and appropriate. The following is a short summary of state and federal rail funding resources utilized over the recent past.

2.2.5.1 Louisiana Public Rail Funding Programs

The following programs are available through state and other public agencies for rail-related financial assistance.

2.2.5.2 Louisiana Transportation Trust Fund

The Transportation Trust Fund was established in 1990. It is a permanent fund into which all of the receipts received in each year from all taxes levied on motor fuels are deposited. By other legislative

acts, the receipts from automobile license registrations and renewals and sales taxes on aviation fuels are also deposited into the fund.

Although the enabling legislation for the fund does not include eligibility for rail projects, highway-related uses such as grade crossing eliminations and providing the matching share for federal grade crossing improvement funding are eligible uses.

2.2.5.3 DOTD Port Construction and Development Priority Program

The Port Construction and Development Priority Program, created in 1989, was established to improve the infrastructure of Louisiana ports and harbors, promote economic development, provide jobs, minimize congestion, improve safety and reduce highway maintenance costs. Program funds can be used for the construction, improvement, capital facility rehabilitation and expansion of publicly owned port facilities including intermodal facilities, and maritime-related industrial park infrastructure developments. Projects such as wharves, cargo handling capital equipment, utilities, railroads, primary access roads and buildings which can be shown to be an integral component of any proposed port project are eligible.

The program is funded by the Transportation Trust Fund and provides 90% of eligible construction costs with local sponsors responsible for providing 10% of construction costs plus engineering costs. The program is administered by DOTD's Intermodal Division.

2.2.5.4 Department of Economic Development Rapid Response Program

This fund, administered by the Louisiana Department of Economic Development, has been utilized to secure the infrastructure improvements necessary to relocate industries to the State. Recent projects have included the expansion of a rail spur to increase rail shipment capacity and services to a new paper manufacturer in Denham Springs.

2.2.5.5 State and Locally Sponsored Rail Funding

Specific rail projects are funded from the state's annual capital construction program which provides funding for transportation projects around the state. In recent years Capital Outlay funding has been utilized to develop strategic rail projects. Louisiana is also a proponent of public-private partnerships with regard to the financing of rail capital projects. The projects listed below provide examples of rail projects that typically benefit rail operating efficiency and contribute to economic development within the state.

- Globalplex in St. John the Baptist Parish received \$1.35 million in State Capital Outlay funding for a rail siding;
- The Agri-Industrial Park at Lacassine in Jefferson Parish received \$500,000 through the Capital Outlay fund and an additional \$800,000 which was raised by farmers, landowners and other investors for a rail loading facility;
- The Port of South Louisiana in St. Charles Parish received an \$8.3-million budget appropriation by the State Legislature for a rail spur capable of holding 240 rail cars for area industries and a rail connection between the Kansas City Southern Railway and Canadian National Railway;
- The Port of Lake Charles is constructing a new export grain terminal, which includes an upgraded rail connection to a new bulk grain elevator, through a combination of public and private sources. The state is providing \$12 million in Capital Outlay funds to upgrade rail

facilities as well as an additional \$6 million through the Port Priority Program; and the Port of Lake Charles will invest \$4.1 million to support the project. Union Pacific Railroad will provide up to \$6 million in rail infrastructure improvements;

- The rail system within the Port of Shreveport-Bossier was expanded to approximately 13 miles of track as part of a project funded through Port Authority's bonds; and,
- The New Orleans Rail Gateway Program is studying potential improvements to the flow of rail traffic to increase public safety in the New Orleans Metropolitan area through a public-private partnership using federal, railroad, local and state study funds.

2.2.5.6 Federal Rail-related Programs and Funding

In 2008, the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) and related appropriation bills provided funds directly to states for rail intercity passenger investments. In early 2009, the American Recovery and Reinvestment Act (ARRA) also provided flexible transportation funding to states for rail capital projects as well as funding for passenger rail development.

The following sections describe these programs and federal budget appropriations specifically available for rail assistance as well as programs that may be eligible for selected rail-related applications.

2.2.5.7 PRIIA Rail Capital Assistance Programs

This legislation authorized over \$13 billion between 2009 and 2013 for Amtrak and promoted the development of new and improved intercity rail passenger services. The act also established an intercity passenger rail capital grant program for states. States are required to identify passenger rail corridor improvement projects in their State Rail Plans.

PRIIA established three new competitive grant programs for funding passenger rail improvements. Each of the three programs provided 80% federal funding with a required 20% non-federal match.

- ***Intercity Passenger Rail Service Corridor Capital Assistance Program*** - This program was intended to create the framework for a new intercity passenger rail service corridor capital assistance program. The program authorized USDOT to use appropriated funds to provide grants to assist in financing the costs of facilities, infrastructure, and equipment necessary to provide or improve intercity passenger rail transportation. States or groups of states, interstate compacts, and public intercity passenger rail agencies established by states are eligible for these grants. In addition, to be eligible for funding under this program, projects must be included in a State Rail Plan approved by the FRA.

Existing or proposed intercity passenger services are eligible under this program.

- ***High-Speed Rail Corridor Development Program*** - PRIIA also authorized \$1.5 billion annually to establish and implement a high-speed rail corridor development program. Funding is restricted to projects intended to develop the 11 federally-designated high-speed corridors for intercity passenger rail services (not including the Northeast Corridor) that may reasonably be expected to reach speeds of at least 110 miles per hour.

The Gulf Coast Rail Corridor from Houston, through New Orleans to Mobile and Atlanta, was designated a High-Speed Corridor by USDOT in 1998 and is eligible for funding under this program.

- ***Congestion Grant Program*** - This PRIIA program authorized \$325 million annually for grants to states, or to Amtrak in cooperation with states, for financing the capital costs of facilities, infrastructure, and equipment for high-priority rail corridor projects necessary to reduce congestion or facilitate intercity passenger rail ridership growth.

As noted, funding for these authorized programs associated with PRIIA must be appropriated annually. The actual PRIIA appropriation levels approved by Congress are discussed below.

2.2.5.8 U.S. Department of Transportation Budget Appropriations

Federal funding authorized under PRIIA or other authorization programs must be appropriated under annual budget or other legislative bills.

USDOT's last budget appropriation for the high-speed rail state grant program was for Federal Fiscal Year (FFY) 2010 (October 1, 2009 through September 30, 2010) and provided \$2.5 billion of funds authorized under PRIIA. Funds were provided to states, on a competitive basis, up to 50% of the capital cost of improving intercity rail passenger service.

Previous USDOT appropriation acts also provided funding that could be utilized for intercity rail passenger improvements under similar terms. The FFY 2009 USDOT Appropriations Act provided \$90 million to states. The FFY 2008 USDOT Appropriations Act provided \$30 million to states. Up to 10% of the funding available under these appropriations was available for rail corridor planning grants.

No appropriations for high speed rail grants were included in the FFY 2011 through 2013 budgets.

No rail passenger improvement projects within Louisiana under the PRIIA programs described above have received federal grants under past USDOT budget appropriations.

2.2.5.9 American Recovery and Reinvestment Act (ARRA)

As a result of the economic recession of 2008, the federal government approved the ARRA (Public Law 111-5) in February 2009 to stimulate the economy partly through the funding of infrastructure projects that could be initiated in the short term. Programs that could be utilized for rail-related projects under ARRA are described below.

- ***Flexible Highway Program*** - This program provided states a total of \$27.5 billion of flexible highway funding for surface transportation improvements including rail improvements. Eligibility criteria included projects being "shovel ready" for early implementation. Under this program, the New Orleans Public Belt Railroad requested and received \$214,000 to help fund the installation of idler reduction equipment to seven locomotives in its fleet.
- ***Intercity Passenger Rail/High Speed Rail Program*** - This program provided \$8 billion of High-Speed Intercity Passenger Rail funding to "jump start" intercity passenger rail improvements authorized under PRIIA. The federal share of costs was 100%, and proposed projects were not required to be included in a State Rail Plan. Louisiana has not requested funding under this program.

- **Transportation Investment Generating Economic Recovery Discretionary Grants Program (TIGER)** - The TIGER grant program allowed local and state governments to apply for \$1.5 billion of discretionary funding. Grants were eligible for capital investment in rail, highway, bridge, public transportation, and port projects and awarded by USDOT on a competitive basis. To-date, USDOT has held five rounds of TIGER applications since 2010. A \$16.5 million grant was awarded to the Port of New Orleans under this program to construct a freight rail terminal and finance other improvements to support better cargo operations.

2.2.5.10 Federal Grade Crossing Hazard Elimination Program

Under this program, established in 1999, public and private highway at-grade crossings along designated High-Speed Rail corridors are eligible for to receive funding for a number of hazard elimination activities including crossing closure, crossing consolidation or grade separation, the installation of improved warning devices or advanced train control systems, and other related project development and engineering activities. The federal share of costs under the program may be up to 100% of total costs. Under this program, the Gulf Coast Corridor has received approximately \$8 million since the inception of the program. Of these funds approximately \$2.5 million was assigned to projects in Louisiana.

2.2.5.11 Federal Surface Transportation Rail-Related Programs

Federal transportation funding to states is periodically authorized through the Federal Surface Transportation Acts. Transportation funding is provided to states through apportionment by formula or discretionary funding for various programs.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, commonly referred to as SAFETEA-LU, was passed in 2005 and served as the transportation authorization bill for the nation's surface transportation program until July, 2012.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was passed into law in July, 2012 and authorizes funding from July through September, 2012 and for FFY 2013 and 2014 (October 1, 2012 through September 30, 2014). This act consolidated a number of the formerly separate highway-related programs included in SAFETEA-LU. It also establishes a National Freight Policy and requires the identification of a National Freight Network. Both SAFETEA-LU and MAP-21, however, had similar programs relative to rail-related funding.

The following is a brief description of rail-eligible programs available through these Federal Surface Transportation acts and Louisiana's participation where applicable.

- **Highway Safety Improvement Program** - This program is a core federal-aid funding program with the goal of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. Funding from this program is set aside for Louisiana's Highway-Railway Safety Program with the purpose of reducing the number of fatalities and serious injuries at public highway-railway crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. The federal funding share for this program is 90%. Louisiana receives approximately \$8 million annually through this program for use in both grade crossing safety improvement and grade separation projects.
- **Rail Line Relocation and Improvement Capital Grant Program** - This program provides financial assistance for local rail line and improvement projects. 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, is eligible. The federal share for these funds is 90%, not to exceed \$20 million.

Louisiana has applied for and received a number of grants under this program as follows:

- The Port of Alexandria received \$487,000 for construction of a rail spur.
- The Greater Ouachita Port received \$2 million for the extension of a rail spur.

- ***Rail Rehabilitation and Improvement Financing (RRIF)*** - This program provides loans and credit assistance to both public and private sponsors of rail and intermodal projects. Eligible projects include acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities. Direct loans can fund up to 100% of a capital project with repayment terms of up to 25 years and interest rates equal to the cost of borrowing to the government. A total of \$35 billion was authorized for this program, of which \$7 billion was directed to short line and regional railroads.

Eligible borrowers include railroads, state and local governments, government sponsored authorities, corporations, and joint ventures that include at least one railroad. Louisiana railroads and other public agencies are eligible to apply for loans under this program.

2.2.5.12 Federal Surface Transportation Programs with Selected Rail Applications

In addition to the above programs, a number of additional programs, although primarily intended for highway use, are eligible for rail projects at the discretion of states and with the approval of the administering federal agency. These programs include:

- ***National Highway System Program*** - This program can be utilized to improve designated highway intermodal connectors between the National Highway System (NHS) and intermodal facilities, such as truck-rail transfer facilities. The federal share of NHS funding is 80%.
- ***Congestion Mitigation and Air Quality Improvement Program*** - This program funds transportation projects and programs that improve air quality by reducing transportation-related emissions in non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter. Examples of Congestion Mitigation and Air Quality (CMAQ)-funded rail projects include the construction of intermodal facilities, rail track rehabilitation, diesel engine retrofits and idle-reduction projects in rail yards, and new rail sidings.

CMAQ funding decisions in nonattainment areas are made by metropolitan planning organizations, and funds are distributed by DOTD. The federal matching share for these funds is 80%.

- ***Surface Transportation Program*** - The Surface Transportation Program (STP) is a general grant program available for improvements on any Federal-Aid highway, bridge, or transit capital project. Eligible rail improvements include lengthening or increasing vertical clearance of bridges, crossing eliminations, and improving intermodal connectors.

Project funding decisions are made by DOTD with approval from the FHWA. The federal share for these funds is 80%.

- **High Priority Projects** - This program provided designated funding over a five-year period for 5,091 projects identified in SAFETEA-LU. Though primarily highway-related, some projects were rail-related. Rail-related projects awarded funding in Louisiana were as follows:
 - \$160,000 to upgrade highway crossings at Madison St. in the City of Gretna;
 - \$1.6 million for the New Iberia rail grade separation; and,
 - \$800,000 for the elimination of highway-rail grade crossings along the Louisiana and Delta Railroad.

High Priority Projects funding was not made available in MAP-21.

- **Transportation Alternatives Program** - This program, which replaced the SAFETEA-LU Transportation Enhancement Program, offers funding opportunities to expand transportation choices and enhance the transportation experience through twelve eligible activities related to surface transportation. Rail related eligible activities include the rehabilitation of historic transportation buildings or facilities, the preservation of abandoned rail corridors, and the establishment of transportation museums. The federal share of project costs is 80%.
- **Private Activity Bonds** - SAFETEA-LU established a new financial assistance program that provides up to \$15 billion in private activity bonds for transportation infrastructure projects. States and local governments are allowed to issue tax-exempt bonds to finance projects sponsored by the private sector. Eligible projects include privately owned-or-operated highway and rail-truck transfer facilities.
- **State Infrastructure Banks (SIBs)** - This program allows all states to set aside 10% of highway formula grants to establish revolving funds that can be used to provide loans and other credit tools to public or private sponsors for eligible transportation projects. Multi-state SIBs may also be utilized to fund projects that cross jurisdictional boundaries. States must provide 20% of the capitalization amount, and debt must be repaid within 30 years.
- **Projects of Regional and National Significance** - Projects of National and Regional Significance (PNRS) improve the safe, secure, and efficient movement of people and goods through the U.S. to improve the national economy. Twenty-five projects were designated in SAFETEA-LU. Evaluation and rating guidelines have been established to determine future project funding. An example of the use of this funding source for a rail-related project is the relocation of the El Paso, TX rail yard to Santa Teresa, NM.

2.2.5.13 Other Federal Programs Available for Rail-Related Funding

In addition to transportation programs available under the Transportation Authorization bill, other programs are administered by federal agencies for which rail-related capital projects are eligible. These programs include:

U.S. Department of Commerce Economic Development Administration

The U.S. Department of Commerce provides Economic Development Administration (EDA) grants for projects in economically distressed industrial sites that promote job creation or retention. Eligible projects must be located within EDA-designated redevelopment areas or economic development centers. Eligible rail projects include railroad spurs and sidings. EDA also provides disaster recovery grants.

Grant assistance is available for up to 50% of the project, although EDA could provide up to 80% for projects in severely depressed areas.

Past rail-related EDA grants to Louisiana have included the following:

- \$1.0 million to the Greater Baton Rouge Port Commission to help rebuild a vital 2.5-mile rail line serving the Inland Rivers Marine Terminal that was severely damaged by flooding in 2011; and
- \$2.0 million to the Lake Providence Port Commission and the Southeast Arkansas Economic Development District to rehabilitate an inoperable rail line of the North Louisiana Arkansas Railroad's line between Lake Village, AR and Lake Providence damaged by storms in 2011.

U.S. Department of Agriculture Programs

The U.S. Department of Agriculture (USDA) Community Facility Program and Rural Development Program provide grant or loan funding mechanisms to fund construction, enlargement, extension, or improvement of community facilities providing essential services in rural areas and towns. Grant assistance is available for up to 75% of the project cost.

Eligible rail-related community facilities include transportation infrastructure for industrial parks and municipal docks.

Railroad Track Maintenance Credit Program

This program was originally authorized within the Internal Revenue Code in 2005 to provide tax credits to qualified entities for an amount equal to 50% of qualified railroad maintenance expenditures on railroad tracks owned or leased by Class II or Class III railroads through 2007. The maximum credit amount allowed was \$3,500 per mile of track.

The Emergency Economic Stabilization Act of 2008 extended the tax credits through December 31, 2009 and was further extended through 2011 as part of the federal income tax extensions passed in late 2010. The tax legislation approved by Congress and signed by the President on January 2, 2012 continues the tax credit program, making it retroactive to January 1, 2012 and expiring at the end of 2013.

A number of short line railroads operating in Louisiana have taken advantage of this program.

2.2.5.14 Louisiana Rail Funding Proposals

The 2003 Louisiana Statewide Transportation Plan provides a number of recommendations regarding public financial assistance for the State's rail system. These recommendations include:

- Educate the state's Congressional delegation on the need for funding a federal rehabilitation grant and loan program benefitting the state's small railroads;
- Help the state's small railroads secure the grants and loans they may need from existing and future federal assistance programs; and,
- Establish state funding for railroads. A level of \$3-5 million per year was recommended to be utilized primarily to enable small railroads to handle heavier (286,000 pounds) total car weights, for other improvements, and to match federal passenger rail funds.

Potential legislative proposals regarding rail-related funding in Louisiana are under consideration such as the following.

Rail Infrastructure Improvement Program

Similar to rail improvement programs administered in other states, this program has been proposed for rail infrastructure improvements to, among other things, upgrade short line railroads to the standard 286,000-pound carload capacity or to extend tracks to serve additional industries. Projects benefitting Class I railroads would also be eligible for state support. The sponsoring entity could be a port or short line railroad, and the project must demonstrate a compelling public benefit. This program would be administered by the Rail Section of the Intermodal Division and would have a budget of \$10-25 million per year

2.2.5.15 Funding Challenges

As noted in Chapter 1, state funds cannot be used to the advantage of private enterprises. This prohibition is a provision of the state's constitution. Accordingly, no state funds are used to assist private railroads with projects unrelated to DOTD's mission of maintaining public transportation, roadways, bridges, canals, select levees, floodplain management, port facilities, commercial vehicles, and aviation which includes 69 airports in Louisiana.

DOTD will, however, assist private railroads, particularly short lines, to obtaining federal funding for their improvements.

2.2.6 Safety and Security Programs in Louisiana

Rail safety has historically been and continues to be a priority for the railroads and DOTD. Safety has potential impacts on the general public and the efficiency of rail operations. Although the major railroads have long had their own police and security forces, the focus of rail security is more recent, with an emphasis on the potential threat of terrorists using the rail mode to disrupt transportation in general or to harm large numbers of citizens.

A number of federal and Louisiana state agencies, in concert with railroads and rail operators, continue to make progress with regard to rail safety and security. The following is a summary of these issues and on-going activities in Louisiana.

2.2.6.1 Rail Accident History

Railroad incidents/accidents for the last full 10-year period (2002-2011) in Louisiana are summarized in **Table 2-25**. These accidents include train derailments, collisions and any accident involving railroad employees or trespassers that occur on railroad property and result in fatalities, injuries or property damage exceeding an amount established by FRA; and highway-rail grade crossing accidents or incidents. Non-fatal conditions are reportable injuries occurring to employees or trespassers. Because property damage-only accidents are included, there is no direct correlation between the number of fatalities/non-fatalities and the total number of accidents.

Table 2-25: FRA Reportable Railroad Incidents 2002-2011 in Louisiana

Incidents	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Incidents	389	353	426	335	367	333	298	224	259	260
Deaths	28	22	34	30	23	22	22	22	25	14
Injuries	214	174	226	178	210	180	160	133	163	176
Train Accidents	79	76	103	86	92	92	74	45	48	62
Deaths										
Injuries		2	1		2	1	8	1		
Highway-Rail Incidents	149	146	167	131	144	122	113	84	106	96
Deaths	12	15	23	20	8	14	15	12	13	8
Injuries	65	43	66	44	81	57	46	36	67	71
Other Incidents	161	131	156	118	131	119	111	95	105	102
Deaths	16	7	11	10	15	8	7	10	12	6
Injuries	149	129	159	134	127	122	106	96	96	105

A general downward trend can be observed in all three types of reportable incidents: train accidents, highway-rail accidents, and other incidents, which are other than train accidents or crossing incidents that cause physical harm to persons. Louisiana's decline in FRA reportable incidents mirrors that of the U.S. as a whole, as seen in **Table 2-26**.

Table 2-26: FRA Reportable Railroad Incidents 2002-2011 in All States

Incidents	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Incidents	14,403	14,370	14,523	14,311	13,803	13,934	12,948	11,238	11,580	11,186
Deaths	951	865	891	884	903	851	803	696	726	689
Injuries	11,103	9,264	9,194	9,550	8,797	9,667	9,059	8,014	8,348	8,149
Train Accidents	2,738	3,019	3,385	3,266	2,998	2,693	2,479	1,908	1,899	1,993
Deaths	15	4	13	33	6	9	27	4	8	6
Injuries	1,884	232	346	787	220	309	324	121	109	205
Highway-Rail Incidents	3,077	2,977	3,085	3,066	2,942	2,778	2,429	1,932	2,018	1,967
Deaths	357	334	371	359	369	339	290	249	257	245
Injuries	999	1,035	1,094	1,053	1,070	1,059	990	742	868	986
Other Incidents	8,588	8,374	8,053	7,979	7,863	8,463	8,040	7,398	7,663	7,226
Deaths	579	527	507	492	528	503	486	443	461	438
Injuries	8,220	7,997	7,754	7,710	7,507	8,299	7,745	7,151	7,371	6,958

2.2.6.2 Rail Safety

Rail safety requirements are provided through a combination of federal and state laws. Most safety-related rules and regulations fall under the jurisdiction of the Federal Railroad Administration (FRA), as outlined in the Rail Safety Act of 1970 and other legislation, such as the most recent Rail Safety Improvement Act of 2008. Many of FRA's safety regulations may be found in Title 49 Code of Federal Regulations Parts 200-299.

Rail passenger operations are subject to the same FRA safety standards with regard to track safety, operating practices, and other areas as are freight railroads. In addition, FRA has specific regulations regarding passenger equipment safety standards and passenger train emergency preparedness.

As passenger equipment technology improves, FRA's Railroad Safety Advisory Committee makes recommendations to FRA for proposed improvements to continually upgrade existing safety standards. FRA then issues the final rule at the conclusion of its rule-making process.

Rail safety issues generally fall into the following broad categories: employee safety, inspection and maintenance of track, signals, bridges and infrastructure, inspection of locomotives and cars, operating rules and operating practices, radio communications, control of drug and alcohol use, accident reporting, rail-highway grade crossing safety, passenger equipment safety standards, passenger train emergency preparedness, the movement of hazardous materials, the development and implementation of new technology, and other areas specific to the rail industry. The primary responsibility for enforcement of these federal regulations falls under FRA's jurisdiction.

In Louisiana, DOTD and other state agencies focus on grade crossing safety and safety inspection.

Highway/Rail Safety Program

The Highway/Rail Safety Unit of the DOTD is responsible for collecting data on all public highway-rail grade crossings in conjunction with the railroads and the Federal Railroad Administration. The unit is also responsible for administration of the Federal Highway Railroad Safety Program and other highway-related safety activities involving railroads. The key elements of the efforts are described in the following paragraphs.

- **Federal Highway Railroad Safety Program** - As administrator of the Federal Highway Railroad Safety Program, the Highway/Rail Safety Unit maintains an inventory of grade crossings in the state and evaluates its 2,900 public at-grade crossings on an on-going basis. Some \$8 million of federal funds are used annually for improvements at multiple public grade crossings in the state. Projects are prioritized on the basis of:
 - Estimated vehicular and train movements and speeds at each crossing,
 - History of incidents of rail and motor vehicle collisions at each crossing,
 - Status of existing warning devices at the crossings,
 - Public and railroad input pertaining to the crossings, and
 - “Engineering judgment.”
- **Highway/Rail Safety Review of State Highway Projects** - Apart from the administration of the improvement program funds, the unit, on an on-going basis, evaluates state highway improvement projects that involve crossing rail lines to ensure reasonable and appropriate warning devices and other safety improvements are incorporated into the projects.
- **Support of Operation Lifesaver** - Operation Lifesaver is a national, non-profit education and awareness program aimed at reducing collisions, fatalities, and injuries at highway-rail at-grade crossings. The organization has coordinators and programs in 49 states nationwide (Hawaii excluded). Louisiana Operation Life Saver (LOL), the state program, is funded by the Louisiana Highway Safety Commission and contributions from the railroads.

LOL promotes education, law enforcement, and engineering solutions aimed at enhancing safety at highway-rail at-grade crossings. While not formally involved in LOL activities, DOTD's Rail Safety Unit supports the program by attending quarterly meetings, addressing engineering issues when requested, and informing the LOL coordinator of DOTD planning with regard to grade crossing improvements.

- **Funding Needs** - As noted earlier, the Highway/Rail Safety Program spends \$8 million per year on improving crossing safety. Of this amount, approximately \$4 million comes from the Federal Highway Safety Program (formerly Section 130 funds). Some of the remainder is

obtained from other federal safety improvement funds not specifically earmarked for highways and another \$1 million is available for engineering. Over the last four and a half years the Rail Safety Unit has issued work orders for the railroads to make improvements at various public crossings throughout the state with an estimated total cost of about \$36 million.

To minimize the interface between the rail and highway systems and to reduce grade crossing improvement costs, the Highway/Rail Safety Unit has aggressively pursued crossing closures and they continue to be pursued along Class I railroads where reasonable alternate access is available.

- **Grade Separations** - As both railroad and highway volumes have increased DOTD began the Railroad Grade Separation Program in 2010. This program is dedicated to constructing grade separations at existing crossings where warranted. The Program is intended to eliminate at-grade highway-rail crossings that are resulting in collision incidents or roadway and rail delays and replace them with grade-separated crossings. Crossings can be identified as project candidates through various sources. Once a proposed grade separation meets the selection criteria, the crossing then becomes a project and is scheduled for construction letting as funding becomes available.

Louisiana Public Service Commission

RS 45§561 authorizes the Public Service Commission to participate in the Federal Railroad State Safety Participation Program (49 CFR Part 212). The PSC retains jurisdiction over the closure of private railroad crossings. The PSC does not have the authority, however, to require a railroad facility owner or operator to alter or cease rail operations.

Hazardous Materials

The Louisiana State Police's Emergency Services Division of the Transportation and Environmental Safety Section (TESS) provides Level A response capabilities. The State Police's HAZMAT Section directs trained State Police personnel who conduct inspections of all transport modes.

Positive Train Control

Positive train control (PTC) refers to technologies designed to automatically stop or slow a train before certain accidents occur. PTC is designed to prevent collisions between trains and derailments caused by excessive speed, trains operating beyond their limits of authority, incursions by trains on tracks under repair and by trains moving over switches left in the wrong position. PTC systems are designed to determine the location and speed of trains, warn train operators of potential problems, and take action if operators do not respond to a warning.

The Rail Safety Improvement Act of 2008 required railroads to place PTC systems in service by December 31, 2015 on Class I railroad routes with over 5 million gross ton miles per mile with commuter or intercity passenger operations or any amount of toxic/poison-by-inhalation hazardous materials. Positive train control requirements currently exclude Class II or Class III railroads which have no passenger service. However, trains of Class II and III railroads that operate on lines that must have PTC are also required to be PTC-equipped. Minor changes to the requirements have been made by FRA based on comments received from the railroad industry.

In general, the rail industry considers the 2015 deadline not achievable considering that approximately 60,000 miles of rail line will be affected at a proposed cost of \$12 billion over a 20-year period. Congress is now considering extending the implementation deadline, but has not yet done so.

As envisioned for near-term implementation, PTC will be an overlay to the traffic management systems in place on today's railroads, and will be aimed primarily at achieving safety benefits. For example, PTC safeguards will be integrated with existing Centralized Traffic Control (CTC) systems, whereby a dispatcher in a remote location directs trains by use of wayside signals over fixed train blocks between control points (only one train at a time can be in a train block). Because PTC will be an overlay system, the operational benefits to a railroad of PTC in the near term will be limited.

However, in the longer term, the work involved with implementing PTC will lay the foundations for dynamic train blocks, which will move with trains and ensure sufficient stopping distances based on train speed and weight characteristics. When achieved, the technology allowing for dynamic train blocks will provide operational benefits to rail carriers above and beyond the safety benefits. These include the promise of greater line capacity and reduced operating costs.

2.2.6.3 Rail Security

The focus of rail security has changed significantly over the past decade. In response to potential terrorist threats to the transportation system, new federal agencies have been established to oversee and provide assistance to ensure the security of transportation modes. The following addresses specific rail security issues and Louisiana's involvement in rail security procedures.

Federal and State Roles in Rail Security

The primary agencies responsible for security related to transportation modes in Louisiana are the US Department of Homeland Security and the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP). These agencies have addressed transportation security largely through identifying critical infrastructure assets, developing protection strategies for these assets, and developing emergency management plans.

The US Department of Homeland Security addresses rail system security through the following means:

- Training and deploying manpower and assets for high risk areas
- Developing and testing new security technologies
- Performing security assessments of systems across the country
- Providing funding to state and local partners

Railroads operating in Louisiana are eligible to apply to the Department of Homeland Security for Freight Rail Security grants.

The Association of American Railroads (AAR), working with Homeland Security and other federal agencies, has organized the Rail Security Task Force. This task force developed a comprehensive risk analysis and security plan for the rail system that includes:

- A database of critical railroad assets
- Assessments of railroad vulnerabilities
- Analysis of the terrorism threat
- Calculation of risks and identification of countermeasures

The private railroad sector maintains communications with the US Department of Defense, the US Department of Homeland Security, the USDOT, the Federal Bureau of Investigation, and state and local law enforcement agencies on all aspects of rail security.

The lead state agency for rail security in Louisiana is the GOHSEP. The agency maintains a Critical Infrastructure Protection Plan to augment current security and assist facilities deemed critical to the nation and state in reducing their vulnerabilities. Fundamental to the plan is a critical infrastructure list for the state.

Strategic Rail Corridor Network

The U.S. Military Surface Deployment and Distribution Command's Transportation Engineering Agency has identified the national Strategic Rail Corridor Network (STRACNET). The STRACNET is comprised of a 32,000 mile interconnected network of rail corridors and associated connector lines most important to national defense. Louisiana's STRACNET system is shown on **Figure 2-8**. In Louisiana, several key railroad lines throughout the state are included in STRACNET. In addition to providing mainline corridor throughput capability, these lines also provide access to major defense contractors and logistics sites critical to our national defense.

Figure 2-8: Louisiana Area STRACNET Map



2.2.7 Rail Transportation Impacts in Louisiana

2.2.7.1 Economic Impacts

Rail Activity Impacts

Rail service is essential to Louisiana's economy. While the basic provision of rail service generates a modest 2,930 *direct* jobs (8,810 total jobs including multiplier effects), rail freight users in the state generate a much greater 189,650 *direct* jobs. Combining the *total* rail freight and visitor (passenger visiting the state) users job impacts of 486,090 (inclusive of the 295,610 multiplier job impacts) with rail transport-services jobs yields a *total* rail-related employment impact of 494,900 jobs, with \$25.2 billion paid in income and total economic output of \$134.6 billion. The impact summaries by activity, measure, and type are summarized in **Table 2-27**.

Table 2-27: Total Rail Activity Impacts

Measure and Type	Transport Service			Transport User			Total		
	Passenger	Freight	Subtotal	Visitor	Freight	Subtotal	Pass/Visitor	Freight	Subtotal
Output¹									
Direct	\$42.3	\$882	\$924	\$49.3	\$76,213	\$76,262	\$91.6	\$77,095	\$77,186
Indirect	\$18.0	\$375	\$393	\$12.1	\$40,889	\$40,901	\$30.1	\$41,264	\$41,294
Induced	\$16.0	\$333	\$349	\$19.5	\$15,777	\$15,797	\$35.5	\$16,110	\$16,146
Total	\$76.2	\$1,590	\$1,666	\$80.9	\$132,879	\$132,960	\$157.1	\$134,469	\$134,626
Value Added^{1,2}									
Direct	\$22.7	\$473	\$496	\$32.2	\$19,285	\$19,317	\$54.9	\$19,758	\$19,813
Indirect	\$8.9	\$186	\$195	\$6.9	\$14,710	\$14,717	\$15.8	\$14,896	\$14,912
Induced	\$9.6	\$199	\$209	\$11.7	\$9,464	\$9,476	\$21.3	\$9,663	\$9,685
Total	\$41.2	\$859	\$900	\$50.8	\$43,459	\$43,510	\$92.0	\$44,318	\$44,410
Labor Income¹⁰									
Direct	\$13.4	\$280	\$293	\$19.7	\$11,193	\$11,213	\$33.1	\$11,473	\$11,506
Indirect	\$6.1	\$128	\$134	\$4.2	\$8,129	\$8,133	\$10.3	\$8,257	\$8,267
Induced	\$5.3	\$111	\$116	\$6.5	\$5,267	\$5,274	\$11.8	\$5,378	\$5,390
Total	\$24.8	\$518	\$543	\$30.4	\$24,589	\$24,619	\$55.2	\$25,107	\$25,162
Indirect Business Income¹									
Direct	\$0.7	\$15	\$16	\$3.4	\$1,348	\$1,351	\$4.1	\$1,363	\$1,367
Indirect	\$0.5	\$11	\$12	\$0.5	\$1,260	\$1,261	\$1.0	\$1,271	\$1,273
Induced	\$0.9	\$19	\$20	\$1.1	\$918	\$919	\$2.0	\$937	\$939
Total	\$2.2	\$46	\$48	\$5.0	\$3,526	\$3,531	\$7.2	\$3,572	\$3,579
Employment³⁰									
Direct	230	2,700	2,930	830	189,650	190,480	1,060	192,350	193,410
Indirect	210	2,470	2,680	100	150,330	150,430	310	152,800	153,110
Induced	250	2,950	3,200	180	145,000	145,180	430	147,950	148,380
Total	690	8,120	8,810	1,110	484,980	486,090	1,800	493,100	494,900

Source: CDM Smith, IMPLAN

¹ Millions of 2010 dollars

² Comparable with Gross State Product (GSP)

³ In FTE job-years

These rail-related impacts are also compared with state total employment, income, and gross state product (GSP) in **Table 2-28**. In summary:

- 494,900 jobs directly or tangentially affected by rail represent 19.5% of the 2.53 million jobs statewide (in 2010).
- \$25.2 billion earned by these employees represents 21.1% of Louisiana's total wage and salary income (\$119.1 billion in 2010).
- The combined value-added impact, \$44.4 billion, associated with the rail operations and rail users represents 23.1% of GSP (\$192.1 billion in 2010).
- And, the \$3.6 billion in indirect taxes associated with rail transport account for about 27.2% of total statewide indirect tax collections (\$13.2 billion).

The analysis demonstrates the huge effect of rail transport on the state's economy, and that a vast majority of the impacts pertains to those firms that use freight rail to transport goods and/or materials. In turn the resultant multiplier impacts associated with the indirect supplier impacts and the re-spending of income (both direct and indirect) is significant. However, such impacts are disbursed differently through the various industries depending on their direct versus supportive role within Louisiana's economy, as summarized in the following subsection.

Table 2-28: Total Rail Activity Impact Comparisons

Measure and Type	Transport Service			Transport User			Total		
	Passenger	Freight	Subtotal	Visitor	Freight	Subtotal	Passenger	Freight	Subtotal
Value Added as % of State GSP¹									
Direct	0.01%	0.2%	0.3%	0.0%	10.0%	10.1%	0.0%	10.3%	10.3%
Indirect	0.00%	0.1%	0.1%	0.0%	7.7%	7.7%	0.0%	7.8%	7.8%
Induced	<u>0.00%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.0%</u>	<u>4.9%</u>	<u>4.9%</u>	<u>0.0%</u>	<u>5.0%</u>	<u>5.0%</u>
Total	0.02%	0.4%	0.5%	0.0%	22.6%	22.6%	0.0%	23.1%	23.1%
Labor Income as % of State Income²									
Direct	0.01%	0.2%	0.2%	0.0%	9.4%	9.4%	0.0%	9.6%	9.7%
Indirect	0.01%	0.1%	0.1%	0.0%	6.8%	6.8%	0.0%	6.9%	6.9%
Induced	<u>0.00%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.0%</u>	<u>4.4%</u>	<u>4.4%</u>	<u>0.0%</u>	<u>4.5%</u>	<u>4.5%</u>
Total	0.02%	0.4%	0.5%	0.0%	20.6%	20.7%	0.0%	21.1%	21.1%
Indirect Business Tax as % of State Taxes³									
Direct	0.01%	0.1%	0.1%	0.0%	10.2%	10.3%	0.0%	10.3%	10.4%
Indirect	0.00%	0.1%	0.1%	0.0%	9.6%	9.6%	0.0%	9.6%	9.7%
Induced	<u>0.01%</u>	<u>0.1%</u>	<u>0.2%</u>	<u>0.0%</u>	<u>7.0%</u>	<u>7.0%</u>	<u>0.0%</u>	<u>7.1%</u>	<u>7.1%</u>
Total	0.02%	0.3%	0.4%	0.0%	26.8%	26.8%	0.1%	27.1%	27.2%
Employment as % of State Employment⁴									
Direct	0.01%	0.1%	0.1%	0.0%	7.5%	7.5%	0.0%	7.6%	7.6%
Indirect	0.01%	0.1%	0.1%	0.0%	5.9%	5.9%	0.0%	6.0%	6.0%
Induced	<u>0.01%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.0%</u>	<u>5.7%</u>	<u>5.7%</u>	<u>0.0%</u>	<u>5.8%</u>	<u>5.9%</u>
Total	0.03%	0.3%	0.3%	0.0%	19.1%	19.2%	0.1%	19.5%	19.5%

Source: CDM Smith, IMPLAN

¹ Compared to total Louisiana GSP of \$192.1 billion

² Compared to total Louisiana income of \$119.1 billion

³ Compared to total Louisiana taxes of \$13.2 billion

⁴ Compared to total Louisiana employment of 2.53 million

Total Job Impacts by Industry

A review of the total job impacts by industry indicates the greatest number of associated jobs exists in *Manufacturing*, followed by *Retail Trade*, and *Health & Social Services*. These industry job impacts are summarized by impact type in **Table 2-29** and discussed below.

Table 2-29: Total Rail Activity Job Impacts by Industry

Industry	Direct	Indirect	Induced	Total
Manufacturing	74,670	11,290	1,510	87,470
Retail trade	35,510	4,820	29,110	69,440
Health & social services	9,470	90	32,470	42,030
Accommodation & food services	11,080	5,650	17,260	33,990
Administrative & waste services	3,170	19,880	6,500	29,550
Other services	6,210	6,370	14,840	27,420
Ag, Forestry, Fish & Hunting	10,310	14,460	910	25,680
Professional- scientific & tech svcs	2,810	16,610	5,210	24,630
Construction	15,660	7,470	1,170	24,300
Transportation & Warehousing	6,990	13,960	2,990	23,940
Wholesale Trade	4,280	13,030	4,310	21,620
Finance & insurance	430	7,560	10,220	18,210
Real estate & rental	930	6,930	7,850	15,710
Mining	6,550	6,500	260	13,310
Management of companies	160	9,100	650	9,910
Arts- entertainment & recreation	900	1,200	4,000	6,100
Educational svcs	1,020	170	4,730	5,920
Information	750	2,980	2,100	5,830
Government & non NAICs	1,150	2,170	1,680	5,000
Utilities	1,360	2,870	610	4,840
Total	193,410	153,110	148,380	494,900

Source: CDM Smith

FTE job-years

- **Manufacturing** –The 87,470 total manufacturing related jobs associated with rail transport account for 18% of the total 494,900 related job impacts. Of these 87,470 jobs, the vast majority (85%, 74,670) are directly related to rail transport.
 - Statewide Share – Closer comparison of these manufacturing impacts indicates that the 74,670 direct rail-related jobs account for 53% of the total statewide manufacturing jobs. This clearly underscores the sector's extensive use of and reliance on rail transport.
 - Primary Commodities – The 35.1 million tons of inbound, outbound and intrastate *Chemicals or Allied Products* and *Petroleum or Coal Products* total account for 47% of total tonnage movements (see Section 2.2.2). Such movements are valued at \$50.5 billion (55% of total value). Direct rail-related employment impacts associated with the corresponding manufacturing (*Petroleum Production*, *Chemical Manufacturing*, and *Plastics & Rubber Production*) totals 35,360 jobs, which accounts for 93.7% of statewide sector jobs for those combined industries.
- **Retail Trade** – In sum, *Retail Trade* accounts for 14% of total employment related to rail. Direct retail-trade employment (35,510) comprises 51% of total retail trade industry

employment related to Louisiana rail activity (69,440). The other 33,930 jobs reflect indirect (i.e., supplier-related) and induced (income re-spending related) employment impacts.

- **Health & Social Services** – Conversely to the heavily-proportioned direct job share of total jobs for the preceding aggregate industries, direct *Health & Social Service* jobs (9,470) only account for 23% of the total 42,030 jobs related to Louisiana rail activity. The other 32,560 jobs primarily reflect the induced impacts associated with income re-spending.
- **Transportation & Warehousing** – Also of note, *Transportation & Warehousing* job impacts total 23,940. The 6,990 direct jobs include the 2,930 direct rail jobs (see Table 2-26); the other 4,060 reflect other transport related jobs stemming from inbound commodities used directly in the operations of transportation industries, such as refined petroleum products (i.e., gasoline), motor vehicle parts, tires, etc. Without the intermediate inbound products (e.g., tires, ships, railroad rolling stock, etc.), the transportation industries could not function.

Summary of Economic Impacts

The foregoing summary economic analysis clearly demonstrates that rail activities and services provide a vital role in Louisiana's economy. The associated employment, income, value added, output, and indirect business tax impacts span all industries and reach every region of the state. Key findings include:

- The impact of rail transport goes far beyond the 2,930 directly employed in the provision of rail transport. When the freight and visitor user impact activities and the indirect/induced effects are included, rail-related employment in Louisiana totals 494,900 jobs. These total jobs represent 19.5% of the 2.53 million total jobs statewide, as reported by the U.S. Bureau of Economic Analysis, inclusive of all types of employment¹.
- Manufacturing is perhaps the most rail-integrated industry, especially the chemical/petrochemical subsectors. Tracing commodity flows to industry output indicates that 74,670 direct jobs arise in industries that use rail to either ship finished goods/products or receive inputs via rail. These direct manufacturing jobs (excluding multiplier effects) account for 53% of manufacturing sector employment in Louisiana.
- If railroads did not accommodate demand, consignees and shippers could use other modes (i.e., truck, water, air, etc.) to transport freight. However, the use of other modes would likely entail higher transport costs (due to long transport distances, price, logistics, etc.), and could increase overall demand (and resulting handling costs) for all users of other modes (both the diverted rail users as well as current users). The long-term result would be a partial migration of industry away from Louisiana to other locations with relatively better rail accessibility, and better modal options/mix.

While it would be erroneous to conclude that all of these impacts are entirely and solely dependent on rail, and would disappear if rail completely disappeared, the findings do show that rail service facilitates business throughout the state. Specifically, these impacts highlight the magnitude of rail use by manufacturers across the state, as well as dealers, retailers, and others who transport materials,

¹ BEA reported 2010 base employment (i.e. wage and salary employment) of 1.98 million jobs. BEA statistics also showed proprietors employment (547,000), which includes farm and nonfarm self-employed individuals (i.e. not counted under base employment). Together, base and proprietors employment figures sum to 2.53 million jobs.

component parts, and products. In particular, the rail-related economic impacts are primarily associated with chemical and petro-chemical movements.

More detailed analysis of the economic impacts of freight and passenger rail services in Louisiana can be found in **Appendix B**.

2.2.7.2 Socio-environmental / Livability Impacts

Impacts associated with rail transport go far beyond the quantifiable jobs, income, output, etc. Other social-environmental impacts arise concerning how rail affects “livability” in Louisiana.

Risk Mitigating, Sustainable Land Use

As a result of the devastation from Hurricanes Katrina and Rita, some of it the result of construction in high risk areas, Louisiana undertook a major planning effort. The *Louisiana Speaks Regional Plan* was a comprehensive effort to guide the state to a safer, stronger future. The planning effort was driven by the human and financial cost of the hurricanes' destruction, the desire to avoid future catastrophes and risk of a loss of insurability in Southern Louisiana.

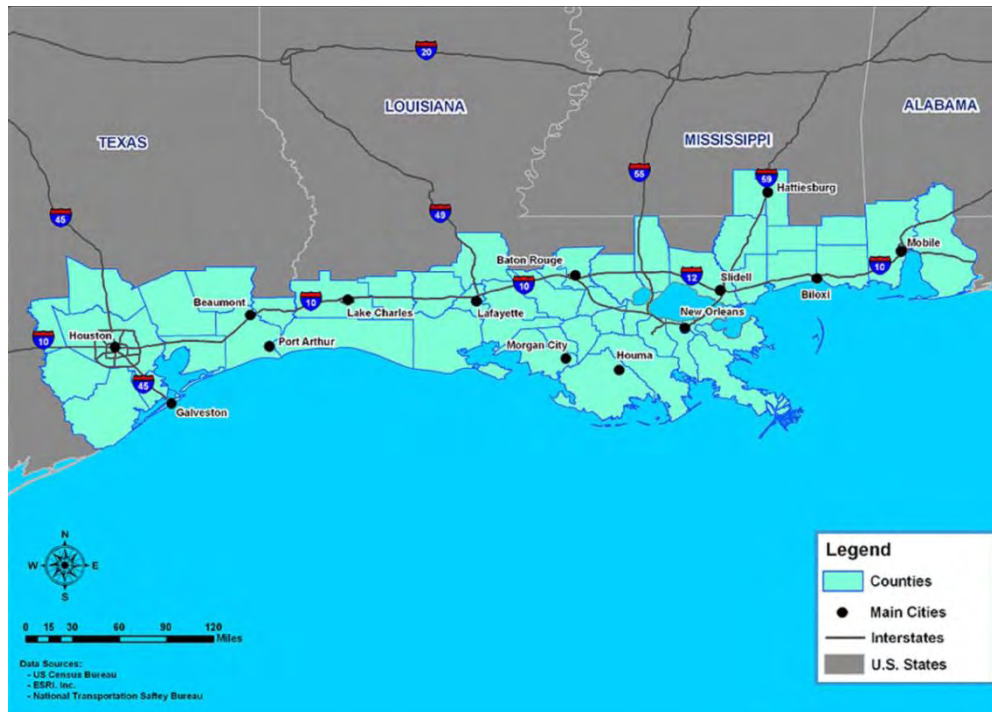
The consensus vision builds on a sustainable recovery that restores coastal wetlands, constructs new strategic levees and directs rebuilding and new construction away from high risk areas (i.e., flood plains and unprotected areas subject to storm surge) to areas in and around existing communities. The goal is to reduce risk and build sustainable communities able to withstand major weather events. The focus in and around these existing cities, which generally offer greater existing protection and are less expensive to insure, will result in additional infill construction and an increase in density around the historic central core. Supporting this effort will be additional investments in flood/storm surge protection, economic zones and a coordinated high-capacity regional transportation system to better support the increased development. Flood plains and wetlands will be expanded and enhanced to better protect these core development areas.

This strategy also helps to protect Southern Louisiana from the impact of rising sea levels. **Figure 2-9**, shown below, identifies the area on the Gulf Coast vulnerable to rising sea levels, changing precipitation patterns, and increasing storm frequency and severity.

Expanded rail transportation, with its capacity and ability to support more focused development, is a key tool in this effort.

Land Use and Economic Development Impacts

The rail mode is less land intensive than other modes. Each line of track offers far more capacity than a highway lane. New control systems often allow rail capacity to be expanded without the need to add additional track. Because of peaking and the use of a highway lane in only one direction, highway expansion generally means adding at least two lanes, while rail expansion often requires just one additional track or sidings. Also, many rail rights-of-ways are wide enough to allow tracks to be added without requiring adjacent land. Finally as rail traffic grows, lightly-used rail lines, once the main lines of predecessor railroads, could be upgraded to carry overhead freight. An example is the Meridian Speedway, linking Dallas/Fort Worth with Meridian, MS, and ultimately Atlanta and East Coast markets. The improved service on these upgraded rail lines could become the focal point for local industrial investment and improved agricultural transport making online communities and their businesses more competitive.

Figure 2-9: Climate Change Adaptation Concerns: US Gulf Coast

Source: Study area from, "Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I," a Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research (CCSP Report).

Rail improvements, both freight and passenger, can further economic development. More and faster passenger trains can increase mobility options for intercity travelers, commuters and the transit dependent. More efficient access to the freight rail system, such as new intermodal facilities and improved short lines (capable of handling 286,000-pound maximum loaded railcar weights) can lower transportation costs for shippers. Benefits resulting from passenger and freight rail investments can thus enhance the competitiveness of the state and the region. These benefits will serve to retain existing work forces and business, and attract new ones, bolstering economic development.

Energy Use and Costs

Numerous sources from a wide range of perspectives conclusively indicate that rail transport saves energy and, hence, is vastly more cost efficient than truck highway transport. These include:

- **U.S. Department of Energy** – According to the U.S. Department of Energy's 2012 *Transportation Energy Data Book* intercity rail passenger service is 6% more efficient than commercial aviation and 25% more efficient than the automobile². Amtrak onboard surveys indicate that the majority of rail passengers are traveling alone. This is because rail passenger service tends to be more economically attractive for the solo traveler than the automobile. As a key priority, focusing on shifting solo travelers from the auto to rail yields the greatest energy and greenhouse gas savings.

² In past years, rail was even more efficient than commercial aviation. The drop has resulted from higher load factors due to flight cuts and retirement of older aircraft. In 2008, for example, the same report showed intercity rail as 18% more efficient than the automobile.

- **Association of American Railroads** – The AAR has noted that in 2011 one gallon of diesel fuel moved a ton of freight by rail 469 miles – four times the efficiency of trucks. The U.S. Environmental Protection Agency estimates that for every ton-mile, a typical truck emits three times more nitrogen oxides and particulates than a train. Related studies suggest that trucks emit 6 to 12 times more pollutants per ton-mile than railroads, depending on the pollutant measured. The American Society of Mechanical Engineers found that 2.5 million fewer tons of carbon dioxide would be emitted into the air annually if 10% of intercity freight now moving by highway were shifted to rail.
- **American Association of State Highway Officials** – AASHTO noted that for each 1% of long-haul freight currently moving by truck, if moved by rail instead, fuel savings would be approximately 111 million gallons per year; and annual greenhouse gas emissions would fall by 12 million tons. If 10% of truck traffic went by rail – via intermodal movements involving both railroads and trucks – the cumulative estimated GHG reductions from 2007 to 2020 would be 210 million tons. Finally, rail lines can be electrified, yielding additional efficiencies from regenerative braking, and creating opportunities for alternative power sources. Thus shifting of traffic to the rail mode will reduce the energy intensity of transportation while somewhat insulating users from dramatic changes in fuel prices.
- **National Waterway Foundation** – This organization found that fuel usage and associated transport costs vary considerably given the various cargo carrying capacities and the different vehicles required to transport goods. For example, one gallon of fuel can transport one cargo ton approximately 150 miles by truck. Rail can transport the same ton of cargo 3.2 times as far, 478 miles (roughly similar to the AAR figure) on a gallon of fuel. As seen in **Table 2-30**, the energy transport costs of rail transport are approximately 30% those of truck, based on a \$4.00 price per gallon. The rail transport cost comparisons are even greater when one considers: (1) labor costs; (2) operation and management costs associated with both vehicles and the infrastructure; and (3) safety and environmental costs.

Table 2-30: Ton Transport Distance and Energy Cost per Gallon of Fuel

Mode	Ton-Miles	\$/Ton-mile
Tug Barge	616	\$0.0065
Rail Locomotive	478	\$0.0084
Truck	150	\$0.027

*National Waterway Foundation and Texas Transportation Institute;
<http://www.nationalwaterwaysfoundation.org/study/public%20study.pdf>
 Assume \$4.00 cost per gallon*

Environmental Damages and Costs

Comprehensive and easily digestible data on environmental impacts and costs by mode are difficult to find. Nonetheless, the various data sources indicate that freight transport by rail and water vessels generate significantly less environmental impacts and costs than truck transport. Such information follows the general efficiency trends regarding trip distance and costs per ton-mile; both rail and water transport modes are significantly more efficient than truck.

Regarding fine particle matter with a diameter of 2.5 microns or less (PM_{2.5}), the ton impact per million ton-miles of rail and water transport is approximately one-tenth of truck transport (0.0158 and 0.0128 versus 0.1126, respectively). Similarly, the nitrogen oxide (NOX) emission tons per ton-mile traveled for rail and water transport approximate a fifth of truck transport (0.5954 and 0.5171

versus 2.8549, respectively), as seen in **Table 2-31**. Combined, PM2.5 and NOX emissions generate environmental damages per million ton-miles of \$41,480 for truck transport, which is several times greater than rail (\$6,710) or water (\$5,610) transport damages.

Table 2-31: Environmental Damages and Costs per Million Ton-Miles, by Mode

	Trucks	Rail Locomotives	Waterborne Vessels
Ton Miles (Millions)¹	2,040,000	1,819,633	274,367
PM2.5 Emissions			
Tons (Total)	<u>229,754</u>	<u>28,690</u>	<u>3,520</u>
Tons per Million Ton-Miles	0.1126	0.0158	0.0128
Damages per Ton	<u>\$251,466</u>	<u>\$251,466</u>	<u>\$251,466</u>
Damages per Million Ton-Miles	<u>\$28,320</u>	<u>\$3,960</u>	<u>\$3,230</u>
NOX Emissions			
Tons (Total)	<u>5,824,060</u>	<u>1,083,320</u>	<u>141,865</u>
Tons per Million Ton-Miles	2.8549	0.5954	0.5171
Damages per Ton	<u>\$4,610</u>	<u>\$4,610</u>	<u>\$4,610</u>
Damages per Million Ton-Miles (\$000)	<u>\$13,160</u>	<u>\$2,740</u>	<u>\$2,380</u>
CO2 Emissions			
Tons (Total)	<u>468,702,800</u>	<u>52,690,500</u>	<u>5,286,600</u>
Tons per Million Ton-Miles	229.76	28.96	19.27
Damages per Ton ²	na	na	na
Damages per Million Ton-Miles (\$000)	na	na	na
Summary Damages per Million Ton-Miles²	\$41,480	\$6,710	\$5,610

Source: Surface Freight Transportation; A Comparison of the Costs of Road, Rail, and Waterways Freight Shipments That Are Not Passed on to Consumers; GAO, January 2011; <http://www.gao.gov/new.items/d11134.pdf>
Monetary values in 2010\$

¹Trucks and Locomotives reflect 2007 ton-miles, versus year 2005 for waterborne vessels

²Damages per ton not available

³Excludes CO₂ damages

Further man-made greenhouse gases include CO₂, methane, nitrous oxide and fluorinated gases. Of these, CO₂ is the dominant emission. Similar to the PM2.5 and NOX emissions, the impact of both rail and water freight transport is a fraction of truck transport.

Accident Rates and Costs

The rail mode is also one of the safest transportation modes. Each year more 30,000 deaths and 2 million injuries from highway collisions were reported by the National Highway Traffic Safety Administration. In 2010 more than 710 highway-related deaths were recorded in Louisiana. In addition to the overwhelming tragedy caused by death, there is also a cost associated with these losses. The economic cost of these collisions to the U.S. economy is more than \$200 billion – more than 2% of the U.S. Gross Domestic Product. Much of this cost is borne by the public at large either through public expenditures (law enforcement, medical, disability payments, etc.) or insurance premiums.

Per passenger-mile traveled rail transportation is exceptionally safe with much lower death rates than automobiles. As reported by the National Safety Council in 2011 the fatality rate for the automobile was 0.55 deaths per 100 million passenger miles compared to 0.13 for passenger rail. The expansion of passenger rail service can provide a much safer travel option.

Freight rail transportation is also very safe and, as reported by the Federal Railroad Administration, the multi-year trend is positive with all reportable accidents (derailments, fatalities, injuries, etc., on the national rail system) declining by more than a third between 2003 and 2012.

External costs associated with freight transport include accidents. Comparisons of fatalities and injuries to ton-miles indicate an even greater external cost savings benefit associated with rail and water transport versus that of truck. Average data between 2003 and 2007 suggest the average fatalities of rail transport per billion ton-mile of freight transport (0.39) to be 15% that of truck transport (2.54), as shown in **Table 2-32**. Even more dramatic, the 3.32 injuries per billion ton-miles of freight train transport are only 6% that of truck (56.05). On a cents-per-ton-mile basis the picture is mixed: rail costs can be range from one-tenth to twice that of truck. Still, notable industry and societal cost savings arise with the use of rail transport versus that of truck.

Table 2-32: Accidents and Costs per Billion Ton-Miles, by Mode

	Trucks	Trains	Waterborne
Accidents	5,069	683	7
Injuries	111,800	5,747	26
Ton-Miles (Billion)	1,997	1,739	587
Fatalities per Ton-Miles (Billion)	2.54	0.39	0.01
Injuries per Ton-Miles (Billion)	56.05	3.32	0.05
Costs per ton-mile (in 2010 cents)	0.11 to 2.15	0.24	na

Source: Surface Freight Transportation; A Comparison of the Costs of Road, Rail, and Waterways Freight Shipments That Are Not Passed on to Consumers; GAO, January 2011;

<http://www.gao.gov/new.items/d11134.pdf>

Note, figures represent averages between 2003-2007

Livable and Sustainable Communities

Livability can be thought of as a combination of various attributes which define how attractive a given place is to live. Researchers have found that the attributes associated with livability include clean air and water, safe streets, positive race relations, affordable homes, quality public schools, greenery and open space, uncongested roads and low taxes, among other things. The transportation system's ability to efficiently and safely move people and goods, without negatively impacting the environment in which it operates, plays a crucial role in how people view and rate the livability and sustainability of an area.

While rail generates pollution and noise that negatively affect communities, such effects are often less than those associated with a trucking alternative. Conversely, passenger rail transport generates positive effects, or benefits, that promote livable and sustainable communities. Further, freight rail promotes a community's livability and sustainability through market access. This section begins with a review of rail pollution and noise issues, and the associated mitigation methods. This is followed by discussion of the positive of passenger and freight rail benefits on local community livability/sustainability.

- **Pollution and Noise** - Train air pollution and noise deteriorate the quality of life of communities along rail lines. Regarding the former, it is important to note that diesel locomotives are getting ever more efficient, and they are burning cleaner diesel fuels. Also, railroads are implementing "genset" locomotives, mostly for yard work like switching and assembling trains. The classic diesel electric locomotive has one large diesel engine which generates electric power for the traction motors sitting atop wheel sets. However, a genset

locomotive has two or three smaller engine-generators that are programmed to start up only when needed. Thus, improvements in both the fuel and locomotives are working to mitigate the worst effects of train related air pollution.

One means to combat train horn noise is the implementation of railroad quiet zones. These are zones involving one or more highway-rail crossings where the locomotive engineer is not obligated to blow his horn approaching the crossing(s)³. The procedures whereby a community can implement a quiet zone are specified by the Federal Railroad Administration⁴. Typically, improvements need to be made at the crossings to enhance safety at the crossings. Improvements can include things like four-quadrant gates, medians on approaches along with gates at the crossings, street closures, etc. Once the improvements designs are reviewed by the FRA and implemented, a quiet zone can be established. After the implementation locomotive engineers will not blow their horns approaching the zone, except when they feel it necessary to rectify an unsafe condition, such as pedestrians traversing the crossing despite the gates and flashing lights. Quiet zones are generally implemented by the communities in which the zones exist.

- ***Passenger Rail and Sustainable Communities*** - Passenger rail stations provide major opportunities for focused growth, especially in urban areas. These stations can function as local connection points for other feeder modes and create downtown transportation hubs for the community. This pedestrian-friendly development pattern reduces fuel use, air pollution and greenhouse gas emissions. It also reduces urban sprawl by satisfying housing and business needs in a more efficient manner.
 - *Neighborhood Revitalization* – Many of the areas around rail stations are existing neighborhoods. Improved rail service can be a catalyst for the revitalization of these older neighborhoods and improving housing stock. This revitalization can improve the quality of life by bringing not only improved transportation but new retail and service providers to the neighborhood.

These station areas increase the value of adjacent property, attract increased investment in existing development, and encourage new projects on vacant or underutilized lands in the area, further contributing to the local economy. Reducing urban sprawl will reduce the pressure to develop farms, forests and wetlands. Also compared to adding additional highway lanes, expanding rail lines in rural areas will require little if any additional land.

Rail has had a role in turning around the blighted neighborhood surrounding Denver Union Station into a cultural destination, complete with major league sporting events, fine restaurants, and new commercial complexes. The blossoming residential area surrounding Los Angeles Union Station is another example. Certainly Denver and Los Angeles station areas could be reference points for NOUPT and its surrounding area.

- *Betterment of Public Health* – Transportation planning and design has a direct impact on community health, livability and sustainability. The nation's dependence on automobiles in metropolitan areas has resulted in more sedentary lives. The Surgeon General reports that over 60% of U.S. adults were overweight or obese. The focused growth around rail

³ Federal regulations specify that trains horns be sounded while trains approach and enter highway-rail crossings.

⁴ <http://www.fra.dot.gov/rpd/freight/1318.shtml>

stations foster communities where destinations are within easy walking or bicycling distance. The Surgeon General indicates that walking or cycling, key methods of access to rail stations, are great ways to build physical activity into a daily routine.

Public transit use is also associated with healthy behavior including higher rates of walking. A recent study concluded public transit users walk 8.3 more minutes per day on average compared to those who do not, leading to lower rates of obesity. These health implications further show rail's ability to contribute to a more livable environment and encourage healthier land use patterns. While less obvious for intercity riders, these benefits would be real for future Baton Rouge – New Orleans commuter rail riders as they would walk from NOUPT to work centers.

- *Enabling Multimodalism* – Rail transportation plays a prominent role in the overall statewide multimodal network. By increasing its ability to safely and efficiently move people and goods within the state, rail transportation can help support local, state and federal initiatives aimed at creating more livable communities. Passenger rail service can create a sustainable transportation option for Louisiana's residents, encourage compact, smart growth development, and help reduce the dependence on the automobile and reduce VMT. New intercity rail stations should be planned and designed to accommodate connecting local and regional transit, offer safe pedestrian and bicycle connections, include drop-off facilities and provide sufficient parking and good road access. Station communities and local transportation agencies play an important role in the success of these station areas. With new light rail connections, NOUPT is a good example of how a station can further multimodalism.
- ***Freight Rail and Sustainable Communities*** - Freight rail also plays a prominent role in the livability and sustainability of a community. The ability to efficiently transport goods and create access to economic centers is critical to the overall success of a region's economy. Time wasted due to transportation inefficiency and congestion has significant impacts on profitability and the ability to attract new business to a region.

The efficiency of rail freight is especially important in rural areas where agriculture, local industries and communities rely on freight shipping. Many communities have seen a loss or reduction in rail freight services in recent years. Improving, expanding and preserving the rail network can improve the competitive stature of local industries, agriculture and communities. A revitalized rail line can lower shipping costs, provide pricing power for local industries and agriculture vis-à-vis trucking, provide redundancy in the transportation network, and shield local industries and agriculture from predicted increases in the cost of fossil fuel.

Congestion Impacts

Increased freight rail activity can help replace some of the existing truck travel. However, the connection between the rail network and the truck network typically occurs at ports or intermodal facilities. These facilities are usually located away from highway and interstates, which are designed to appropriately handle these larger vehicles. As a result, this separation forces the local roadway system to function as the link between these facilities. Local streets often have more congestion due to traffic signals, poor turning radii, inadequate overhead clearances, and narrow bridges, making access to terminals difficult. Larger volumes of rail freight traffic can thus lead to increased congestion on local streets. Congestion degrades the efficiency of truck and rail carriers, which in turn reduces the quality

of service to shippers. Overcoming these barriers will require local commitment and support for improvements ensuring proper connectivity with minimal negative impact is in place.

An example of a project that, when completed, will mitigate roadway congestion is the New Orleans Rail Gateway. That project includes concepts for both grade separations and road closures. These will allow more fluid road conditions by eliminating delays due to trains.

2.3 The State's Existing Rail System: Trends and Forecasts

The purpose of this Section is to describe the trends that will impact the need for rail in Louisiana. Trends which impact both passenger and freight rail include; demographic and economic growth factors, transportation, and the future outlook by industrial sector. These factors all contribute to the projected demand and growth for both passenger and freight, although many of these factors are difficult to incorporate into demand forecasting. The following discussion provides a historic base for rail service in Louisiana, and identifies areas of Louisiana's future economy that will be transportation dependent.

Globalization and new technologies have transformed economies around the world, redefining the way businesses operate, challenging supply chains and transportation networks, and creating new customer opportunities in places that were previously inconceivable. To compete in this global marketplace, businesses must optimize every asset: workforce skills, competitively priced products, and reliable highway and freight rail transportation networks to ensure their customers receive quality goods and services when they expect them. As the needs of businesses continue to evolve and the importance of trade expands nationally and internationally, Louisiana companies are more dependent than ever on integrated, agile, and efficient multimodal transportation networks to sustain and enhance their competitive position in the marketplace.

2.3.1 Louisiana Demographic and Economic Growth

2.3.1.1 Population

In 2012 the population of Louisiana was 4,601,893, which ranked 25th among U.S. states. The state's population increased 1.5% over the last two years, compared with a 1.7% population growth rate for the U.S. as a whole. However, since 2000 the state's population has increased 3%. It is projected that the state's population will increase to 4,802,633 by 2030.⁵

The median age in the state is 36 years, below the national median age of 37.4 years. Almost 82% of the population over 25 graduated from high school, with 21.1% receiving a bachelor's degree or higher compared with 28.2% nationally.

2.3.1.2 Employment

In 2012, Louisiana's average annual employment totaled 2.0 million⁶. Employment is expected to increase to 2.3 million in 2022⁷. These figures include wage and salary workers, and do not include farm and nonfarm self-employed individuals.

⁵ Population and forecast data from U.S. Census.

⁶ www.laworks.net.

⁷ Ibid.

2.3.1.3 Personal Income

Louisiana workers earned total wages of \$78.3 billion in 2011, with average weekly earnings of \$815⁸.

2.3.1.4 Industrial Outlook by Sector

Appearing below are brief summaries of the outlook for industries that generate almost two-thirds majority of tons shipped by rail in Louisiana. The rail borne shipments of the five industrial noted sectors below comprise 88.8 million tons of shipments inbound, outbound, through and within Louisiana; or 73.5% of the 120.9 million tons shipped by rail in 2009. Forecasted growth rates of major commodities handled by rail in Louisiana for the 20-year period 2009 to 2038 are discussed below.

Chemicals or Allied Products

In aggregate terms, the largest commodity shipped is *Chemicals and Allied Products*. While mostly an outbound commodity, significant volumes are shipped outbound or through the state. Intrastate shipments are minor. Overall, chemical shipments in Louisiana are expected to grow at 1.2% over the 20-year period from 2009 to 2038 – a slightly lesser rate than an historic domestic growth rate of 2% per year.

BASF, a major chemical producer, reported in 2011 that it expects trends in chemical production, excluding pharmaceuticals, to achieve 2.2% growth in the U.S. in the current 2012-2014 period. The company pointed to the positive impetus resulting from the availability of large volumes of unconventional extracted natural gas (i.e., hydraulic fracturing) as a spur to growth of domestic chemical production⁹.

BASF's outlook is echoed by the American Chemistry Council (ACC), which reported in 2011, "The outlook for chemicals points to modest growth over the next several years and depends on strengthening domestic demand and an improvement in exports abroad... Exports were up nearly 11% to \$189 billion in 2011 and are expected to exceed \$230 billion in 2014."¹⁰

Coal

In Louisiana, *Coal* is shipped mostly through the state, though significant volumes are shipped inbound from other states. In the aggregate, *Coal* shipments in Louisiana are expected to decline slightly over the 20-year period from 2009 to 2038, though there may be some positive activity in the near term, driven by exports.

The U.S. Energy Information Administration (EIA) forecasts that U.S. coal production will increase in the three main coal producing regions: the Western Region, the Appalachian region, and the Interior region. Domestic production should reach 1,043.7 million tons in 2014, up from a projected 1023.2 million tons in 2013¹¹.

U.S. coal exports are expected to total 115.3 million tons in 2013, according to the EIA September 2013 *Short-Term Energy Outlook*. The figure represents a 900,000-ton increase compared with its August prediction of 114.2 million ton of exports.

⁸ Ibid.

⁹ www.report.basf.com/2011

¹⁰ news.thomasnet.com/IMT/2012

¹¹ www.eia.gov

The EIA did not provide a reason for the uptick, but said that economic weakness in Europe, slowing Asian demand, increased global supply and falling international prices continue to put downward pressure on U.S. exports, which totaled a record 126 million tons in 2012.

The agency said it expects 2014 coal exports to total 109 million tons. That forecast is 1 million tons higher than the 108 million tons of exports projected in August.

Farm Products

Farm Products cover the spectrum of agricultural products shipped by rail. In Louisiana, farm products are mostly inbound or they travel through the state. Outbound and intrastate shipments are relatively small. In the aggregate, rail borne *Farm Products* in Louisiana are expected to grow along with the domestic economy at 1.9% over the 20-year period from 2009 to 2038.

Nonmetallic Minerals

Nonmetallic Minerals is the second biggest inbound commodity, after chemical and allied products. Through-state shipments are about 30% of inbound shipments. Outbound shipments and intrastate shipments are relatively small.

Nonmetallic Minerals are those which do not yield new products on melting. Coal, salt, clay, marble are some examples. In this analysis, coal is considered under its own category.

In terms of aggregate rail shipments in Louisiana, *Nonmetallic Minerals* are anticipated to grow at 2.1% over the 20-year period from 2009 to 2038.

Food or Kindred Products

This grouping comprises a multitude of commodities including meat products, dairy products, canned and frozen projects, grain mill products, sugar, fats and oils, beverages, etc. In Louisiana, rail borne shipments of *Food and Kindred Products* are fairly evenly split between inbound, outbound and through-state shipments. Intrastate shipments are minor.

In the aggregate, Louisiana's rail borne *Food and Kindred Products* shipments are forecast to grow 2.4% over the 20-year period from 2009 to 2038.

2.3.2 Freight Demand and Growth

Louisiana rail freight flows in 2009 are analyzed by directional flow and commodity type. The 2009 *TRANSEARCH®* commodity movement database is used in the analysis, incorporating the U.S. Surface Transportation Board's (STB) rail Carload Waybill Sample.¹² Rail freight movement analysis for Louisiana indicates that 121 million net tons were moved in 2009 comprised of 1.9 million rail carloads with a total value of \$126.1 billion. Aside from the approximately 5% attributable to intrastate movements, the tons, carloads, and value were split roughly evenly among the three major directions of movement (i.e., inbound, outbound, and through). Projected rail freight growth through year 2038 is then presented by direction and commodity type.

This analysis also discusses rail freight corridors in Louisiana and relevant national rail freight corridors. Maritime port -rail connectivity issues are discussed as they are anticipated to grow in importance for the state to benefit from increased international trade. Changes to the rail-served trade

¹² The Waybill Sample is a stratified sample of carload waybills for all U.S. rail traffic submitted by rail carriers that terminate 4,500 or more revenue carloads annually.

from infrastructure changes such as the Panama Canal expansion, and the development of interstate rail freight corridors, are also analyzed.

2.3.2.1 Rail Freight Commodity Flows by Direction

Louisiana plays an important role in the nation's freight rail transportation. In 2009, Louisiana's railroads carried a total of 121 million net tons and moved 1.9 million carloads of goods, for a total value of \$126 billion (**Table 2-33**). While through traffic leads directional movements (45.6 million tons, 38% of total), both interstate inbound (37.4 million tons, 31% of total) and outbound (32.6 million tons, 27% of total) movements are significant. Aside from jobs with railroads, the through freight has little positive effect on Louisiana's economy. Most of the through traffic resulted from flows between the markets located in Southwest, Southeast and Mountain regions.

Table 2-33: Louisiana Rail Freight by Direction (2009)

Description	Tonnage		Carload		Value (\$mil)		Average Value (\$/ton)
	Amount	Percent	Amount	Percent	Amount	Percent	
Interstate Inbound	37,449,120	31%	563,997	30%	\$31,260	25%	\$835
Interstate Outbound	32,601,841	27%	565,623	30%	\$48,922	39%	\$1,501
Intrastate	5,220,169	4%	63,260	3%	\$7,149	6%	\$1,370
Through	45,606,813	38%	670,306	36%	\$38,720	31%	\$849
TOTAL	120,877,944	100%	1,863,185	100%	\$126,051	100%	\$1,043

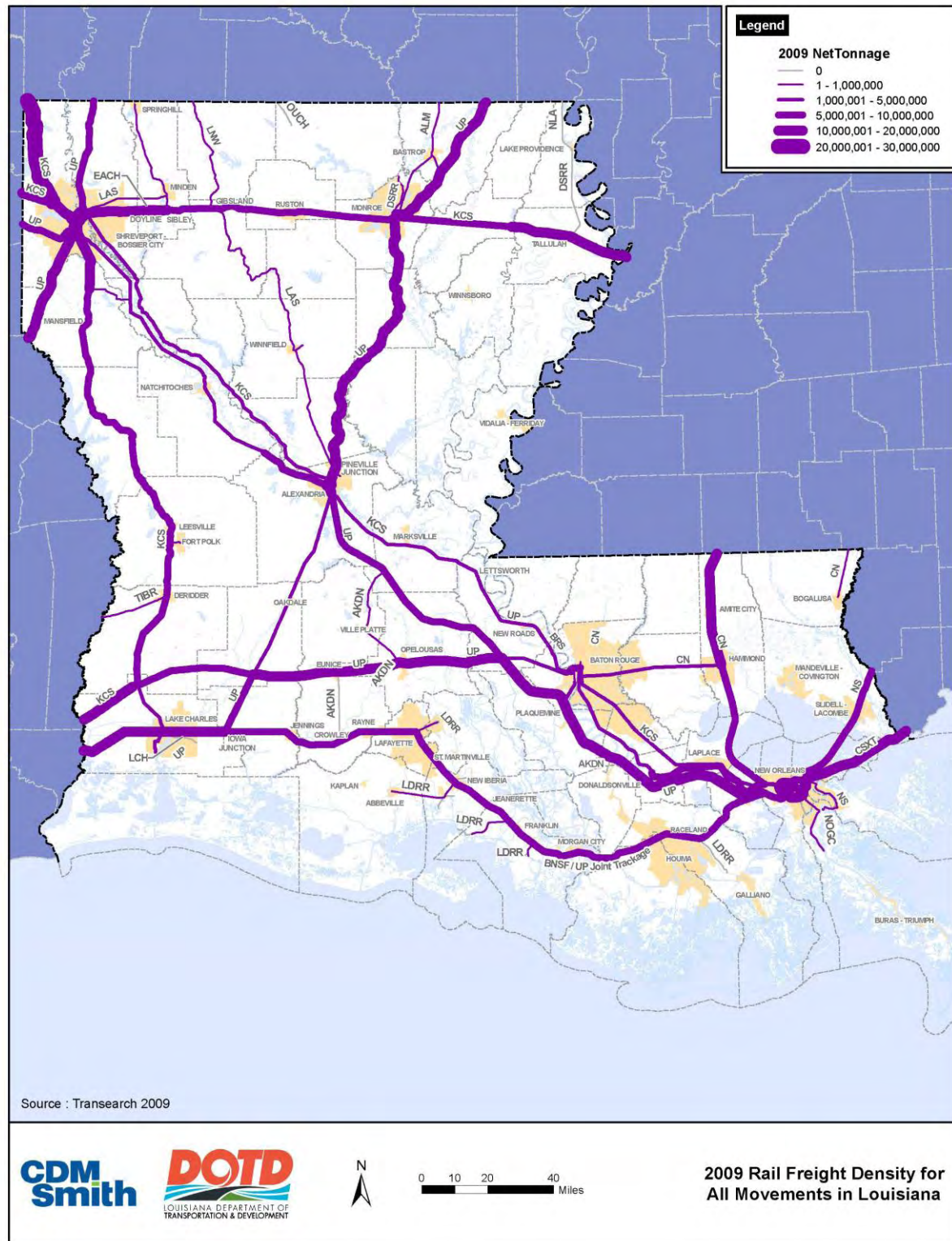
Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Inbound, outbound and interstate freight flows generate commerce in Louisiana. Outbound freight flows represent products mined or produced in Louisiana or imported through Louisiana that are railed to other states. Inbound freight flows represent commerce that is transported into the state for consumption or value-added processing or onward export. And, intrastate movements represent Louisiana economic activity or trade at both the origin and termination of the rail movement. Hence, inbound, outbound and intrastate freight flows facilitate commerce by creating employment opportunities for Louisiana's citizens.

Although the state received slightly more goods than it shipped out in terms of tonnage (4.8 million, 15%), the value of outbound goods was notably higher than the value of inbound goods (\$17.7 billion, 56%). Internal freight represents commodities that flow between counties within Louisiana. Such internal rail movements account for only 4% of the total rail tonnage.

Tonnage densities handled on Louisiana rail lines are shown in **Figure 2-10**.

Figure 2-10: Total State Rail Freight Density (2009)



Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Inbound Interstate Freight

Table 2-34 presents tonnage of Louisiana's 2009 inbound commodities, which totaled 37.4 million tons valued at \$31.3 billion. Principal inbound commodities include *Chemicals or Allied Products*, Nonmetallic Minerals, Farm Products, and Coal representing a combined 27.7 million tons or 74% of total inbound movements.

Table 2-34: Inbound Rail Freight Traffic by Major Commodities (2009)

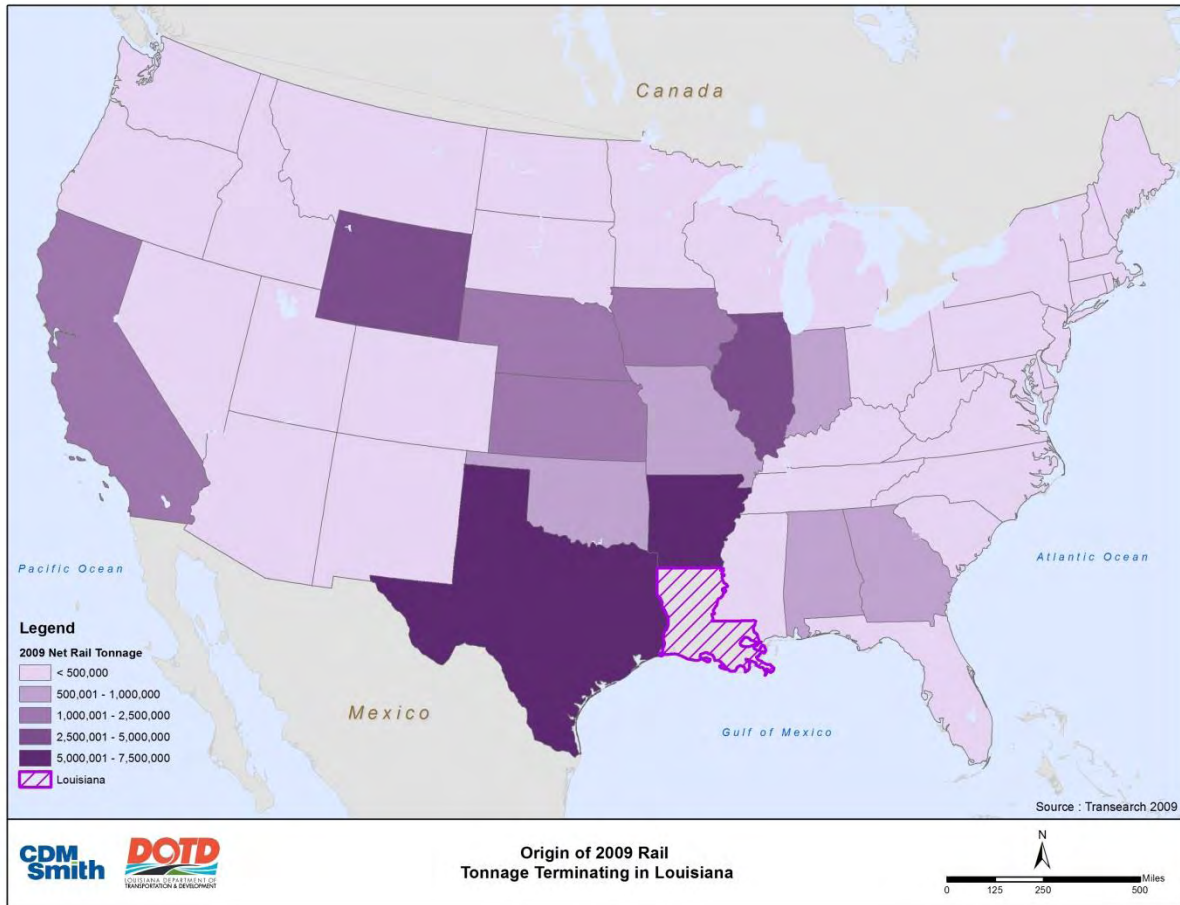
STCC	Description	Tonnage		Value (\$mil)		Average Value (\$/ton)
		Amount	Percent	Amount	Percent	
28	Chemicals or Allied Products	7,676,828	20.5%	\$9,768	31.2%	\$1,272
14	Nonmetallic Minerals	7,201,240	19.2%	\$68	0.2%	\$9
1	Farm Products	6,943,183	18.5%	\$1,456	4.7%	\$210
11	Coal	5,846,746	15.6%	\$200	0.6%	\$34
20	Food or Kindred Products	2,335,762	6.2%	\$1,167	3.7%	\$500
46	Mixed Shipments (Containers)	1,836,977	4.9%	\$8,528	27.3%	\$4,642
29	Petroleum or Coal Products	1,326,695	3.5%	\$1,111	3.6%	\$838
32	Clay, Concrete, Glass or Stone	1,096,599	2.9%	\$126	0.4%	\$115
37	Transportation Equipment	867,183	2.3%	\$5,912	18.9%	\$6,818
33	Primary Metal Products	538,379	1.4%	\$801	2.6%	\$1,488
	Other	1,779,529	4.8%	\$2,122	6.8%	\$1,193
TOTAL		37,449,120	100.0%	\$31,260	100.0%	\$835

Source: Prepared by CDM Smith based on Transearch Data for 2009.

However, value rankings for the top four inbound commodities differ significantly from their tonnage ranking. The principal commodity moved, *Chemicals or Allied Products*, was also the highest valued at \$9.8 billion, far surpassing the value of the next three highest commodity tonnage movements (totaling only \$1.7 billion). Also exhibiting a comparatively high value-to-weight ratio, the 1.8 million tons of *Mixed Shipments (Containers)* were valued at \$8.5 billion. Similarly, the 0.9 million tons of *Transportation Equipment*, valued at \$5.9 billion, generated the highest average value per ton (\$6,818).

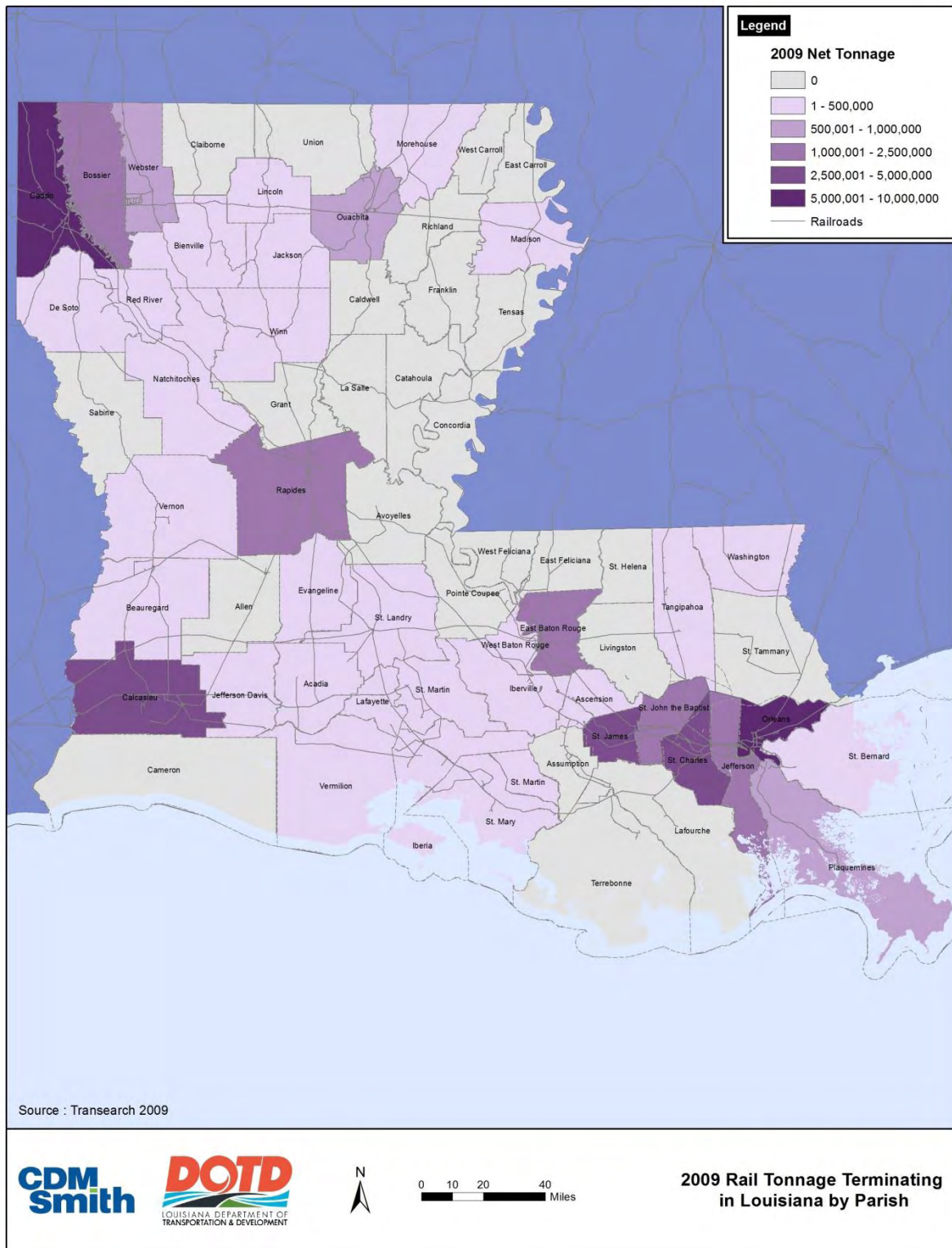
- Inbound Tonnage Origin** – Major inbound tonnages in 2009 are shown by state of origin in **Figure 2-11**. Texas shipped 7.4 million tons of rail freight into Louisiana, led by *Chemicals/Allied Products* which comprised 67% (5.0 million tons) of Texan commodities. Arkansas-originating tonnage of 6.0 million tons is dominated by *Nonmetallic Minerals* (5.5 million tons). *Coal* accounted for 3.9 million tons from Wyoming and 1.9 million tons from Illinois. Farm Products from Iowa, Nebraska and Kansas ranged between 1.0 million to 1.2 million tons. California-originated rail shipments are led by 1.3 million tons of *Containerized* (e.g., mixed) shipments.
- Inbound Tonnage Destination** – Major inbound tonnages in 2009 are shown by parish destination in **Figure 2-12**. With 6.8 million tons, Orleans Parish received 18% of total inbound shipments (37.5 million tons), of which 3.2 million were *Chemical/Allied Products* and 1.2 million were containerized shipments. The other major destination of *Chemical/Allied Products* was St. Charles Parish with 1.6 million tons. The vast majority of *Nonmetallic Minerals* went to Caddo Parish (3.2 million tons) and Bossier Parish (1.6 million tons). All *Farm Products* were distributed among three parishes: 2.0 million to Calcasieu, 2.0 million to St. James, and 1.9 million to Rapides.

Figure 2-11: Inbound Louisiana Rail Freight by State of Origin (2009)



Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Figure 2-12: Inbound Louisiana Rail Freight by Parish Destination



Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Outbound Interstate Freight

Table 2-35 presents the outbound commodities, which totaled 32.6 million tons in 2009. *Chemicals or Allied Products* dominated both tonnage movements (18.9 million tons, 57.8% of total tons) and value (\$27.7 billion, 56.6% of total value). *Pulp, Paper or Allied Products* combined with *Petroleum or Coal Products* and *Food or Kindred Products* account for another 8.0 million tons (25% of total tonnage moved), valued at \$6.1 billion (12% of total). Other notable outbound movements include the 1.5 million tons of comparatively high-valued *Mixed Shipments (Containers)* valued at \$6.8 billion; and the 0.8 million tons of *Transportation Equipment*, valued at \$4.6 billion, generated the highest average value per ton (\$5,984).

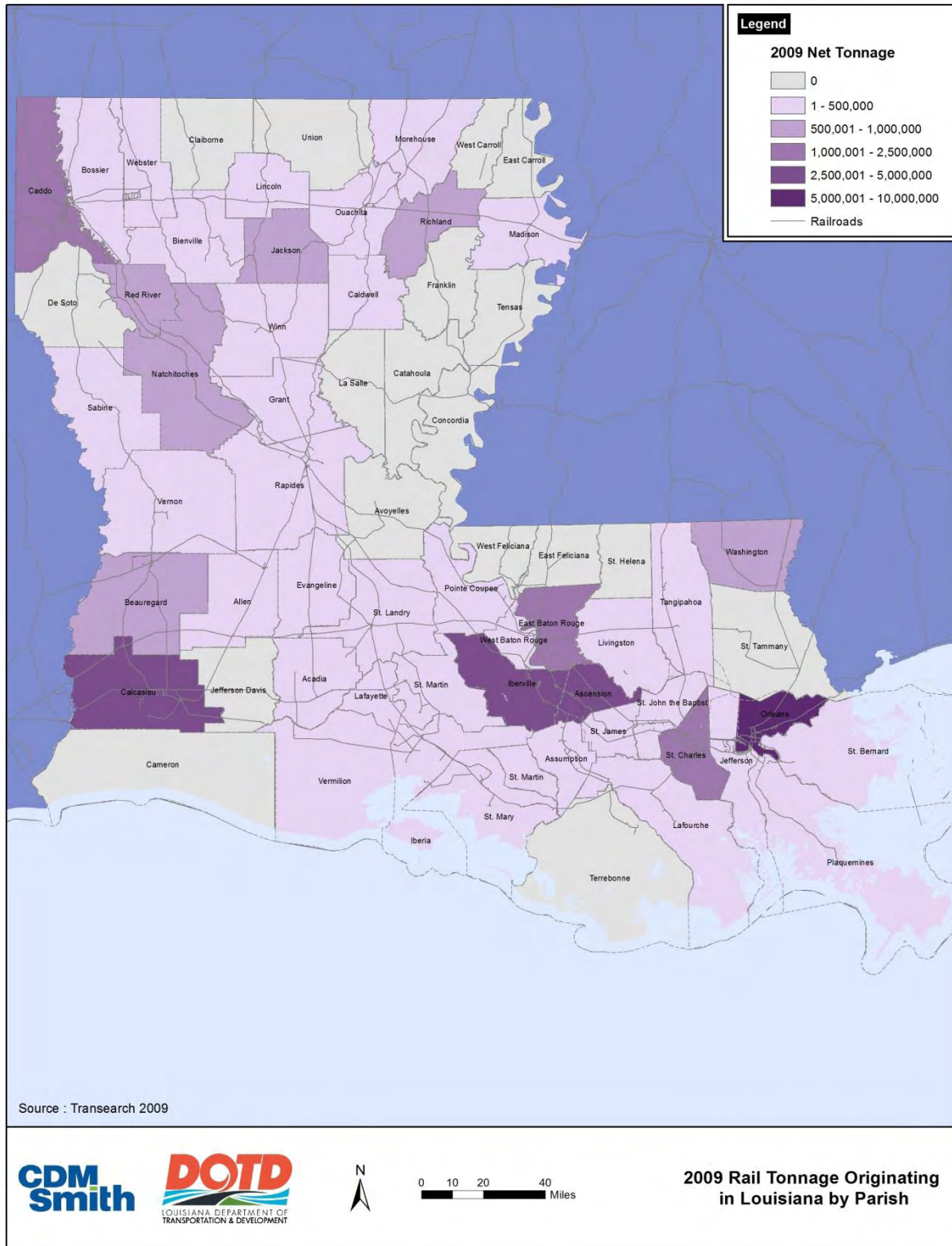
Table 2-35: Outbound Rail Freight Traffic by Major Commodities (2009)

STCC	Description	Tonnage		Value (\$mil)		Average Value (\$/ton)
		Amount	Percent	Amount	Percent	
28	Chemicals or Allied Products	18,852,336	57.8%	\$27,697	56.6%	\$1,469
26	Pulp, Paper or Allied Products	3,470,444	10.6%	\$2,701	5.5%	\$778
29	Petroleum or Coal Products	2,515,709	7.7%	\$2,220	4.5%	\$883
20	Food or Kindred Products	2,050,207	6.3%	\$1,144	2.3%	\$558
46	Mixed Shipments (Containers)	1,471,633	4.5%	\$6,845	14.0%	\$4,651
24	Lumber or Wood Products	1,037,140	3.2%	\$570	1.2%	\$550
37	Transportation Equipment	763,206	2.3%	\$4,567	9.3%	\$5,984
1	Farm Products	665,535	2.0%	\$287	0.6%	\$431
14	Nonmetallic Minerals	273,458	0.8%	\$17	0.0%	\$62
33	Primary Metal Products	260,462	0.8%	\$482	1.0%	\$1,850
	Other	1,241,712	3.8%	\$2,391	4.9%	\$1,926
TOTAL		32,601,841	100.0%	\$48,922	100.0%	\$1,501

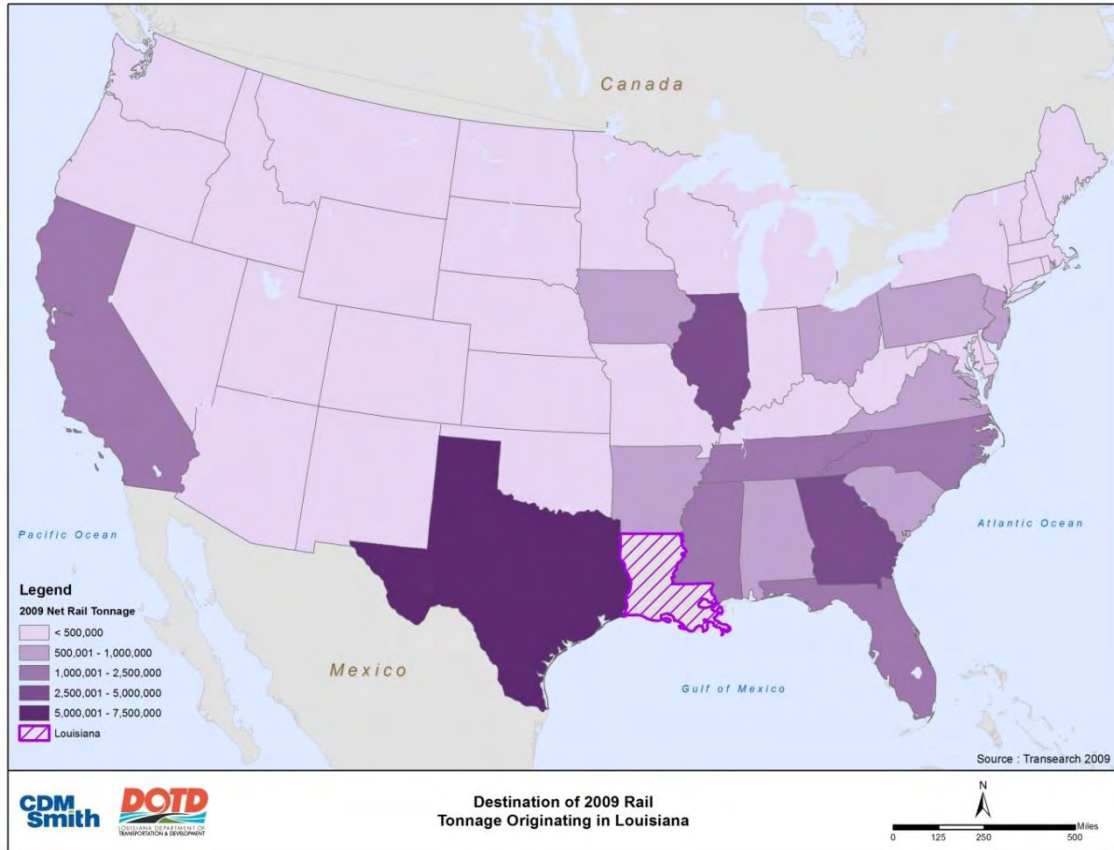
Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

- Outbound Tonnage Origin** – The 18.9 million tons of outbound *Chemical/Allied* products from Louisiana originate primarily in six parishes (Orleans, 5.3 million; Iberville, 3.1 million; Ascension, 3.0 million; Calcasieu 2.3 million; St. Charles, 1.8 million; and East Baton Rouge, 1.7 million). Other notable commodities originating in Orleans Parish include: 1.1 million tons of *Food/Kindred Products*; 0.9 million tons of *Containerized Shipments*; 0.5 million tons of *Transportation Equipment*; and 0.4 million tons of *Petroleum/Coal Products*. The 3.5 million tons of *Pulp Paper Products* primarily originate in Red River Parish (0.9 million), Natchitoches and Jackson Parishes (0.6 million each), and Washington and Beauregard Parishes (0.5 million each), as shown in **Figure 2-13**.
- Outbound Tonnage Destination** – As shown in **Figure 2-14**, Texas is also the major recipient of Louisiana rail shipments, led by 3.3 million tons of *Chemical/Allied Products*. Other notable Texas-bound products include 0.7 million tons of *Petroleum/Coal Products*, 0.5 million tons of *Pulp Paper Products*, and 0.4 million tons of *Food/Kindred Products*. Notable *Chemical/Allied Products* are also shipped to Illinois (2.0 million tons), Georgia (1.4 million tons), Mississippi (1.1 million tons), Tennessee (1.1 million tons), and North Carolina (1.1 million tons).

Figure 2-13: Outbound Louisiana Rail Freight by Parish Origin



Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009

Figure 2-14: Outbound Louisiana Rail Freight by State of Destination

Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Through-state Freight

Table 2-36 presents through-state traffic movements, which totaled 45.6 million tons in 2009. *Coal* at 16.6 million tons (36%) led the through tonnage movements. Comparatively, *Chemical or Allied Products* at 6.1 million tons led in terms of through-state movements in value at \$9.1 billion. Other notable through tonnage movements include *Farm Products* (4.4 million), *Primary Metal Products* (3.5 million), *Food or Kindred Products* (2.9 million), *Nonmetallic Minerals* (2.7 million), *Petroleum or Coal Products* (2.4 million) and *Pulp, Paper or Allied Products* (2.0 million).

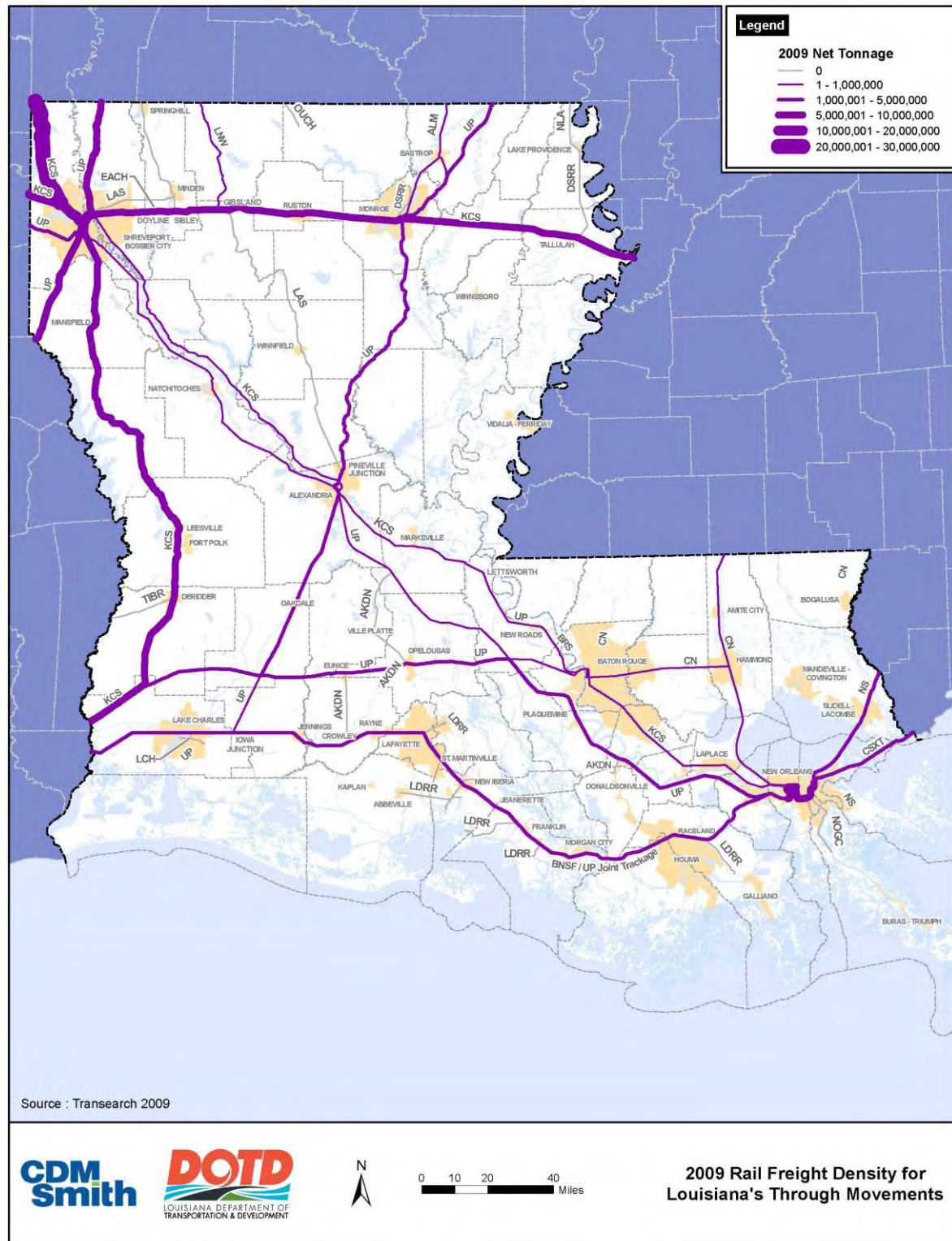
Table 2-36: Through-state Rail Freight Traffic by Major Commodities (2009)

STCC	Description	Tonnage		Value (\$mil)		Average Value (\$/ton)
		Amount	Percent	Amount	Percent	
11	Coal	16,565,334	36.3%	\$567	1.5%	\$34
28	Chemicals or Allied Products	6,127,004	13.4%	\$9,053	23.4%	\$1,478
1	Farm Products	4,388,134	9.6%	\$668	1.7%	\$152
33	Primary Metal Products	3,504,890	7.7%	\$4,684	12.1%	\$1,337
20	Food or Kindred Products	2,905,571	6.4%	\$2,102	5.4%	\$724
14	Nonmetallic Minerals	2,666,396	5.8%	\$47	0.1%	\$17
29	Petroleum or Coal Products	2,392,416	5.2%	\$1,993	5.1%	\$833
26	Pulp, Paper or Allied Products	2,042,012	4.5%	\$1,821	4.7%	\$892
46	Mixed Shipments (Containers)	1,281,958	2.8%	\$5,878	15.2%	\$4,585
32	Clay, Concrete, Glass or Stone	898,891	2.0%	\$152	0.4%	\$169
	Other	2,834,206	6.2%	\$11,753	30.4%	\$4,147
TOTAL		45,606,813	100.0%	\$38,720	100.0%	\$849

Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Through-state rail freight of 45.6 million tons accounts for 38% of all Louisiana tonnage movements. While such freight does not directly impact the State's non-transportation industries, it does affect line capacity, rail infrastructure development, local rail services, emissions, rail safety and traffic-crossing congestion. Through-state rail freight tonnage density across Class I and other rail lines is shown in **Figure 2-15**. As a hub for both Kansas City Southern (KCS) and the Union Pacific (UP) railroads, Shreveport sees much through-state rail freight passing through. (This map is comparable to the total rail cargo density map shown in Figure 2-10).

Figure 2-15: Through-state Rail Freight Density



Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

Intrastate Freight

Approximately 5.2 million tons of intrastate rail freight traffic flowed within Louisiana in 2009. Of this, *Chemical or Allied Products* comprised the vast majority in terms of both tonnage (4.1 million, 78%) and value (\$6.2 billion, 87%), as presented in **Table 2-37**. Most of the *Chemical or Allied Products* (65%, 2.6 million tons) originate in the tri-parish Baton Rouge area (Ascension, East Baton Rouge, and Iberville), and most (61%, 2.5 million tons) terminate in the four-parish New Orleans area (Jefferson, Orleans, St. Charles, and St. John the Baptist). The largest parish-to-parish movements are the 671,200 tons from Ascension and the 492,200 tons from East Baton Rouge – both to Orleans Parish.

Table 2-37: Intrastate Rail Freight Traffic by Major Commodities (2009)

STCC	Description	Tonnage		Value (\$mil)		Average Value (\$/ton)
		Amount	Percent	Amount	Percent	
28	Chemicals or Allied Products	4,058,009	77.7%	\$6,189	86.6%	\$1,525
29	Petroleum or Coal Products	681,968	13.1%	\$598	8.4%	\$877
20	Food or Kindred Products	162,884	3.1%	\$71	1.0%	\$439
37	Transportation Equipment	124,857	2.4%	\$181	2.5%	\$1,449
26	Pulp, Paper or Allied Products	107,618	2.1%	\$76	1.1%	\$705
40	Waste or Scrap Materials	40,101	0.8%	\$9	0.1%	\$215
14	Nonmetallic Minerals	24,237	0.5%	\$1	0.0%	\$56
48	Waste Hazardous Materials	10,272	0.2%	\$0	0.0%	\$0
33	Primary Metal Products	6,476	0.1%	\$11	0.2%	\$1,760
41	Misc. Freight Shipments	3,748	0.1%	\$12	0.2%	\$3,146
	Other	0	0.0%	\$0	0.0%	na
TOTAL		5,220,169	100.0%	\$7,149	100.0%	\$1,370

Source: Prepared by CDM Smith based on *TRANSEARCH* Data for 2009.

2.3.2.2 Rail Traffic Growth

The annual U.S. Bureau of Transportation (BTS) data is used to analyze annual rail tonnage freight flows between 2001 and 2010, because the detailed *TRANSEARCH* data for 2009 is not readily available for previous years. The BTS rail traffic data originates from the Association of American Railroads (AAR), which compiles summary tonnage data from Surface Transportation Board R-1 Annual Reports by the Class I railroads, and from surveys of non-Class I railroads. While not as exhaustive and detailed as the *TRANSEARCH* data, the AAR summary data provides a reputable summary of Louisiana's total inbound and outbound annual rail movements over the past decade.

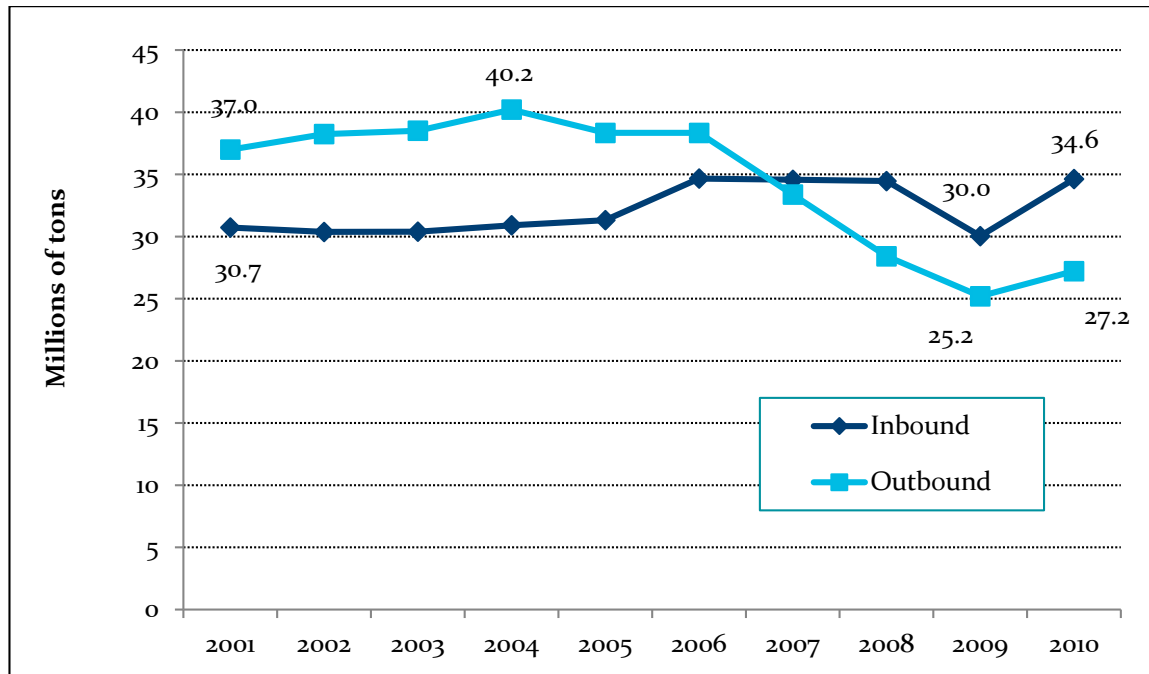
Inbound and outbound rail freight tonnage reported by the AAR fluctuated over the 2001-2010 time period, showing no overall growth; in fact AAR data shows outbound tonnage fell by over a third. Conversely, average annual growth rates are forecast by *TRANSEARCH* to grow modestly (1.5% to 1.8%) through year 2038. The net result would be an overall 62% increase in total rail traffic over the over the 30-year forecast time period (2009 to 2038). The following subsections summarize historical growth of inbound and outbound rail traffic (based on AAR data), and analyze rail freight growth through 2038 by flow direction and commodity type.

Historical

Historical rail freight trends over the 2001-2010 period vary for inbound and outbound freight, as shown in **Figure 2-16**. While inbound freight vacillated between 30.7 and 34.6 million tons annually, "reported" outbound freight fell 37% from a high of 40.2 million tons in 2004 to a low of 25.2 million tons in 2009. The low points of both inbound and outbound rail freight movements in 2009 can be

partially attributed to national economic downturn; both movements rebounded notably in 2010 (inbound rose 15.3% from 30 to 34.6 million tons, and outbound rose 8.0% from 25.2 to 27.2 million tons).¹³

Figure 2-16: Historical Rail Tonnage in Louisiana (2001-2010)



Source: http://www.bts.gov/publications/state_transportation_statistics/

However, another anomaly affected the decline in *reported* outbound freight volumes. These past annual volumes are ultimately based on waybill data. Discussions with *TRANSEARCH* indicate that railroad waybill reporting practices led to double-counting of outbound movements prior to 2007. Specifically, inbound movements through Louisiana junctions (i.e., transfers) were rebilled as outbound movements and counted again. Since 2006 this reporting anomaly has been rectified.¹⁴

Forecast

TRANSEARCH's rail freight tonnage forecasts present a significantly different perspective with steady and notable tonnage increases. Inbound freight movements are forecast to grow 54.3% from 37.5 million tons in 2009 to 57.7 million tons in 2038, an average annual growth rate of 1.5%. Similarly outbound freight movements are forecast to grow 68.4% from 32.6 million tons in 2009 to 54.9 million tons in 2038: an average annual growth rate of 1.8%. These inbound and outbound, as well as intrastate and through movements, are summarized for years 2009 and 2038 in **Table 2-38**.

¹³ The U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) source for annual tonnage trends is based on American Association of Railroad (AAR) data. The AAR 2009 data is notably less than the detailed year 2009 *TRANSEARCH* data.

¹⁴ In 2010, such volumes (now accounted for correctly in the rail waybill data) totaled approximately 13.0 million tons. If such tonnage was erroneously counted twice (as they were in 2001), the average annual growth rate for Outbound tonnage volumes would have been 0.9%, which is lower but still comparable to the 1.8% growth rate forecasted by IHS through 2038 (see Section 0).

Table 2-38: Forecast Rail Freight Tonnage by Direction (2009)

Direction	2009		2038		% Change	
	Tons (mil)	Share	Tons (mil)	Share	Total	CAGR
Inbound	37.5	30%	57.7	30%	54.3%	1.5%
Outbound	32.6	27%	54.9	28%	68.4%	1.8%
Intrastate	5.2	4%	7.0	4%	35.2%	1.0%
Through	45.6	38%	75.9	39%	66.4%	1.8%
Total	120.9	100%	195.5	100%	61.9%	1.7%

Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

A summary of all directional commodity movements in **Table 2-39** suggest little change in *Coal* and *Petroleum/Coal* movements. Conversely, many product tonnage movements are forecasted to double (i.e., *Food/Kindred*, *Pulp/Paper*, *Primary Metals*, *Clay/Concrete*, *Lumber/Wood*, *Waste/Scrap*) or even triple (i.e., *Containerized*, *Transportation Equipment*). In total, year 2009 movements of 120.9 million tons are forecasted to rise 62% to 195.5 million tons by 2038.

Table 2-39: Forecast Rail Freight Tonnage by Commodity (2038)

STCC	Commodity	2009		2038		% Change	
		Tons (mil)	Share	Tons (mil)	Share	Total	CAGR
28	Chemicals or Allied Products	36.7	30.4%	52.6	26.9%	43.2%	1.2%
11	Coal	22.4	18.5%	21.8	11.1%	-2.9%	-0.1%
1	Farm Products	12.0	9.9%	20.6	10.5%	71.9%	1.9%
14	Nonmetallic Minerals	10.2	8.4%	18.6	9.5%	83.1%	2.1%
20	Food or Kindred Products	7.5	6.2%	15.0	7.7%	100.7%	2.4%
29	Petroleum or Coal Products	6.9	5.7%	7.2	3.7%	3.6%	0.1%
26	Pulp, Paper or Allied Products	5.9	4.9%	12.4	6.3%	108.4%	2.6%
33	Primary Metal Products	4.3	3.6%	9.3	4.7%	114.8%	2.7%
46	Misc. Mixed Shipments (Containers)	4.6	3.8%	13.1	6.7%	185.2%	3.7%
37	Transportation Equipment	2.6	2.1%	8.5	4.3%	229.6%	4.2%
32	Clay, Concrete, Glass or Stone	2.2	1.8%	4.6	2.3%	111.1%	2.6%
24	Lumber or Wood Products	1.9	1.6%	4.0	2.1%	106.2%	2.5%
40	Waste or Scrap Materials	1.1	0.9%	2.8	1.4%	147.8%	3.2%
	Other	2.6	2.1%	5.2	2.7%	102.3%	2.5%
Total		120.9	100.0%	195.5	100.0%	61.7%	1.7%

Source: Prepared by CDM Smith based on TRANSEARCH Data for 2009.

2.3.3 Passenger Travel Demand and Growth

Table 2-40 presents the estimated growth in vehicular travel demand in Louisiana between 2010 and 2040, as shown in VMT (Vehicle Miles of Travel) and VHT (Vehicle Hours of Travel). Overall, vehicular travel is forecast to grow by 50% between 2010 and 2040, and a significant proportion of that growth (53%) is likely to occur on the state's interstate system. This implies that long distance over the road travel of the type that freight travel demand produces will continue to grow in significance.

A more detailed discussion of VMT and congestion on the state's highway system is provided in Section 2.2.6.1 below.

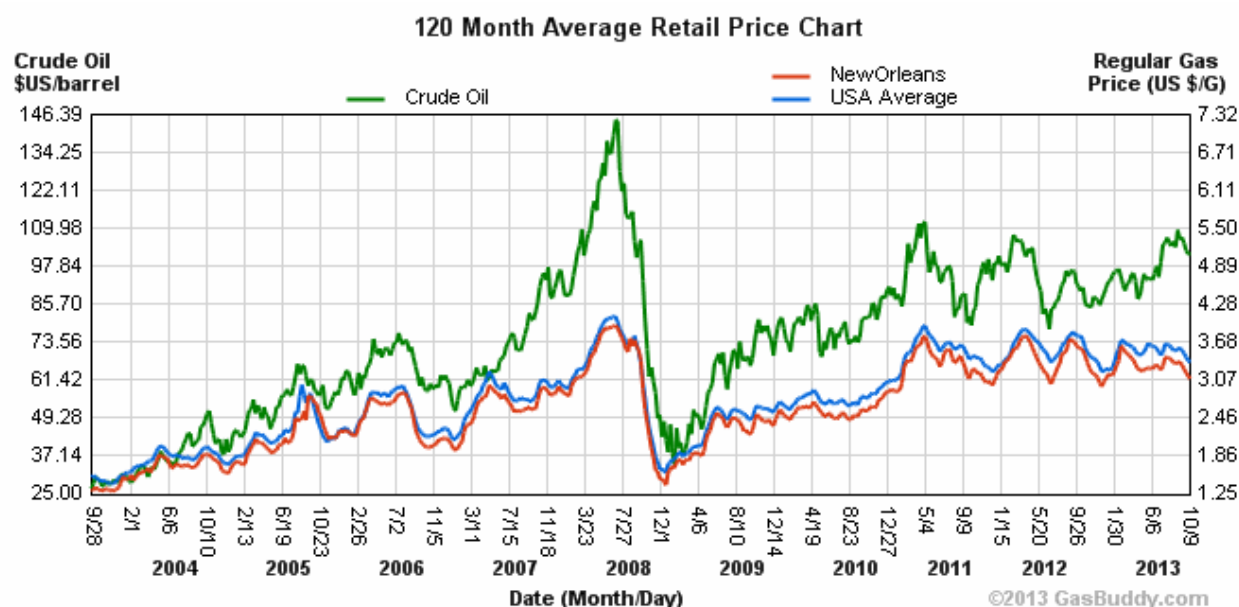
Table 2-40: Estimated VMT and VHT on Louisiana Roads, 2010 and 2040

	Functional Class	2010			2040		
		VMT	VHT	Average Speed	VMT	VHT	Average Speed
RURAL	Interstate	17,170	290	60.0	30,020	720	41.7
	Freeway	12,760	220	58.7	20,690	430	48.1
	Other Principal Arterial	13,290	270	50.0	18,940	590	32.3
	Minor Arterial	10,530	250	42.9	17,580	490	35.9
	Major/Minor Collector	3,260	80	43.0	5,650	140	40.5
	Local	1,220	30	41.8	2,160	60	36.7
	Sub Total	58,230	1,140	53.0	95,040	2,430	40.0
URBAN	Interstate	15,620	300	51.9	21,490	480	45.2
	Freeway	2,000	50	36.5	2,420	70	33.3
	Other Principal Arterial	17,180	510	33.6	21,210	780	27.1
	Minor Arterial	6,560	220	30.3	8,920	370	24.2
	Major/Minor Collector	1,390	50	28.6	1,970	80	23.5
	Local	160	10	24.0	320	20	17.7
	Sub Total	42,910	1,140	39.7	56,330	1,800	33.6
Total		101,140	2,280	44.8	151,370	4,230	35.8

As previously noted, boarding and alightings at Amtrak stations in Louisiana are projected to grow from 258,000 in 2012 to 329,000 in 2032, a 27.5% increase over the 20-year period. The growth equates to a 1.2% annual increase for the period. The forecast was based on projections of population growth in the parishes served by the Amtrak stations, and it does not include ridership resulting from either the Shreveport – Dallas intercity rail service or the Baton Rouge – New Orleans commuter rail service. If these projects were to be realized, ridership would be much higher.

2.3.4 Fuel Cost Trends

Trends in fuel costs (crude oil and regular gasoline) over the last 10 years are shown in the in **Figure 2-17**. Costs for fuel rose steadily until the 2008 recession, and have been recovering steadily ever since, though they have not attained their pre-recessionary highs. Gas prices are shown for both the New Orleans and for the U.S. averages. The regular gas price in New Orleans and the U.S. averages track each other closely, though the New Orleans price is slightly lower consistently over the period. The proximity of refineries to New Orleans, and thus lower transportation cost, is a likely contributing factor.

Figure 2-17: Fuel Cost Trends 2003 to 2013

2.3.5 Rail Congestion Trends

According to the 2007 *National Rail Freight Infrastructure Capacity and Investment Study*, sponsored by the Association of American railroads there is just one current and anticipated congestion point in Louisiana, i.e., New Orleans. More specifically, it is the interchange of the six Class I railroads there. To improve the situation, a project has been initiated, which has the potential to both streamline the interchange, lessening railroad congestion, and improve safety by eliminating highway-rail crossings.

The New Orleans Rail Gateway (NORG) and infrastructure within Jefferson and Orleans Parishes need to be upgraded to efficiently handle today's traffic volumes and support economic growth. The NORG stretches from Avondale, over the Huey P. Long Bridge, and through the City of New Orleans. It is the fourth largest rail gateway in the country and is a key link in the national transportation system. The system provides a vital link in the east-west distribution of freight rail traffic and allows access to Mexico and Canada. The NORG encompasses the Port of South Louisiana and the Port of New Orleans,

An engineering and environmental study is underway to identify various rail and roadway improvements, or "Program of Projects," that will reduce vehicle congestion, emergency evacuation, and vehicle and pedestrian safety, as well as correct physical and operational deficiencies on railroads and roadways. An Environmental Impact Statement (EIS) will be prepared to evaluate the "Program of Projects" beneficial and adverse effects on the social, economic, and physical environment and identify measures to avoid, minimize, and mitigate adverse community and environmental impacts. The "Program of Projects" will improve the quality of life for residents, increase regional competitiveness, and promote economic growth. In addition, the railroads stand to benefit from more efficient operation and added capacity for future growth.

This study is a public-private partnership between DOTD, the New Orleans Regional Planning Commission, and six Class I railroads represented by the Association of American Railroads. More detail about the NORG project appears in Chapter 4.

2.3.6 Highway and Airport Congestion Trends

2.3.6.1 Highway Congestion Trends

An important objective of the Louisiana State Rail Plan is to describe how the Louisiana's rail system can contribute the state's response to congestion and reliability challenges that will arise as the state continues to grow and change in the coming decades. Congestion is a signal that the demand for transportation and the supply in a particular place and time are out of balance; it decreases productivity and causes frustration. It reduces air quality and can add to the risk of accidents and incidents. These impacts can have negative economic, social, and quality of life consequences and that is why DOTD and the State devote a great deal of time and resources designing and implementing ways to manage congestion.

There are a handful of terms to describe roadway travel and congestion conditions. Some of the most commonly used ones are:

- **VMT (vehicle miles of travel)** - VMT describes the level of travel demand on a highway system; growth in VMT indicates growth in travel demand. VMT is a weighted measure of travel, and it is calculated by multiplying the number of vehicles on a roadway segment by its length. To estimate VMT for an individual roadway element (such as the interstate system) or for individual areas (such as a parish), the vehicle-miles for that element or area are simply added up.
- **Congestion** - Congestion describes the relationship between roadway supply and demand. When demand exceeds supply, traffic slows and sometimes stops altogether. The volume (demand) to capacity (supply) ratio is a common measure of congestion for individual roadway segments.
- There are two types of roadway congestion. The routine congestion that occurs on a regular, predictable basis is the type of congestion that the study team describes and measure here. The type of congestion that is caused by accidents and incidents is unpredictable and is very difficult to forecast. For that reason, it is recognized, but not measured here.
- **Level of Service (LOS)** - A letter grade (from A to F) that describes traffic congestion conditions. Like school grades, "A" is excellent and "F" is failing. LOS A-C describes increasingly higher levels of vehicle density and increasingly greater restrictions in the ability to maneuver freely, but no delay. At LOS D there is little freedom to maneuver, and few additional vehicles can be added to the system without causing delays. LOS E describes unstable flow conditions, in which traffic slows and delays are evident, and sudden lane changes or braking maneuvers can cause undesirable ripple effects throughout the traffic stream. Lastly, LOS F describes a range of conditions, from occasional stop and go, to gridlock.

Table 2-41 and **Table 2-42** describe how congestion is likely to grow on Louisiana's state-maintained roadways between 2010 and 2040. This information is extracted from the state's travel demand forecasting model, and it represents an estimate of travel conditions under a moderate to slow level of growth in population and employment and very minor increases in roadway capacity. The roadway improvements included in the forecasting process correspond to the list developed in the four-year State Transportation Improvement Program, which documents the locations, improvement types and the funding sources of the state's regionally important transportation investments. Thus, the

congestion estimates assume a very conservative level of transportation supply, against which the need for additional multimodal capacity is identified during the plan's development.

Table 2-41: 2010 Estimated Distribution of VMT by Level of Service on Louisiana Roadways

LOS	Interstate and Expressway	Arterial	Collector	Local
A	30.7%	19.3%	19.1%	1.9%
B	24.1%	16.3%	5.4%	0.4%
C	22.9%	15.2%	3.7%	0.2%
D	10.6%	8.6%	1.0%	0.1%
E	9.1%	7.4%	1.3%	0.1%
F	2.7%	10.7%	0.8%	0.2%

Table 2-42: 2040 Estimated Distribution of VMT by Level of Service on Louisiana Roadways

LOS	Interstate and Expressway	Arterial	Collector	Local
A	7.3%	6.2%	10.2%	1.3%
B	14.4%	9.5%	6.1%	0.5%
C	18.9%	15.3%	5.1%	0.5%
D	18.2%	8.2%	2.6%	0.2%
E	18.5%	7.0%	3.3%	0.1%
F	22.7%	19.7%	6.8%	0.7%

According to the traffic forecasts, levels of congestion are likely to increase between current conditions and 2040, without some combination of policies and investments to manage demand, provide additional transportation options and provide additional capacity. The forecasts indicate that by 2040, the amount of travel that occurs in LOS F conditions will increase from 2.7% to 22.7% in the interstate system and from 10.7% to 19.7% on the state's arterial system. Significant increases on the collector and local systems are forecast as well. The locations of congestion will extend outward, away from urban centers, towards developing locations. This is especially true of the interstate system. It will also spread in terms of time, increasingly beyond the peak hours, to the shoulders of the peak. These possible outcomes provide a justification for planners and decision-makers to identify a reasonable combination of long-range operations, policy and capacity recommendations that are consistent with the objectives of the State Rail Plan and the Statewide Transportation Plan.

2.3.6.2 Airport Congestion Trends

The effectiveness of an airport or an airport system is commonly measured in terms of its capacity. While there are many potential metrics that can be utilized with respect to an airport's capacity, the most commonly accepted measure is an airfield's overall ability to meet the demand of aircraft landing and taking off from that airport. Generally defined, airport capacity is a calculation of an airport's airfield facilities' (i.e., runways, taxiways, etc.) ability to safely and efficiently accommodate a given volume of aircraft traffic (demand) within a specified time period.

Currently, the standard measurement for airport capacity is Annual Service Volume (ASV), a metric established by the Federal Aviation Administration (FAA) representing the annual level of aircraft operations (defined as a take-off or a landing) that an airport can accommodate without imposing an unreasonable amount of delay on those operations. The ASV represents a theoretical maximum operations level for an airport, beyond which aircraft delays become unreasonable. The ASV also serves as a benchmark for airport planning. FAA guidelines recommend that when an airport's

demand/capacity ratio (the percent of an airport's ASV that is taken up by current demand in operations) reaches 60%, the airport should begin planning for capacity enhancements. When that airport's demand/capacity ratio is at 80%, the airport should start implementing those projects. By following these guidelines, the airport will ideally never reach a 100% demand/capacity ratio since those improvements should be in place by that point. It should be noted that these are general guidelines and conditions at individual airports may warrant different or no action based on achievement on these triggers.

The principle benefit of this metric is to help recognize that as airfield demand levels reach and exceed the ASV, individual aircraft delays will increase and result in overall airport congestion and operational inefficiencies. As air traffic levels grow over time, significant strains on capacity may also be realized by airport systems at all levels. As such, the key to keeping pace with future demand is by planning for capacity challenges ahead. For an airport system, capacity is a critical system performance metric since adequately accommodating aircraft operational demands is vital to establishing the adequacy of the overall airport system. As airports reach key benchmarks in terms of demand/capacity ratios, delay and congestion increase exponentially. Facility and capacity enhancement projects become necessary, or at least desirable, at capacity constrained airports. Capacity enhancement projects typically include runway improvements, taxiway improvements, NAVAID improvements, or other facility improvements.

This assessment of Louisiana's airport system capacity examined the ability of the airside system to accommodate aircraft operations over the planning period. This assessment did not examine any congestion issues related to aircraft storage, or any land-side constraints, such as terminal buildings or ground access.

Assessing Airfield Capacity

The assessment of Louisiana's airfield capacity is a fairly straightforward task. The FAA's Advisory Circular 150/5060-5, *Airport Capacity and Delay*, details the procedure for determining the ASV for an airport. The process is based on the runway configuration of the airport and the mix of aircraft using the airport on an annual basis. For the most basic airport configuration, a single runway, the ASV is 230,000 annual operations for typical aircraft mixes. Airports with multiple runways have equal or higher ASVs. No airport in Louisiana currently exceeds or is projected to exceed 230,000 annual operations during the 30-year planning period, so congestion is not an issue for the system. However, a small number of airports are forecast in the LASP to exceed 138,000 annual operations, which is 60% of the ASV and is the point at which FAA guidelines suggest planning should begin to address future congestion issues. **Table 2-43** lists these airports, and their forecasted operations in 2043.

Table 2-43: Louisiana Airports Exceeding 60% Demand/Capacity Ratios by 2043

Associated City	Airport	2043 Aircraft Operations
Abbeville	Abbeville Chris Crusta Memorial	156,959
Houma	Houma-Terrebonne	151,327
Patterson	Harry P. Williams Memorial	173,218
Ruston	Ruston Regional	147,492
Slidell	Slidell	185,223

With the exception of Houma-Terrebonne Airport, all of these airports are single runway airports. Houma-Terrebonne Airports has a pair of crossing runways, which gives it the same ASV as the other airports.

All five airports are projected in the Louisiana Airport System Plan to exceed the 60% demand/capacity planning threshold in 2043. Assuming that no capacity enhancements have been made to these airports in the previous 30 years, it would be prudent for these airports to begin looking at ways to address their expected capacity issues. It should be noted that an airport master plan for these airports, which uses a 20-year forecast period, will address any ASV capacity issues. Airport master plans develop the preferred forecast used by the FAA to validate purpose and need for airport capacity improvements. With that said, Slidell Airport is projected to cross the 60% threshold in 2033, and is likely to hit the 80% demand/capacity threshold in 2043. The FAA recommends implementing capacity enhancement projects when an airport reaches the 80% threshold. Therefore, if the forecast is accurate, Slidell Airport should expect to plan for, and implement, capacity enhancement plans by the end of the 30-year planning period.

Summary

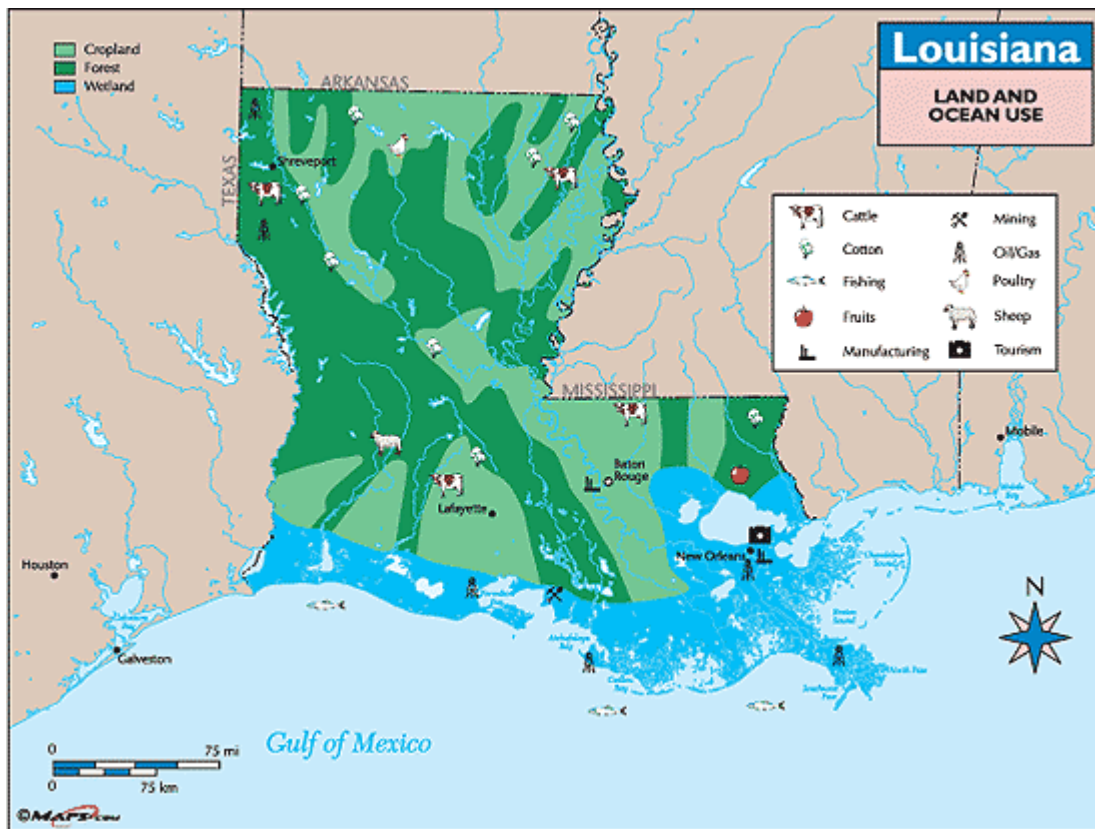
Louisiana's airport system currently does not have any airfield capacity constraints. Projections of future aviation activity do not show any of Louisiana's system airports experiencing capacity constraints over the next 30 years. However, five of Louisiana's system airports were identified as potentially reaching demand/capacity planning thresholds by the end of the planning period, assuming no capacity enhancement projects are undertaken during the 30-year forecast period. FAA guidelines suggest that these airports should begin making plans to address future capacity constraints, and, if additional demand/capacity thresholds are crossed, implement those plans.

2.3.7 Land Use Trends

Land uses in Louisiana have been relatively stable for decades. The statewide land uses are represented in **Figure 2-18**. Much of the state is rural, with most land being considered cropland, forest and wetlands. Though smaller than before Hurricane Katrina hit the Gulf Coast and rising water levels breached its levees in 2005, New Orleans still is Louisiana's largest city with a current population estimate of just over 343,000 in 2012, down from 469,000 in 2003. Many New Orleans residents disposed of their homes by the floodwaters found their way to Baton Rouge area, whose population swelled as a result. In 2000, the Baton Rouge Standard Metropolitan Area, comprised of nine parishes, had a population of almost 706,000. By 2010, the population had risen to just over 802,000. While New Orleans is well served by Amtrak, Baton Rouge has no passenger rail service.

Manufacturing is concentrated in the New Orleans-Baton Rouge corridor, generally following the Mississippi River. Union Pacific Railroad and the Kansas City Southern Railway both serve shippers in this corridor. Oil and gas production is heaviest closest to the Gulf Coast. The main marine port complex in Louisiana is in New Orleans, and is served by all six Class I railroads in Louisiana.

Figure 2-18: Current Land Uses in Louisiana



2.4 Rail Service Needs and Opportunities

This section identifies the needs and opportunities for freight and passenger rail in Louisiana. Specific projects relative to these needs and opportunities are summarized in Chapter 5. A brief discussion of the challenges in funding the improvements concludes the chapter.

2.4.1 Freight Rail Services

2.4.1.1 Corridor Initiatives

The on-going Panama Canal expansion project is expected to reach completion in 2015 and will result in new shipping patterns and additional opportunities for a number of Gulf Coast and East Coast ports. In anticipation of increased international intermodal traffic from the Panama Canal expansion Gulf Coast ports have been deepening harbors and constructing or expanding on-dock rail facilities to accommodate the larger intermodal ships and to unload and transport the international containers from the ports to inland intermodal facilities across North America for local distribution.

Relevant to Louisiana, the Port of New Orleans is addressing the expected increased traffic in containers, many of which would be moved through the state via the Class I railroad network. All of the Class I railroads have foreseen this increase in intermodal traffic between the Gulf Coast ports and Midwest destinations, and have sought major efficiency and productivity improvements to ensure that primary intermodal routes can accommodate double-stack container trains.

Several major rail intermodal corridors pass through Louisiana and the improvements completed and planned for each are described below.

NS Crescent Corridor

The NS Crescent Corridor is a \$25 billion, 12-state, and 2,500-mile network designed principally for intermodal traffic between Newark, New Jersey; Memphis, Tennessee, and New Orleans. The corridor became operational in 2013. It enters southeastern Louisiana and passes through Pearl River and Slidell on its way to New Orleans. **Figure 2-19** shows the corridor route.

Figure 2-19: NS Crescent Corridor



The primary function of this NS initiative, in conjunction with KCS, is to provide truck-competitive service in more than 30 new intermodal lanes along the Crescent Corridor linking the Northeast and Southeast with Texas and Mexico. Faster transit times and new terminals (Birmingham, Alabama; Greencastle, Pennsylvania; and Rossville, Tennessee) are hallmarks of the fully operational Crescent Corridor. The NS service offerings in the corridor are listed in **Figure 2-20**.


Figure 2-20: NS Crescent Corridor Intermodal Lanes, 2013

Over 30 New Intermodal Lanes												
Best Offered Service*	DESTINATION	ATLANTA, GA (INMAN)	BETHLEHEM, PA	BIRMINGHAM, AL	CHARLOTTE, NC	CROXTON, NJ	DALLAS, TX	GREENCASTLE, PA	MEMPHIS, TN (ROSSVILLE)	MONTERREY, NL (SALINAS VICTORIA)	SAN LUIS POTOSI, SL (INTERPUERTO)	TOLUCA, EM (PUERTA MEXICO)
ORIGIN	RR	NS	NS	NS	NS	NS	KCS	NS	NS	KCSM	KCSM	KCSM
ATLANTA, GA (INMAN)	NS					2nd PM-CT	2nd PM-CT			5th AM-C	6th AM-C	7th AM-C
BETHLEHEM, PA	NS			3rd AM-CT			4th PM-CT		4th AM-CT	7th AM-C	8th AM-C	9th AM-C
BIRMINGHAM, AL	NS		3rd AM-CT			3rd AM-CT	2nd PM-C	2nd AM-CT		5th AM-C	6th AM-C	7th AM-C
CHARLOTTE, NC	NS						3rd PM-C			6th AM-C	7th AM-C	8th AM-C
CROXTON, NJ	NS	2nd AM-CT		4th AM-CT			4th PM-CT		4th PM-C**			
DALLAS, TX	KCS	2nd PM-CT	4th AM-CT	2nd AM-C	4th AM-C	4th PM-CT		3rd AM-CT				
GREENCASTLE, PA	NS			2nd AM-CT			3rd PM-CT		3rd AM-CT	6th AM-C	7th AM-C	8th AM-C
MEMPHIS, TN (ROSSVILLE)	NS		3rd AM-CT		4th AM-C	4th PM-C**		2nd AM-CT				
MONTERREY, NL (SALINAS VICTORIA)	KCSM	5th PM-C	7th AM-C	5th AM-C	7th AM-C			6th AM-C				
SAN LUIS POTOSI, SL (INTERPUERTO)	KCSM	5th PM-C	7th AM-C	5th AM-C	7th AM-C			6th AM-C				
TOLUCA, EM (PUERTA MEXICO)	KCSM	6th PM-C	8th AM-C	6th AM-C	8th AM-C			7th AM-C				

* For quick reference only; actual service may be longer than shown due to Day of Week train frequencies. Refer to detailed schedules for specific DOW transit.
 ** Erol, NJ

Legend: Each cell lists the transit time and equipment type
 Examples
 2nd AM-C 2nd Morning Service, Containers Only
 2nd PM-CT 2nd Afternoon Service, Both Containers & Trailers

Color Codes
 New or Improved Service Effective January 20, 2013
 Existing Service
 No Service



Source: Norfolk Southern

KCS Meridian Speedway

The KCS Meridian Speedway is an east-west corridor between Shreveport, Louisiana, and Meridian, Mississippi, and provides a transcontinental link for rail traffic between the Southeast and Southwest. The 320-mile corridor represents a joint venture established between Kansas City Southern (the operator of the line) and NS (the primary source of traffic for the line) in 2005. It has been a perpetual recipient of capital investments to increase transit times and capacity on the mostly single-track line, including a major capacity upgrade of the KCS Deramus Yard at Shreveport. Since the completion of the first round of improvements, approximately 45 trains per day traverse the line. It connects with the Crescent Corridor at Meridian, thus expanding the reach and utility of the Speedway. **Figure 2-21** shows the corridor route, running east-west from Meridian to Shreveport.

KCS's NAFTA Highway

The KCS main line running through western Louisiana just east of the Texas state line provides a connection to the Texas gateways of Houston and Laredo as well as northern Mexico. The line through Louisiana is part of KCS's NAFTA Railway System and it takes its name from the North American Free Trade Agreement, which was signed by the U.S., Mexico, and Canada in 1994. KCS is owner of various rail lines in Mexico running south from Nuevo Laredo to Monterrey, the Port of Lazaro Cardenas on Mexico's Pacific Coast, and also to Mexico City. KCS connects with Canadian Pacific Railway in Kansas City, an international Class I carrier that expands the reach of the NAFTA Railway into the northern U.S. and Canada. Thus, the Louisiana line is a central segment to a rail system joining the three national economies. Furthermore, it provides shippers in Louisiana with access to Midwestern markets. It is shown in Figure 3, running north-south from Kansas City to Mexico City.

Figure 2-21: KCS Meridian Speedway and NAFTA Highway



Source: Kansas City Southern Railway, with modifications by CDM Smith.

Other Corridors

There are several other major corridors serving the state, in addition to the higher profile initiatives noted above. These are:

- **BNSF/UP Joint Trackage** – BNSF and UP jointly own and operate the former Southern Pacific Railroad's Sunset Line between Beaumont, Lake Charles, Lafayette, and New Orleans. The line provides the carriers a joint facility for handling transcontinental traffic that is interchanged in New Orleans to NS and CSXT, as well as traffic going to and from the marine port facilities in New Orleans.
- **UP's Lake Charles-Livonia-New Orleans Route** – This route provides UP with an alternative to the BNSF/UP Joint Trackage for its traffic going to and from eastern railroad interchanges and marine port facilities in New Orleans.
- **CN's New Orleans-Chicago Corridor** – The line is the route of the historic former Illinois Central Railroad, and provides the most direct north-south link between upper Midwestern markets and New Orleans.
- **UP's New Orleans-Little Rock-Chicago Corridor** – Likewise, this line provides UP linkage between New Orleans and upper Midwestern markets.
- **CSXT's Gulf Corridor** – The CSXT Gulf Coast main line runs east from New Orleans to Atlanta, Georgia, to Northeastern and Mid Atlantic markets, and to Florida. New Orleans provides an

interchange for CSXT to western carriers UP and BNSF. This route running east from New Orleans through Mississippi suffered extensive damage during Hurricane Katrina in 2005, but has since been rebuilt.

Corridor Initiative Summary

The three major corridor initiatives profiled above provide further evidence of Louisiana's superior location and crucial role in hosting transportation in the global marketplace, as well as the positive impacts that will benefit the state as a result. Each of these corridors originates within or travels through Louisiana and will offer expanded freight capacity and intermodal double-stack capability for shippers. The importance of these three corridors to Louisiana lies with growth in the movement of containerized goods in particular and broader marketability of the state's transportation rail network generally. These conditions would appear to augur well for present economic activity and future economic development in the state. The Class I railroads anticipate that the other five corridors noted above will continue to see increases in rail traffic and will receive investment commensurate with that growth.

2.4.1.2 Class I Market Strategies

Oil and Gas Production

Louisiana contains just under 10% of all known U.S. oil reserves and is the country's third largest producer of petroleum. Its reserves of natural gas are even larger, and it produces just over one-quarter of all U.S. supplies. Louisiana petroleum refineries produce enough gasoline annually (15 billion gallons) to fill up 800 million automobile gas tanks, making the state the third leading refiner. The state's 16 refineries include one of the four largest in the Western Hemisphere. Among the companies with Louisiana production facilities are Exxon, Shell, Citgo, Mobil, Marathon, Conoco, BP, and STAR. In addition to producing gasoline, Louisiana refineries also produce jet fuels, lubricants and some 600 other petroleum products.

All of these various oil and gas products, including their intermediaries, are transported via rail. All of the Class I railroads in the state transport these materials to refining and distribution sites located throughout the Gulf Coast, Midwest, and Southeast, as well as to Louisiana ports for export.

A significant percentage of these oil and gas products is transported via rail from refineries throughout the Gulf. Some domestic oil is also transported via rail to refineries, including the large terminal at St. James, near Convent, for distribution and export. The St. James terminal is located in a major strategic supply corridor for domestic and foreign crude oil and is just 160 miles upstream from the mouth of the Mississippi. The terminal also offers outstanding access to Midwest and Baton Rouge refineries. Part of the supply system for the nation's Emergency Oil Stockpile, the terminal area's 173 acres contain two river docks, six storage tanks (2 million barrel total capacity), pumping and metering stations, and a control complex. Each dock can load 40,000 barrels per hour of crude oil into tankers. St. James Terminal is linked to the Strategic Petroleum Reserve's Bayou Choctaw and Weeks Island storage sites.

During fill operations, oil can be delivered to the terminal by tankers using the Mississippi River. Oil can also be transferred directly from Bayou Choctaw or Weeks Island to tankers. Oil can also be received from a pipeline connected to the Louisiana Offshore Oil Port (LOOP). Located in the Gulf of Mexico, LOOP can offload the largest ocean-going supertankers.

The commercially owned Capline pipeline connects St. James with oil terminals in Patoka, Illinois, in the center of the Midwestern refinery area.

Of course, oil can also be delivered via rail from various source areas, including Permian Basin in West Texas via BNSF and UP. New rock fracturing technology (fracking) and horizontal drilling have caused a boom in Texas production. For example, by the end of 2014 oil production in the Permian Basin totaled 1.4 million barrels, up from 800,000 barrels in 2007, according to the U.S. Energy Information Administration.

Chemicals

Louisiana ranks second in the nation in the primary production of chemicals. More than 100 major chemical plants are located in the state producing a variety of “building block” chemicals, fertilizers and plastics, plus the feedstocks for a wide array of other products. Most of these products and raw feedstocks are also transported by the Class I railroads in the state.

Wood Products

Louisiana has more than 13.9 million acres of forests, including pine, oak, gum, and cypress. Approximately one billion board feet of timber and 3.6 million cords of pulpwood are cut annually to support a variety of forest-related industries including Kraft paper and fine-paper mills, plywood and particle board plants, furniture and flooring manufacturers, pulp mills, liner board and container board factories, and paper bag plants.

Agriculture and Food Processing

Louisiana is among the top 10 states in the production of sugar cane (second), sweet potatoes (second), rice (third), and cotton (fifth). It is also a major producer of beef cattle. Louisiana is the sole source of the Tabasco pepper prized as a condiment around the world and is also the sole source of perique tobacco which is widely used as flavoring with other tobaccos. The state's huge agricultural production supports more than a dozen rice mills, seven sugar refineries plus nearly two dozen other sugar-related facilities, and a number of canning plants, cotton gins, and meat packaging plants. Due to the export of many of these agriculture and food products, the Class I railroads carry much of this product to Louisiana ports for forwarding to the global market.

Port Connectivity

There are 15 rail-served ports in Louisiana and several others that lie close enough to elements of the state rail system that they could easily be reached if the need were to arise. There are six deep-water ports, which are:

- Plaquemines Parish
- St. Bernard
- Port of New Orleans
- Port of South Louisiana
- Port of Baton Rouge
- Port of Lake Charles

There are nine inland/coastal ports, which are:

- Port Manchac
- Greater Ouachita Port
- Port of Morgan City

- Port of West St. Mary
- Port of Iberia
- Natchitoches Parish Port
- Caddo-Bossier Port
- Lake Providence Port
- Madison Parish Port

By far, the largest rail served port in Louisiana is the Port of New Orleans. The port handles a plethora of consumer and manufactured goods, natural rubber, steel, coffee, and wood products. It is the only such marine facility in the U.S. to have access to six Class I railroads, and it is also served by 50 ocean carriers, 16 barge lines, and 75 truck lines. Neutral access for the Class I railroads is provided by the NOPB. .

Opportunities Arising from Structural Changes

Structural changes in goods movement globally affect Louisiana ports. How Louisiana ports respond to changes will affect connecting rail import/export movements. Four factors on which Class I strategic planners have been focusing are noted below.

- ***Panama Canal Expansion*** – A major driver in reshaping rail traffic patterns almost certainly will be the expansion of the Panama Canal. As noted above, the Class I railroads, particularly NS and CSXT, have been making corridor improvements in anticipation of new traffic coming to East Coast and Gulf ports as a result of this investment.
- ***All-water Suez Canal Route*** – Another factor will be shifts in manufacturing to south Asia, for which the shortest and fastest routes to U.S. markets will be through Suez Canal to East Coast and Gulf ports.
- ***Free Trade Agreements*** – A third factor will be free-trade agreements signed between the U.S. and Latin American nations. Imports and exports can be expected to transit Gulf ports served by rail.
- ***Four Corners Approach*** – The traditional pattern of shippers relying on the Port of Los Angeles and the Port of Long Beach, otherwise known as the San Pedro Bay Ports (SPBP), to handle the majority of their Asian/U.S. imports and exports has changed in the last decade. Owing to port disruptions in 2002, 2004 and 2005, and 2012, shippers have sought alternative port gateways for handling their international trade movements. They have adopted what is termed the “four corners approach” to diversify the risk of handling the majority of their container trade through the SPBP. This approach uses ports in the Pacific Northwest, the Atlantic East Coast, and the Gulf of Mexico to complement flows through SPBP.

The forces shaping the future of port activity that are external to Louisiana have implications for the state's port and related rail system demand. The Panama Canal expansion and continued development of an all-water route via the Suez Canal will affect future port and international rail traffic patterns. Shifts in geography of gateway port use, whether tied to risk reduction, cost reduction, or operational changes on the part of shippers, will affect state rail system demand. Institutional influences such as trade agreements opening up new markets for trade will also influence future port cargo volumes. It is likely that the consequences for the Louisiana state rail system is an increase in port connectivity needs to serve the economy of the state.

Market Strategies Summary

Class I railroads are well aware of market opportunities, such as the examples cited above. As for-profit businesses, they can be counted on to make the most of any such opportunities. In regards to specific commodities, the most dynamic movement is domestic petroleum production from the Bakken Formation in North Dakota, finding its way to export from Gulf ports. This is a market with did not exist six years ago, and it is on a rapid growth trajectory.

Structural changes with regard to global traffic movements bear import to Gulf ports and the railroads serving those ports. Oft-discussed are the implications of ongoing Panama Canal expansion, but also new north-south flows, triggered by new free trade agreements, hold promise for increasing rail-borne traffic going to and from Gulf ports.

2.4.1.3 Main Line Capacity Constraint: New Orleans

According to the *National Rail Freight Infrastructure Capacity and Investment Study*¹⁵, the only major main line capacity constraint in Louisiana is in New Orleans. The study rated the rail plant in New Orleans as near capacity, viz., heavy train flow with moderate capacity to accommodate maintenance and recover from incidents. Without improvement, the strain on capacity will result in slower interchanges between eastern and western carriers. Impacts to motor and emergency vehicle traffic attempting to cross rail lines clogged with trains will worsen as well.

To be sure, the issue has been well recognized for years by the Class I railroads that interchange traffic in New Orleans. In response to the challenges of moving rail freight, a major capacity enhancement initiative has been developed and is described below.

The New Orleans Rail Gateway (NORG) and infrastructure within Jefferson and Orleans Parishes need to be upgraded to efficiently handle today's traffic volumes and support economic growth. The NORG stretches from Avondale, over the Huey P. Long Bridge, and through the City of New Orleans. It is the fourth largest rail gateway in the country and is a key link in the national transportation system. The system provides a vital link in the east-west distribution of freight rail traffic and allows access to Mexico and Canada. The NORG encompasses the Port of South Louisiana and the Port of New Orleans, as well as six of the seven national Class I railroads and Amtrak.

An engineering and environmental study is underway to identify various rail and roadway improvements, or "Program of Projects," that will reduce vehicle congestion, emergency evacuation, and vehicle and pedestrian safety, as well as correct physical and operational deficiencies on railroads and roadways. An Environmental Impact Statement (EIS) will be prepared to evaluate the "Program of Projects" beneficial and adverse effects on the social, economic, and physical environment and identify measures to avoid, minimize, and mitigate adverse community and environmental impacts. The "Program of Projects" will improve the quality of life for residents, increase regional competitiveness, and promote economic growth. In addition, the railroads stand to benefit from more efficient operation and added capacity for future growth.

This study is a public-private partnership between DOTD, the New Orleans Regional Planning Commission, and six Class I railroads represented by the Association of American Railroads.

¹⁵ Association of American Railroads, 2007.

2.4.1.4 Other Class I Needs

Class I railroads have needs to invest substantial amounts of capital into their infrastructure to ensure their capability to move their customers goods efficiently and reliably. Class I railroads typically fund these improvement programs through their internal cash flows. As private enterprises, they can also borrow funds or issue stock to raise the capital for improvements.

2.4.1.5 Short Line Needs

Short line railroads often require some form of public or outside assistance to fund major infrastructure and capacity improvements. A challenge facing short line railroads in Louisiana is the need to upgrade infrastructure for handling heavier railcars with maximum allowable gross weights of 286,000 pounds (up from previous standards of 263,000 and 268,000-pound loaded cars).

2.4.1.6 Safety Enhancement

According to FRA rail safety statistics presented Section 2.1.6, railroad incidents and accidents for the 10 years between 2002 and 2011 declined by a third. The downward trend occurred in all three kinds of reportable incidents: train accidents, highway-rail accidents, and other incidents involving train accidents or crossing incidents that cause physical harm to persons. Louisiana's experience with an across-the-board decline in FRA reportable incidents mirrors that of the nationwide trends as a whole. Continued investment by the DOTD and railroads in crossing safety is a continuing need for Louisiana.

2.4.1.7 Positive Train Control Implementation

Federal legislation enumerated in the Rail Safety Improvement Act of 2008 mandates that Positive Train Control (PTC) systems be implemented over a substantial portion of the U.S. rail network by December 31, 2015. According to the Federal Railroad Administration (FRA), lines requiring PTC installation are those carrying 5 million gross tons or more annually (most Class I main lines) that handle any poisonous-inhalation-hazardous materials (some of which are manufactured in Louisiana), and any railroad main lines over which regularly scheduled intercity passenger or commuter rail services are operated. Once complete, FRA estimates that approximately 70,000 miles of track will be equipped with PTC.

PTC technology can prevent train-to-train collisions, over-speed derailments by enforcing speed limits, unauthorized incursions by trains into established work zones (thus eliminating casualties or injuries to roadway workers), and movement of a train through a switch left in the incorrect position. Legislation requires that PTC be adapted to mitigate the foregoing conditions, and that such systems be interoperable with all railroad operators on each corridor.

PTC is a proactive system of signal enforcement that stops a train before a potential collision or accident occurs. PTC systems may be quite different in sophistication and complexity, depending on the level of automation and functionality, the system architecture, the wayside system upon which the PTC system is based, and the degree of train control that the system can assume.

PTC uses digital communications systems, global positioning system (GPS) technology, and on-board computers with track databases to continuously monitor train location and speed. PTC is integrated with railroad dispatching systems to manage train traffic.

The regulatory criteria for PTC installation applies to most of the Class I railroad miles in Louisiana.

2.4.2 Passenger Rail Services

2.4.2.1 Intercity Improvements

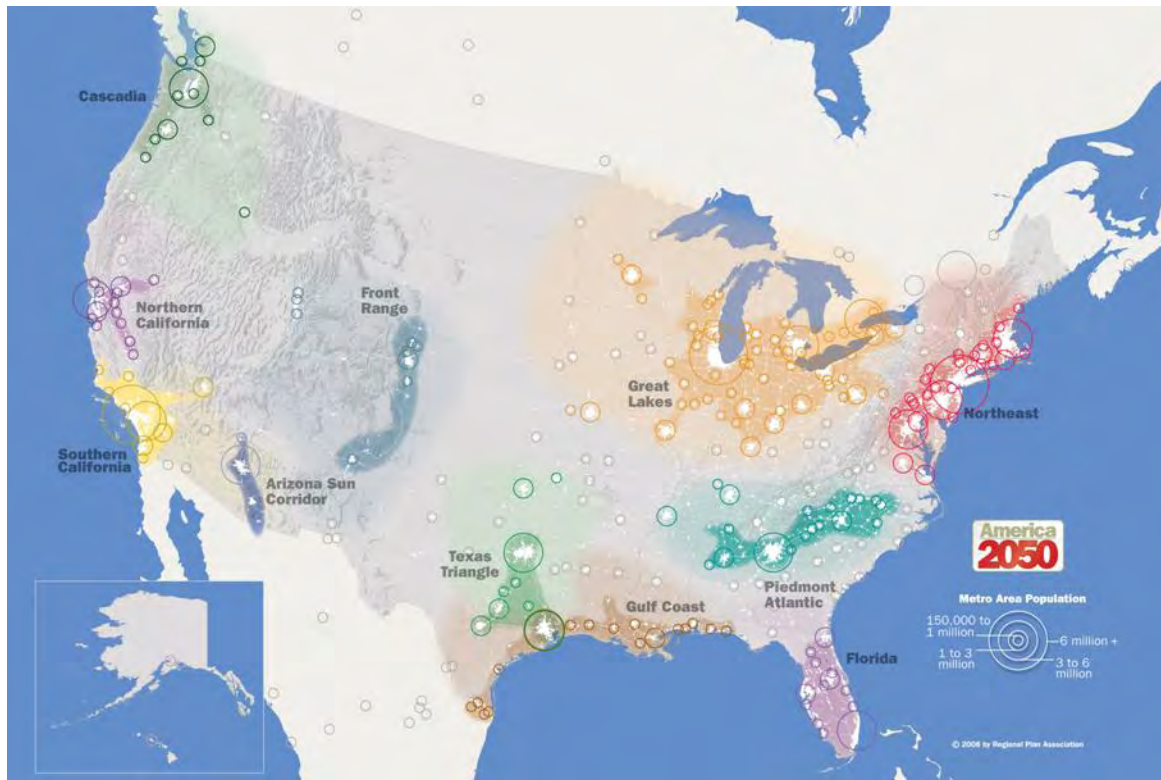
With Louisiana's central location along the Gulf Coast and with New Orleans a connecting hub for rail and water transportation, Louisiana is also the hub for all of the proposed legs of the Gulf Coast High-Speed Rail Corridor:

- Mobile – New Orleans
- Atlanta – Meridian – New Orleans
- Houston – Lake Charles – Baton Rouge – New Orleans
- Memphis – Jackson – New Orleans feeder route

All connect in the hub of New Orleans, Louisiana. In addition, there are concepts studied for routes linking Shreveport with Dallas to the west and Meridian to the east. Another potential would be to link Shreveport with Baton Rouge and New Orleans.

The state's central location brings both opportunities and challenges. The biggest challenge and opportunity is the growth in travel demand. The increase in short-distance travel demand (trips less than 600 miles) is being influenced by growth along the Gulf Coast, an emerging megaregion. A megaregion is a network of metropolitan areas linked by geography, settlement patterns, shared environment, infrastructure systems, economics and trade, shared culture and history. Southern and Central Louisiana lie within the Gulf Coast Megaregion, which stretches from Brownsville, TX to Pensacola, FL as shown in **Figure 2-22**. According to the 2006 *America 2050* report, most of the nation's population and economic expansion is expected to occur in the emerging megaregions. This increased traffic will strain existing infrastructure beyond capacity and require additional capacity and travel options in order to avoid gridlock.

Figure 2-22: Megaregions of the United States in 2050



Without expanded transportation capacity Louisiana's competitive position in the transportation marketplace will deteriorate and the costs for business, manufacturing and trade will increase. These changes will hinder growth and possibly divert economic activity to other regions. Intercity passenger rail is proposed as one option available to increase Louisiana's transportation capacity and travel options. Intercity passenger rail is most competitive in corridors of 100 to 600 miles that link major cities with frequent service while connecting with other transportation modes. The Gulf Coast High-Speed Rail corridor serves such major city pairs.

Over the past decade Louisiana and the Southern Rail Commission have undertaken several in-depth studies of potential rail passenger corridors.

Southern Rail Commission

Working to begin to address this challenge and opportunity is the Southern Rail Commission (SRC) formerly the Southern High-Speed Rail Commission (SHSRC), which has developed a strong working relationship among its members— Mississippi, Louisiana and Alabama. Texas and Georgia are also potential corridor partners. The Commission members working together have already accomplished key service experiments (i.e., *Gulf Coast Limited*) service additions, although they were short-lived, and have worked to lay the foundation for future service. With that focus they are in the process of systematically developing plans for the Gulf Coast High-Speed Rail Corridor stretching from Atlanta to New Orleans, New Orleans to Baton Rouge and Houston with a leg from New Orleans to Mobile. In addition, the SRC has continued to focus on reinstating service between New Orleans to Mobile and Jacksonville. The Gulf Coast High-Speed Rail network, as it is envisioned, will provide a strong trunk system around which ancillary commuter rail, feeder rail routes and connecting Thruway bus routes

can be developed. This larger network will help foster development, enhance transportation capacity and provide additional transportation choices.

The current framework for developing high-speed rail corridors is the Passenger Rail Investment and Improvement Act (PRIIA). Enacted in 2008, it establishes a framework for this effort. It established three new competitive grant programs for funding rail passenger capital improvements. Incremental in nature, it authorized funding over a 6-year period and most importantly a federal/local 80/20 match. The 20% local match is the minimum. Additional local or private funds help improve the public value of the requested federal investment.

Challenges for New Services

Expanding Louisiana rail passenger service faces several challenges. While New Orleans is the corridor hub and will directly benefit from improved access, many of the origins or destinations are outside the state of Louisiana. With the exception of Baton Rouge – New Orleans the only way to implement additional rail passenger service along the Gulf Coast High-Speed Rail Corridor is in partnership with other states. Unlike other corridors where one state can be the dominant partner and through its commitments and funding sources overcome the budget shortfalls and issues of both itself and partner states, the states of the Southern Rail Commission are truly interdependent. With one or two exceptions, rail service cannot begin or continue without full funding support of all SRC member states.

Many states are ahead of the SHSRC in funding, implementing, planning, analysis and estimates for expanded rail passenger service. Also when these states began their embryonic starter routes, the freight railroads had capacity available and Positive Train Control (PTC), technology designed to automatically stop or slow a train before accidents can occur, or even wayside signals were not required. Currently the growth of rail freight traffic has resulted in the freight rail industry requiring some capacity improvements for even one daily round-trip. In addition, safety improvements represent a substantial start-up cost.

These changes are occurring in an environment when state and local budgets are in substantial distress. States or local jurisdictions will be challenged to raise the required 20% match for capital investments and especially challenged to identify long-term funding flows needed to cover yearly operating costs. One of the tasks mandated by PRIIA was for Amtrak's Board of Directors, USDOT, and the states to develop and implement a single, nationwide standardized methodology for establishing and allocating the capital and operating costs required in providing state-sponsored intercity rail passenger service.

Requirements for the federal funds are rigorous. Not only must prospective applicants have strong state and regional plans, but the state and regional priorities must be clearly delineated. They also must demonstrate the ability to generate a flow of funding over time to maintain the service. Strong program management must be shown and most importantly agreements with partner states, freight railroads and other stakeholders must show a strong consensus regarding the importance of the proposed project.

Finally, Louisiana and its partner railroads must negotiate an agreement acceptable to the Federal Railroad Administration (FRA) that defines performance standards (i.e. schedules, on-time performance) and capacity utilization (balancing freight benefits and passenger rail benefits and preserving some capacity constructed with public funds for future rail passenger service).

Station Needs

As noted in Table 2-20, Amtrak had identified needs for both ADA-compliance and a state of good repair at its seven stations in Louisiana. Total needs, first tabulated in 2009, total to \$9.5 million in 2013 dollars. Most of the needs are at NOUPT.

Beyond such needs, many more are required at NOUPT and the surrounding rail infrastructure, were new passenger rail services be implemented connecting New Orleans with Baton Rouge with commuter service; or with Meridian/Atlanta and Mobile to the east, Lake Charles and Houston to the west, and Jackson and Memphis to the north. These improvements are outlined by service corridor in Chapter 3.

2.4.2.2 Hurricane Evacuation

In the aftermath of Hurricane Katrina it became apparent that additional resources would be required to fully evacuate low-lying areas in New Orleans, and that the local rail network offered a unique asset that could be utilized. With the high percentage of residents not owning cars and with future city rebuilding and growth supported with improved transit, the New Orleans Union Passenger Terminal, the Gateway Rail network, and existing rail passenger resources became an additional element of the area's evacuation plans. These plans were tested in 2008 when Hurricane Gustav led to an evacuation of New Orleans.

One of the challenges of expanding the use of passenger rail for evacuation is the limited equipment resources currently available in New Orleans. Thus, providing a readily available source of equipment and staffing for hurricane evacuation trains becomes a key benefit of the expanded rail passenger routes outlined in Chapter 3. In planning for the implementation of new routes, the role of rail passenger service in evacuation plans must be reflected in those plans and in capital investments. To meet this criterion the new service must be robust and have the surge capacity, track capacity and reliability to continue to operate as long as possible during the last stages of evacuation. Additional rail/highway grade separations and fencing in New Orleans and its suburbs and perhaps the passenger flyover at East Bridge Junction would help achieve this goal.

2.4.2.3 Other Intercity Rail Opportunities

A concept that is the subject of continuing study is a Baton Rouge – New Orleans intercity rail service. DOTD had originally identified the potential of a new passenger rail service to allow former residents of New Orleans, who had been displaced by Hurricane Katrina in 2005 and had relocated to the Baton Rouge area, a means of commuting by rail to downtown New Orleans work centers. A 2010 plan for the service is described in Chapter 3. The Regional Planning Commission in New Orleans, the Capital Region Planning Commission in Baton Rouge, and the Baton Rouge Area Foundation are conducting an update to that plan.

It is likely that the sponsors of the service will be composed of the communities served. The route involves the KCS line for most of the route, and has a terminus at NOUPT. An important part of the service will be integration with local transit in New Orleans, needed to move passengers from the train to downtown work centers.

Another concept under study is service between Shreveport area and the Dallas area. Two studies of this concept are ongoing and are discussed in Chapter 3. If this service were built, a potential latter phase would be to link it to new service extending to Meridian, MS and the Crescent Corridor. The

Northwest Louisiana Council of Governments intends to study the feasibility of lining Shreveport to Vicksburg, MS by intercity rail passenger service in 2014.

2.4.2.4 Multimodal Integration

The improved rail passenger route is but one part of the transportation product. A key facet is enabling the passenger to reach their final destination in a convenient, timely manner. This requires the rail station to be more than the gateway to the train; it must also offer connections to the passenger's destination whether it is within the city, in the region or another intercity journey. Several Louisiana stations are multimodal terminals. Located downtown they are within easy walking distance of nearby destinations.

New Orleans Union Passenger Terminal offers train-to-train connections and will be the future hub for the Gulf Coast Corridor's three routes. It is also the Greyhound Terminal offering connections to intercity motor coach service. One Amtrak Thruway route to Baton Rouge originates at the station. New Orleans offers good transit connections with a new streetcar line to the station under construction.

Two stations, Lafayette and Lake Charles, are local transit centers offering connections with the local transit bus network. Hammond offers "on call" transit service to the Amtrak station while there are few transit connections except taxis at the remaining stations. There is long-term parking at New Orleans with three other stations offering on-site long-term parking. Three others offered long-term parking nearby, and only New Iberia does not seem to have any long term parking opportunities around the station area.

The plans for the Gulf Coast High Speed Rail Corridor include initiatives to assure that the proposed stations are Multimodal Gateways. Planning efforts undertaken as the corridor is being developed will reinforce higher density walkable development around the station. The stations will be transit hubs, and in some cases regional transportation hubs, thus allowing convenient transfers that will take the passenger to their final destination. A connection between the Kenner Station and the Louis Armstrong New Orleans International Airport is planned. Some stations, located near Interstate highways will have large parking lots and focus on the auto-train interface.

Finally, providing information to the perspective passenger about intermodal connections and how to get from the train station to their final destination is almost as important as the physical connection itself. Several states have taken advantage of stakeholder resources to develop a corps of station and on-board docents to aid and inform rail passengers of the station services available, taxis, local and regional bus routes, state/city attractions, local/shops and restaurants.

2.4.3 Rail Financial Needs

The development by Louisiana of a funding strategy to support rail transportation, whether commuter rail, intercity passenger rail or freight rail, is the lynchpin for maintaining and expanding existing service and initiating new service. This funding strategy can take many forms as demonstrated by the experience in other states. The most consistent is a flow of funds for both operating and capital support from a guaranteed source (sales tax on fuel or a general sales tax for example).

In general, Louisiana's Class I rail infrastructure shows no major deficiencies, with the exception of the New Orleans Rail Gateway. That noted, Louisiana's short line rail network needs assistance, particularly with regard to upgrading lines to handle maximum loaded car weights of 286,000 pounds

and relocating lines outside of urbanized areas as with the New Orleans and Gulf Coast Railroad project.

At the same time, Louisiana has no dedicated funding source for rail improvements, either freight or passenger. A dedicated fund, with the flexibility to direct grants or loans to strategic rail projects on a statewide basis, would provide the state the means and opportunity to address many of the issues noted above over a reasonable period of time.

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Chapter 3.

Proposed Passenger Rail Improvements and Investments

3.1 Introduction

The purpose of this chapter is to describe the proposed improvements in Louisiana that could expand the state's limited passenger rail network, link major population and cultural centers, and enhance mobility for Louisianans while lessening their dependence on the automobile.

Leadership and funding are critical issues for Louisiana to maintain and expand its passenger rail service. In particular, strong public support for the development of Baton Rouge – New Orleans intercity rail service was expressed in the October 2012 Public Meetings held for the State Rail Plan.

Discussed below are the proposed intercity service, various intercity rail concepts, as well as station improvement needs. Specific studies pertaining to each option are referenced. Where details exist, the narrative for each option describes the corridor, the corridor development plans, stations and equipment, capital costs, and other benefits of the service that were cited in the respective studies.

3.2 Baton Rouge – New Orleans Intercity Service

In the aftermath of Hurricane Katrina, the loss of housing and the displacement of New Orleans' population to Baton Rouge and other cities along the Interstate 10 corridor changed regional travel patterns. This resulted in the Baton Rouge – New Orleans corridor becoming Louisiana's highest priority passenger rail route. The need for multiple options for emergency evacuation also added to the importance of this route. Reflecting this priority, the former Southern High-Speed Rail Commission (now the Southern Rail Commission) obtained funding for an in-depth study of the route (*Baton Rouge – New Orleans Intercity Passenger Rail Service Development Plan, Volume I, Summary Report*, December 2010). The Baton Rouge – New Orleans route is the eastern segment of the longer Gulf Coast High-Speed Rail Corridor extending from New Orleans – Lake Charles – Houston previously studied in a report issued in September 2002. The proposed service would have intermediate stops at Kenner (Louis Armstrong New Orleans International Airport), La Place, Gonzales and South Baton Rouge. The route is among various potential corridor routes shown in **Figure 3-1**.

3.2.1 Corridor Description

Previous studies identified the KCS line as the preferred route between Baton Rouge and New Orleans. The total length of the proposed route is almost 80 miles. While most of the route is owned by KCS (67.5 miles), near New Orleans segments of the CN (8.5 miles) and New Orleans Union Passenger Terminal (NOUPT) (3.7 miles) are utilized. The line segment between NOUPT and Orleans Junction (11.5 miles) is used by Amtrak's *City of New Orleans*.

Figure 3-1: Potential Passenger Rail Routes in Louisiana



The route is relatively flat and straight, and outside of urban areas there are only three locations with curvature geometry requiring a speed restriction of 70 mph. In Baton Rouge there are three curves with 40 mph speed restrictions, while turnouts at junctions in the New Orleans Rail Gateway also have speed restrictions. The proposed route is single track with sidings and has a short segment of double track on the CN between Orleans Junction and Mays Yard. The rail line from NOUPT to Southport Junction is single track with no passing sidings.

Track inspection and timetable speed limits researched in the 2010 report found rail and tie conditions on all of the line segments in generally good condition for present service. The report found 11 significant bridges on the KCS that need replacement or major rehabilitation. The majority of these bridges were found to have pilings in poor condition and some have poor tie conditions. The Bonnet Carré Spillway bridge is especially problematic with a 10 mph speed limit. Other bridges on the route (42 locations in total) need some degree of maintenance/ rehabilitation and need to be converted to ballast deck bridges. There are a total of 157 rail-highway at-grade crossings between Baton Rouge and New Orleans.

The CN and Amtrak segments are controlled by Centralized Traffic Control (CTC), whereby a dispatcher controls switches and signals from a central location. The KCS segment has Automatic Block Signals (ABS) with train movements authorized by Direct Traffic Control (radio communications with the train dispatcher). With ABS, switches at sidings are not controlled by the train dispatcher but are manually aligned whenever a train has to enter a siding, a time-consuming process where the conductor must walk the length of the train in order to realign the siding switch. Alternatively the siding switch can be left misaligned, requiring a following train to stop and align the switch. Currently the last 1.8 miles of the route to the proposed Baton Rouge Terminal Station is within Yard Limits, requiring trains to operate at restricted speed (not exceeding 20 mph). In addition, the main line is used as a yard switching lead due to the shortness of the existing lead.

One area of concern was noted in an earlier 2007 report. At Norco the KCS rail line is routed through the Shell Refinery. Currently the main line is used to support in-plant switching and the several spurs that support plant operations.

The KCS operates between four and six freight trains per day between Baton Rouge and Frellsen Junction (KCS's connection to CN's Baton Rouge Subdivision). About 10 freight trains per day use the 0.7 miles between Frellsen Junction and Orleans Junction (CN's route from Jackson, MS) and 12 freight trains and two passenger trains travel between Orleans Junction and CN's Mays Yard. Between Mays Yard and Southport Junction (connection with the passenger line to New Orleans Terminal) is the complex East Bridge Junction with additional passenger trains operating three days a week (*Sunset Limited*) and about 30 interchange freight trains/yard transfers a day.

3.2.2 Corridor Development Plan

New passenger trains, operating with up to eight round trips daily at speeds up to 110 mph, will require capacity improvements to ensure fluid passenger and freight operations. Key capacity improvements identified in the *Rail Service Development Plan – Baton Rouge – New Orleans* for the New Orleans Rail Gateway and New Orleans Union Terminal are summarized in Section 3.10 below. Capacity improvements for the remainder of the route are outlined in **Appendix C**. The comprehensive improvements listed in the plan include:

- Upgrades to the track structure and geometry;
- Upgrades to the signal system (especially the installation of CTC);
- Reconfiguration and relocation of siding switches and installation of controlled switches to improve network flexibility and throughput;
- Increases in capacity through the installation of additional sidings and other trackage;
- Improving NOUPT to accommodate additional trains with greater efficiency;
- Upgrading/replacement of key bridges;
- Improving the New Orleans Rail Gateway network for additional capacity, fewer delays and greater efficiency;
- Improving or separating rail/highway grade crossings;
- Installing fencing at selected locations.

Improving the New Orleans Rail Gateway network and rail/highway grade crossings are an example of a near-term improvement undertaken to lay the foundation for additional rail passenger service that is of immediate benefit to freight rail customers and motorists. The improvements listed in the plan would provide the capacity to handle the proposed passenger rail improvements (additional frequencies, increased reliability and faster travel times) and the projected rail freight growth.

As this is a route with moderate freight traffic, some of which originates at oil refineries, PTC will be in service in late 2015 before any expansion of rail passenger service is undertaken. The installation of PTC may result in the installation of an advanced signal system that would reduce the cost of further signal upgrades required to accommodate rail passenger service. The improvements listed in the plan will provide the capacity to handle the proposed passenger rail improvements (additional frequencies, increased reliability and faster travel times) and the projected rail freight growth.

3.2.3 Corridor Stations and Equipment

The 2010 study called for the following stations along this route: NOUPT, Kenner (Louis Armstrong New Orleans International Airport), La Place, Gonzales, South Baton Rouge, and Baton Rouge (for simplicity, not all stations are shown in Figure 3-1). NOUPT will require significant track improvements (as noted in Section 3.10), while Baton Rouge and all intermediate stations will need to be constructed. It is anticipated that local authorities will be directly involved in station site location and take the lead for construction of any station buildings. It is also anticipated that cities and developers will use station and rail service development as an opportunity for enhanced community planning and retail/office/housing development opportunities. The 2010 report estimated station platform construction would total approximately \$7.5 million.

Current availability of equipment for the service is limited. However, the issuance of the uniform equipment standards for bi-level passenger cars and the likelihood of a passenger car production line being established in the next few years should offer options for equipment acquisition. Service planning assumes state-of-the-art, bi-level trains equipped with WIFI internet access and provisions for food and beverage service, if desired. The trains would operate in three-car push-pull locomotive

hailed trains. One of the rail cars would be a cab (driving) car, and coach class would be the only accommodation offered.

3.2.4 Ridership Potential

As was noted earlier there has been a significant change in regional travel patterns as a result of the displacement of New Orleans population and loss of housing in the city. Given the route length (80 miles), the increase in the daily work trips in the corridor, and the increase in traffic congestion on I-10 the focus of the Baton Rouge – New Orleans service package will cater to workers traveling to and from a job site (70 to 80% of riders) with the majority of schedules during peak commute periods and fares offering multiple-trip discounts. Much like the Capitol Corridor in California (Auburn-Sacramento-Oakland-San Jose), the Baton Rouge – New Orleans is an intercity route but one designed for long-distance daily commuters with intercity travelers being a key secondary market.

Because of the unique market (daily commuters) targeted by the proposed service, the 2010 *Baton Rouge – New Orleans Intercity Passenger Rail, Volume 1, Summary Report* used a ridership forecasting procedure based on the Federal Transit Administration's Aggregate Rail Ridership Forecasting Model. It was felt that basing ridership estimates on the FTA model, which is based on the performance of commuter rail systems, would provide better guidance to planners. **Table 3-1** provides an overview of the forecast results from the 2010 report.

Table 3-1: New Orleans – Baton Rouge Ridership and Ticket Revenues

Frequency	Speed	Forecast Year	Annual Ridership	Annual Ticket Revenue	Avg. Riders per Train	Tkt. Rev. per Passenger
4 RT	79 mph	2013	461,000	\$3,946,200	165	\$8.56
6 RT	90 mph	2018	644,200	\$6,339,000	156	\$9.84
8 RT	110 mph	2023	886,400	\$9,866,000	165	\$11.13
8 RT*	110 mph	2028	1,205,900	\$15,109,000	224	\$12.53

Note: *Forecast assumes five additional years of service and Transit Oriented Development around stations.

Additional forecast details and an overview of the forecast methodology is available in *Baton Rouge – New Orleans Intercity Passenger Rail, Volume 1, Summary Report*.

3.2.5 Capital Costs

The 2010 feasibility study estimated the cost of implementing the passenger service at \$447.8 million. The estimate accounts for improvements for track, structures, signalization, and stations (including \$5.6 million for improvements at NOUPT), rolling stock, and engineering and construction management.

Additionally, CN, which owns the rail segment linking the KCS main line at Kenner Junction with Southport Junction (just east of East Bridge Junction), recommended a flyover of East Bridge Junction for the passenger trains. This improvement would minimize freight train and passenger train conflicts. It was estimated to cost \$50 million, per the 2010 report. Accordingly, total estimated costs for service implementation would be \$497.8 million. Beyond passenger rail considerations, the flyover would enhance the robustness of a rail evacuation route between Baton Rouge and New Orleans.

Assuming a 2.4% annual inflation rate from 2010, the total for the new passenger service improvements becomes \$522 million.

3.2.6 Benefits Analysis

The 2010 report also looked at the non-cash benefits of the proposed rail service to determine if those benefits outweigh the costs of the investment. The analysis limited benefits to transportation cost savings for service users, enhancement of property value to owners and users of properties around stations, cost savings from reductions in environmental costs as a result of the provision of rail service, and savings due to reductions in LA SWIFT intercity bus service (which has since been discontinued).

The analysis indicated that the Baton Rouge – New Orleans passenger rail service will generate benefits in excess of costs. For every dollar in investment, the service will deliver \$1.40 in benefits, and there is a 78% probability of achieving a positive return on investment.

3.2.7 Plan Update

In February 2014, an update of the 2010 study revisited assumptions about the maximum speed of trains and their frequencies. The Baton Rouge – New Orleans Intercity Rail Feasibility Study Strategic Business Plan was sponsored by the New Orleans Regional Planning Commissions, the Capital Region Planning Commission and the Baton Rouge Area Foundation. Its Capital and Operating Plan called for maximum speeds of 79 mph and two round trips per day as an initial service level. As the popularity of the service and its ridership grows over time, train speeds and frequencies could be increased.

The updated plan assumes the use of Amtrak rolling stock at start-up, obviating the related capital costs in the near term. Also, slower maximum speeds of trains at start-up will serve to minimize required track improvements.

This incremental approach would result in an estimated annual operating subsidy (operating expenses less operating revenues) of \$6.8 million. Capital improvements required for implementing this service would be \$262 million. These figures contrast with an estimated annual operating subsidy of \$18.3 million (\$17 million in 2010 dollars) and the aforementioned capital improvement estimate of \$522 million for the full build-out envisioned in the 2010 plan, i.e., maximum 110 mph speeds and eight round trips per day.

3.3 New Orleans – Baton Rouge – Lake Charles – Houston

This route is western leg of the Gulf Coast High-Speed Rail network, and was intensively reviewed in the *Gulf Coast High-Speed Rail Corridor, Lake Charles to Meridian Corridor Development Plan, Volume I, Summary Report*, June 2007. It is an extension of the New Orleans – Baton Rouge route which is further analyzed and noted as a state priority in the *Baton Rouge – New Orleans Intercity Passenger Rail Service Development Plan*, outlined above.

3.3.1 Corridor Description

This route extension begins at the Baton Rouge Station. The length of the proposed route extension is approximately 163 miles, 9.2 miles on the KCS and the remainder (154 miles) on the UP. The final 13.6 miles, Iowa Junction to Lake Charles on the UP has passenger service, Amtrak's *Sunset Limited*.

Outside of the industrial segment in Baton Rouge and the Mississippi River crossing, the route has modest grades and curvature. Between Baton Rouge and Kinder rail weight varies from 133 to 136-pounds reflecting the level of freight traffic on the route. Yard Limits from 3 miles south of Baton Rouge to the Mississippi River Bridge result in speed limits of 20 mph. The bridge crossing, between

Lobdell Junction (west end of the Mississippi River Bridge) and Anchorage Junction (2.4 miles, 10 mph speed limit), is very slow. Approximately eight freight trains per day utilize this line segment. The rail line between Anchorage and Livonia is single track with CTC with no controlled sidings. Between Livonia and Kinder (UP Beaumont subdivision) there are five remotely controlled sidings in this segment. Except for one siding, these sidings are less than 10,000 feet in length.

Located at Livonia is the junction of UP's north/south line from New Orleans to Shreveport and its east/west line from Baton Rouge to Beaumont, TX. It is also the location of a major classification yard and crew change point. The classification yard is located on the north/south line south of the junction. With heavy freight traffic on the north/south line and most trains entering the yard or changing crews, congestion and delays are significant. The lack of capacity on the Livonia – Kinder route segment results in trains “queuing up” on the main lines leading to Livonia waiting to enter the yard.

The segment with the heaviest traffic is between Livonia and Kinder with an average of 10 freight trains per day. Paired with the former Southern Pacific Railroad line through Lafayette, this line is operationally an eastbound directional railroad. From Kinder to Iowa Junction the route uses part of the Lake Charles Subdivision. This line is lightly used with no passing sidings, a speed limit of 10 mph and is controlled via Track Warrants issued by radio.

The final route segment is Iowa Junction to Lake Charles (13.6 miles). This segment is a mix of single and double track with Automatic Block Signals. Passenger trains (*Sunset Limited*) have a speed limit of 70 mph on this line.

One issue with this proposed route is that it has heavy freight traffic and bypasses Lafayette, a major city and home of the University of Louisiana. A direct route exists between Baton Rouge and Lafayette utilizing an historic Southern Pacific line that is now abandoned. Reconstructing the line would require several major structures: a flyover over UP's Livonia Subdivision at Grosse Tete; two movable bridges over navigable waterways; and an 18-mile viaduct over the Atchafalaya River Basin.

3.3.2 Corridor Development Plan

New passenger trains, operating with up to six daily intercity round-trips and six daily commuter round-trips at speeds up to 90 mph, will require capacity improvements to ensure fluid passenger and freight operations. Key capacity improvements identified between New Orleans and Baton Rouge are outlined in the previous section and in Appendix C. Capacity improvements for the remainder of the route are outlined in **Appendix D**. The comprehensive improvements listed in the plan include the bulleted items in Section 3.1.2 plus a passenger flyover over heavily trafficked rail freight routes.

As noted earlier, improving the New Orleans Rail Gateway network and rail/highway grade crossings will benefit freight rail customers and motorists. The improvements listed in the plan would provide the capacity to handle the proposed passenger rail improvements (additional frequencies, increased reliability and faster travel times) and the projected rail freight growth.

Perhaps the most critical planning/development issue revolves around the alternate routes between Baton Rouge and Lake Charles. One route uses existing freight rail lines (UP) with heavy freight traffic running through Opelousas and Kinder and onto Lake Charles. It misses the major population center of Lafayette. The alternate shorter route follows I-10 and an old rail grade directly from Baton Rouge to Lafayette. However, in doing so it crosses the Atchafalaya River Basin, a major waterway and Mississippi River flood diversion channel. Utilizing this route would require the construction of 46.5

miles of new rail line, the upgrade of five miles of branch line, and major bridge/trestle structures across the navigable waterways and a flood plain. Major environmental issues can be expected.

The link represents a large capital expense for start-up service (2 round-trips). On the other hand, improving the alternate route (Baton Rouge – Lake Charles bypassing Lafayette) means walking away from these infrastructure investments once the service moves to the preferred alternate route via Lafayette. Perhaps the most logical strategy is to improve the New Orleans – Baton Rouge route, then supplement service (New Orleans – Lake Charles) with Thruway Bus Service (connecting at Baton Rouge with Baton Rouge – New Orleans rail service), a daily *Sunset Limited* and a supplemental New Orleans – Houston train (both on the former SP route). The Baton Rouge – Lafayette direct link would be postponed until the latter stages of the Gulf Coast High Speed Rail Corridor development (as was done with I-10).

As segments of the route have significant freight traffic, some of which originates at oil refineries, PTC will be in service in late 2015 before any expansion of rail passenger service is undertaken. The installation of PTC may result in the installation of an advanced signal system that would reduce the cost of further signal upgrades required to accommodate rail passenger service.

The improvements listed in the plan will provide the capacity to handle the proposed passenger rail improvements (additional frequencies, increased reliability and faster travel times) and the projected rail freight growth.

3.3.3 Corridor Stations and Equipment

The earlier planning studies identified the following stations along this route: NOUPT, Kenner (Louis Armstrong New Orleans International Airport), South Baton Rouge, Baton Rouge, Opelousas, or Lafayette (depending on the route chosen), Lake Charles, with a route extension to Beaumont, TX and Houston. NOUPT will require significant track improvements that will need to be constructed or improved. It is anticipated that local authorities will be directly involved in station location and take the lead for construction/ improvement of any station buildings. It is also anticipated that cities and developers will use station and rail service development as an opportunity for enhanced community planning and retail/office/housing development opportunities.

Current availability of equipment for the service is limited. However, the issuance of the uniform equipment standards for bi-level passenger cars and the likelihood of a passenger car production line being established in the next few years should offer options for equipment acquisition.

3.3.4 Ridership Potential

As part of the aforesaid *Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan*, ridership and ticket revenue forecasts for the New Orleans-Baton Rouge-Lake Charles-Houston corridor were estimated by AECOM Consult. Forecast assumptions included improved running times, 79 mph and 90 mph, and three intercity frequency options (2 round-trips, 4 round-trips and 6 round-trips). This forecast also includes ridership and ticket revenues for additional commuter schedules (4 round-trips at 79 mph, 6 round-trips at 90 mph) between Baton Rouge and New Orleans. These commuter-oriented trains make additional stops between Baton Rouge – New Orleans (see station write-up for 2010 *Baton Rouge – New Orleans Intercity Passenger Rail Service Development Plan*). As can be seen in **Table 3-2**, demand appears to exist for a more frequent higher speed rail service in the New Orleans – Baton Rouge – Lake Charles – Houston corridor. However, as was noted previously, equipment availability for near-term service initiation is limited.

Table 3-2: New Orleans-Baton Rouge-Lake Charles-Houston Ridership and Ticket Revenues (2012)

Intercity Frequency	Speed	Annual Ridership*	Annual Ticket Revenue*	Avg. Riders per Train	Pass. Mile per Train Mile	Tkt. Rev. per Train Mile
2 RT	79 mph	311,028	\$10,169,000	213	126.7	\$16.74
4 RT	79 mph	484,066	\$15,832,000	166	98.7	\$13.03
6 RT	79 mph	651,858	\$20,788,000	149	86.5	\$11.41
2 RT	90 mph	Not Forecast				
4 RT	90 mph	660,919	\$21,584,000	226	135.6	\$17.77
6 RT	90 mph	872,550	\$27,731,000	199	115.9	\$15.22

Note: *Includes connecting traffic from Atlanta-New Orleans and Mobile-New Orleans corridors. This forecast includes local Baton Rouge – New Orleans traffic (commuter and Intercity) and is a separate independent forecast from the Baton Rouge – New Orleans forecast outlined in the previous section.

3.4 New Orleans – Gulfport – Mobile

This route is part of the Gulf Coast High-Speed Rail network, and this segment of the corridor was intensively reviewed in the *Gulf Coast High-Speed Rail Corridor, New Orleans to Mobile Corridor Development Plan, Volume I, Summary Report*, October 2006. This corridor was also studied in the *PRIIA Section 226, Gulf Coast Service Plan Report*, July 2009.

3.4.1 Corridor Description

The rail line is in good condition. Stations and platform locations are identified (although rebuilding of hurricane damage to stations will be required), and the corridor has a strong tourist industry to enhance demand. Improvements undertaken to initiate local service in this corridor can also represent the first phase of efforts to restore service from New Orleans to Florida.

The corridor lies just inland of the Gulf of Mexico. The rail line runs through numerous coastal wetlands crossing 47 creeks or streams, two bays, a lake and seven navigable waterways with movable railroad bridges. The first seven miles of the route is used by Amtrak's daily *Crescent* and the proposed New Orleans – Meridian route. The first part of this segment is 3.5 miles between NOUPT and East City Junction. This segment, like the station, is leased to Amtrak by the city-owned NOUPT and is equipped with CTC. The next segment is 3.4 miles in length, owned by the Norfolk Southern Railway and runs from East City Junction to New Orleans Terminal Junction. This segment is double track and has CTC.

At New Orleans Terminal Junction the route joins the CSXT route that runs east to Flomation, AL connecting to rail lines extending to Jacksonville, Cincinnati and Atlanta. This 137-mile route to Mobile is single track with short stretches of double track. Except within the yard limits of Sibert Yard in Mobile and Gentilly Yard in New Orleans, the line is equipped with CTC with 10 controlled sidings that can be used for meets (or passes) and two stretches of double track. Most of the track is 132-pound welded rail with ties in good condition. Maximum passenger train speed is from 60 to 79 mph, although there are some 30 mph speed restrictions in terminal areas and over certain bridges. Much of the line was substantially rebuilt in 2006 due to damage suffered as a result of Hurricane Katrina. Amtrak's *Gulf Coast Service Plan Report* indicated that this track segment of the CSXT was in a state of good repair and had sufficient capacity for tri-weekly rail service to resume. For additional frequencies a capacity modeling study will need to be undertaken in collaboration with CSXT to determine the additional capital improvements required for the requested number of frequencies.

As was noted above, the speed restrictions over drawbridges (due to their structural design) combined with clusters of grade crossings severely constrain the route's capacity and average speed. The drawbridges over the navigable waterways also negatively impact reliability. Water traffic has absolute priority over rail traffic. This water traffic is random in nature and generally occurs during daylight hours, the same time period that the corridor passenger trains will be operating. The impact on reliability is very unpredictable and cannot be factored into the timetable. On some trips a train may suffer no delays, while on other trips a train may be delayed by water traffic at several bridges. On other trips a train may suffer no direct drawbridge delays but may be negatively impacted by other trains that have had to stop for water traffic. The process and agreements undertaken by Amtrak and water stakeholders in Connecticut for the drawbridges between New Haven, CT and Providence, RI may provide guidance in resolving this situation. The rail line is heavily used. In addition to local freight trains serving on-line industries, the development plan noted that an average of about 18 to 19 freight trains use the corridor on a daily basis.

3.4.2 Corridor Development Plan

New passenger trains, operating with up to 6 round trips daily at speeds up to 90 mph, will require capacity improvements to ensure fluid passenger and freight operations on the line.

Key capacity improvements identified in the aforesaid *New Orleans to Mobile Corridor Development Plan* are summarized below (see New Orleans Rail Gateway and NOUPT section) and in **Appendix E**. The comprehensive improvements listed in the plan include the bulleted items in Section 3.1.2 plus upgrading moveable bridges.

The improvements listed in the plan would improve grade crossing safety and provide the capacity to handle the proposed passenger rail improvements (additional frequencies, increased reliability and faster travel times) and the projected rail freight growth.

The CSXT route handles hazmat materials and thus will require PTC. Given the timeline for the installation of PTC, it will be in service on the Mobile – New Orleans route in late 2015 before any expansion of rail passenger service is undertaken.

3.4.3 Corridor Stations and Equipment

Stations along the New Orleans – Mobile route are New Orleans; the Mississippi stops of Bay St. Louis, Gulfport, Biloxi, and Pascagoula; and Mobile. All of the intermediate stations suffered damage during Hurricane Katrina, and the Mobile station has been demolished. All of the stations were shelters with platforms, and the rebuilding cost was estimated in Amtrak's *Gulf Coast Service Plan Report* to be \$2.4 million.

Current availability of equipment for the service is limited. However, the issuance of the uniform equipment standards for bi-level passenger cars and the likelihood of a passenger car production line being established in the next few years should offer options for equipment acquisition.

3.4.4 Ridership Potential

The *Gulf Coast Limited* last operated between June 1996 and March 1997 (278 days). During that period it carried 34,117 riders with ticket revenues of \$427,000. Adjusting for inflation over the 13 years that level of ticket revenue would equate to \$471,000 in 2012 dollars. During the period it operated, the *Gulf Coast Limited* averaged 61 riders per train and average ticket revenues (adjusted) of \$7.19 per train mile.

In June 2007 the Southern Rapid Rail Transit Commission (now the Southern High-Speed Rail Commission) issued the *Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan*. As part of the plan, updated ridership and ticket revenue forecasts for the New Orleans – Gulfport – Mobile corridor were estimated by AECOM Consult. Forecast assumptions included improved running times, 79 mph and 90 mph maximum speeds, and three frequency options (2 round-trips, 4 round-trips and 6 round-trips). As can be seen below in **Table 3-3** demand exists for a more frequent higher speed rail service in the Mobile corridor.

Table 3-3: New Orleans – Gulfport – Mobile Ridership and Ticket Revenues (2012)

Frequency	Speed	Annual Ridership*	Annual Ticket Revenue*	Avg. Riders per Train	Pass. Mile per Train Mile	Tkt. Rev. per Train Mile
2 RT	79 mph	152,838	\$1,912,000	105	58.8	\$9.09
4 RT	79 mph	252,766	\$3,171,000	87	49.3	\$7.54
6 RT	79 mph	335,791	\$4,284,000	77	45.0	\$6.79
2 RT	90 mph	Not Forecast				
4 RT	90 mph	310,246	\$4,083,000	106	65.3	\$9.71
6 RT	90 mph	391,307	\$5,052,000	89	53.8	\$8.01

Note: *Includes connecting traffic from Houston – New Orleans and Atlanta – New Orleans corridors.

Additional forecast details and an overview of the forecast methodology is available in *Volume II, Technical Appendices* of the *Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan*.

3.4.5 Cost Estimates

In conjunction with the in-depth analysis of the proposed New Orleans – Gulfport – Mobile rail passenger service, estimates were compiled of the capital costs required to upgrade the rail line in preparation of service. The 2006 report also outlines order-of-magnitude capital costs for track, right-of-way, bridges, signals, and highway crossings of approximately \$260 million (initial service) to \$471 million (full service). This estimate includes capital costs within the New Orleans Gateway network and New Orleans Union Terminal discussed above and may include projects also listed in cost estimates for other corridors. While this report included estimates for station improvements, an estimate for equipment was not included. It also did not include estimates of operating costs or required state operating payments.

3.5 New Orleans – Meridian – Birmingham – Atlanta

The proposed northeast leg of the Gulf Coast High-Speed Corridor utilizes the NS's Crescent Corridor linking the cities of Meridian, Laurel, Hattiesburg, Picayune and Slidell with New Orleans. This segment of the corridor was intensively reviewed in the *Gulf Coast High-Speed Rail Corridor Development Plan, Phase I: Improvement Implementation Plan – Meridian to New Orleans, Volume I Summary Report*, September 2002 and *Gulf Coast High-Speed Rail Corridor Development Plan, Lake Charles to Meridian Corridor Development Plan, Volume I, Summary Report*, June 2007.

3.5.1 Corridor Description

The route passes through rural country with rolling hills. As a result the line has many short grades and curves. It also crosses a number of streams and rivers, some of which are navigable waterways.

The first seven miles is shared with the proposed New Orleans – Gulfport – Mobile corridor described in the preceding section. From New Orleans Terminal Junction, the line passes just east of NS's Oliver

Yard joining the main line to Meridian at Oliver Junction. Except for a stretch of double track between Oliver Junction and X Tower (west of the Lake Pontchartrain Bridge), NS's 195-mile route from New Orleans Terminal Junction to Meridian is mainly single track, with 132-pound welded rail and sidings every 10 to 20 miles. The line is in good condition with the authorized maximum speed for passenger trains being 79 mph. There are, however, lower speed limits due to grades, curves and bridges. One challenge in improving the New Orleans – Meridian route is the rolling country traversed, which results in a high number of curves, some in excess of two degrees. This creates a conflict between faster passenger service (greater curve super-elevation requirement) and freight service (lower super-elevation requirement). It also impacts passenger comfort.

There are 11 sidings on this route segment, six of which are longer than 10,000 feet capable of holding most current freight trains. Except for Purvis (1,087 feet), the other four sidings vary from 6,200 feet to 9,371 feet. While siding spacing appears adequate, the distance between the more usable longer sidings can be as much as 40 miles. The distance between Derby (11,790 feet) and X Tower (beginning of double track in New Orleans) is about 50 miles. Siding spacing greatly impacts the line capacity.

There is CTC signal protection between East City Junction and NE Tower and approximately 12.6 miles of double track with Automatic Block Signals (ABS), whereby trains travel in only one direction on each track between NE Tower and X Tower. From X Tower to Meridian the line is single track equipped with ABS and the siding switches do not have dispatcher controlled switches. As a result siding switches are required to be manually aligned whenever a train has to enter a siding. This adds a significant amount of time to train meets especially when a freight train has to take the siding for a passenger train (the conductor must walk the length of the train after the switch is realigned). NS has added spring switches at sidings so that trains can leave a siding without having to stop and realign the siding switch.

While NS and KCS have made improvements at Meridian as a result of the Meridian Speedway initiative, the Meridian Terminal is still an operational challenge.

The line has a significant number of freight trains. In addition to local freight trains serving on-line industries and Amtrak's *Crescent*, the *Improvement Implementation Plan – Meridian to New Orleans* noted that the line is used by an average of 16 through freight trains per day. This is a heavy volume for a single track rail line without CTC. Amtrak's *Crescent* currently utilizes this route taking four hours and two minutes eastbound (including intermediate stops) between New Orleans and Meridian. This equates to an average speed of just over 50 mph.

3.5.2 Corridor Development Plan

New passenger trains, operating with up to six round trips daily at speeds up to 90 mph, will require capacity improvements to ensure fluid passenger and freight operations. Key capacity improvements identified in the *Improvement Implementation Plan – Meridian to New Orleans* are summarized below (see New Orleans Rail Gateway and NOUPT section) and in **Appendix F**. The comprehensive improvements listed in the plan include the bulleted items in Section 3.1.2.

3.5.3 Corridor Stations and Equipment

Stations along this route are Slidell, Picayune, Hattiesburg, Laurel, and Meridian. FY 2011 ridership at the five stations on the route totaled almost 42,000 riders.

3.5.4 Ridership Potential

As part of the aforesaid *Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan*, ridership and ticket revenue forecasts for the New Orleans-Meridian-Birmingham-Atlanta corridor were estimated by AECOM Consult. Forecast assumptions included improved running times, 79 mph and 90 mph speeds, and three frequency options (2 round-trips, 4 round-trips and 6 round-trips). As can be seen in **Table 3-4** demand exists for a more frequent higher speed rail service in the New Orleans-Meridian-Birmingham-Atlanta corridor. However as was noted previously, equipment availability for near-term service initiation is limited.

Table 3-4: New Orleans-Meridian-Birmingham-Atlanta Ridership and Ticket Revenues (2012)

Frequency	Speed	Annual Ridership*	Annual Ticket Revenue*	Avg. Riders per Train	Pass. Mile per Train Mile	Tkt. Rev. per Train Mile
2 RT	79 mph	191,541	\$7,556,000	131	90.9	\$9.99
4 RT	79 mph	305,864	\$12,035,000	105	72.4	\$7.96
6 RT	79 mph	426,119	\$16,183,000	97	64.7	\$7.13
2 RT	90 mph	Not Forecast				
4 RT	90 mph	363,083	\$14,718,000	124	88.6	\$9.73
6 RT	90 mph	467,583	\$18,293,000	107	73.2	\$8.06

Note: *Includes connecting traffic from Houston-New Orleans and Mobile-New Orleans corridors.

Additional forecast details and an overview of the forecast methodology is available in *Volume II, Technical Appendices of the Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan*.

3.5.5 Capital Costs

In conjunction with the in-depth analysis of the proposed New Orleans – Meridian rail passenger service estimates were compiled of the capital costs required to upgrade the rail line in preparation of service. The 2002 report also outlined order-of-magnitude capital costs for track, right-of-way, bridges, signals, and highway crossings is estimated to total approximately \$24 million (initial service) to \$92 million (full service). This estimate includes capital costs within the New Orleans Gateway network and New Orleans Union Terminal discussed above and may include projects also listed in cost estimates for other corridors. While this report included estimates for station improvements, an estimate for equipment was not included. It also did not include estimates of operating costs or required state operating payments. It is important to note that the cost estimates are over 10 years old.

3.6 New Orleans – Jackson – Memphis

One of the features of the Midwest High-Speed Rail Initiative is the inclusion of several feeder routes – routes with fewer frequencies serving markets with smaller populations. In fact, one of the routes is Chicago-Carbondale, the northern end of the *City of New Orleans* route. The southern end of the *City of New Orleans* route, New Orleans-Jackson-Memphis through the center of Mississippi, Hammond and on to New Orleans, could be a feeder route to the Gulf Coast High-Speed Corridor. The additional connectivity offered by this feeder route would extend the benefits of the Gulf Coast High-Speed Corridor trunk system. The concept of additional service between New Orleans and Memphis was

noted in the *Infrastructure Improvement Program for the New Orleans Union Passenger Terminal*, April 2010¹⁶ and in the *Mississippi State Rail Plan*, June 2011.¹⁷

3.6.1 Corridor Description

The route from New Orleans and Memphis primarily utilizes two CN subdivisions, the 97-mile McComb Subdivision running south from Jackson and 206-mile Yazoo Subdivision running north from Jackson. The 2011 *Mississippi State Rail Plan* noted that the McComb Subdivision has 112 to 115-pound welded rail, with ties, ballast and drainage in good condition. There are six controlled sidings on the subdivision, most being from 9,000 to 13,000 feet long. The same report noted that the Yazoo Subdivision has 115 to 136-pound welded rail, with ties, ballast and drainage in fair to good condition. There are 15 controlled sidings on the subdivision, most being from 9,000 to 11,000 feet long. Both subdivisions are single track with short stretches of double track. The subdivisions are signalized with CTC on the single track segments and ABS on the double track portions (except through Orleans Junction to North Mays where a stretch of double track is equipped with CTC). Maximum authorized speed on both subdivisions is 60 mph for freight trains, and 79 mph for passenger trains.

The line has a significant number of freight trains. In addition to local freight trains serving local on-line industries and Amtrak's *City of New Orleans*, the *Mississippi State Rail Plan* noted the operation of an average of 12 through freight trains on the McComb Subdivision and about an average of 16 through freight trains on the Yazoo Subdivision. The *City of New Orleans* currently utilizes this route between New Orleans, Jackson, and Memphis. Northbound between New Orleans and Jackson the trip takes about four hours with an average speed of 46 mph. Northbound between Jackson and Memphis the trip takes about four hours and 30 minutes with an average speed of 50 mph.

As a route with heavy freight traffic and current passenger service, PTC will be in all likelihood in service before any expansion of rail passenger service is undertaken.

Besides overall line capacity, which must be addressed before rail passenger service can be expanded, there is also an area of potential congestion. In Jackson there is an approximately one-mile stretch (Jackson Junction to the KCS Vicksburg line junction) where the KCS and CN share a joint right-of-way through the city (including Jackson Union Station). KCS trains also cross the CN just south of the station. Growth in freight traffic on both railroads and any increase in the number of passenger trains on any lines passing through Jackson will impact track investment requirements.

Also, as part of any planning for additional frequencies on the New Orleans – Jackson – Memphis line of the CN a capacity modeling simulation will need to be undertaken in collaboration with the CN to determine the additional capital improvements required for the route extension. A simulation is a standard practice in the industry to identify line capacity needs. The simulation program uses anticipated freight and passenger volumes and existing line configurations as inputs and measures the results in terms of delay. Line capacity improvements are added as needed to reduce delay to base case levels.

¹⁶ Developed by the Regional Planning Commission.

¹⁷ Developed by the Mississippi Department of Transportation.

3.6.2 Corridor Stations and Equipment

Running south to north CN's former Illinois Central route is the prime rail passenger route linking the major cities of New Orleans, Jackson and Memphis. Key intermediate stops are Hammond and the Mississippi stops of McComb, Brookhaven, Hazlehurst, Jackson, Yazoo City and Greenwood. FY 2011 ridership at the seven intermediate stations on the route totaled over 100,000 riders.

3.6.3 Ridership Potential

Using the Chicago-Carbondale route as guidance it would appear that two additional frequencies could be operated. The first would mirror the current *City of New Orleans* schedule but in the opposite direction, leaving New Orleans in the early morning and arriving in Memphis in the early afternoon. Southbound the schedule would leave Memphis in the late morning, arriving New Orleans in the early evening. This would replicate the service that existed between New Orleans and Memphis before Amtrak began operating rail passenger service. The second additional frequency option would operate between Jackson and New Orleans. It would depart Jackson in the early morning, arriving in New Orleans before noon. The return schedule would leave New Orleans in the late afternoon, arriving in Jackson in the early evening. This frequency would allow same-day trips to New Orleans from mid-state Mississippi and would maximize connections to Gulfport, Mobile and Houston as the Gulf Coast High-Speed Rail Corridor is developed.

Current ridership often gives the best guidance on the potential of additional frequencies. Generally an additional frequency will generate fewer riders on average than prior frequencies. Total route ridership will increase, but absent any improvements in travel time or reliability, average riders per train will decline. In conjunction with the development of the 2011 *Mississippi State Rail Plan*, FY 2009 local ridership for the New Orleans-Jackson-Memphis segment of the *City of New Orleans* was analyzed. Ridership totaled almost 56,000 riders with ticket revenues of just over \$2 million. That is an average of about 76 riders per train, about \$2,767 in ticket revenues per train and \$6.82 in ticket revenues per train mile.

Local ridership for the New Orleans – Jackson segment of the *City of New Orleans* in 2009 totaled almost 27,000 riders with ticket revenues of about \$557,000. That is an average of about 36 riders per train, about \$763 in ticket revenues per train, and \$4.17 ticket revenues per train mile. This proposed frequency would clearly benefit from the additional ridership generated by enhanced connectivity to the Gulf Coast High-Speed Rail Corridor.

With travel time and reliability improvements, enhanced connections combined with focused revenue management and targeted promotion/marketing, these results, at least for the initial frequencies, could probably be improved. However, as was noted previously, equipment availability for near-term service initiation is limited.

Given the New Orleans-Jackson-Memphis route's role as a connecting line to the Gulf Coast High-Speed Corridor, including this route when ridership and ticket revenue estimates for the Gulf Coast High-Speed Corridor are next updated might be helpful. This would provide the level of connecting ridership on the route (for both existing and proposed frequencies) as well as guidance as to when new frequencies on the City of New Orleans route should be started.

Furthermore a rail operations simulation could also be performed to identify the line capacity improvements required to accommodate the anticipated passenger frequencies on the line.

3.7 Meridian – Jackson – Shreveport – Dallas/Fort Worth

As rail passenger service is improved and frequencies added to the New Orleans-Meridian route, new potential route options can be considered for the *Crescent*. One such option was explored by Amtrak in late 1990s when it studied splitting the *Crescent* at Meridian and operating a leg of the train from Meridian to Fort Worth. This ridership and ticket revenue study, undertaken by Amtrak as part of its Network Growth Strategy, found the proposed service worth pursuing.

Meridian – Dallas/Fort Worth service would add significant new markets to the *Crescent*, allow same day connections to Amtrak western routes (the current connection requires an overnight stay in New Orleans), and provide direct service between the end-points of the Gulf Coast High-Speed Corridor (Atlanta) and the Texas High-Speed Rail (HSR) Corridor (Dallas/Fort Worth), which in an earlier iteration was known as the Texas T-Bone and Texas Triangle. This route would also provide new east/west service at Jackson, Vicksburg, and Shreveport. A Dallas/Fort Worth leg of the *Crescent* operating in conjunction with the Gulf Coast and Texas HSR Corridors would mirror European networks where overnight trains link the extreme endpoints of their high-speed systems.

3.7.1 Corridor Description

The Meridian – Fort Worth route is 538 miles long (854 miles Atlanta – Fort Worth), of which about 193 miles are located in Louisiana. The route utilizes rail lines of the KCS and UP. Currently there are no passenger trains operating on most of the route. A 2005 analysis of the route noted the operation of between 10 and 19 through freight trains per day. The maximum authorized timetable speed is 55 mph for freights and 59 mph for intermodal trains. With the extended sidings, track upgrades and CTC between Meridian and Bossier City, the capacity of the line has been increased.

The KCS line between Meridian and Shreveport is a key strategic rail corridor and a new transcontinental rail route. A 2006 agreement between NS and the KCS created joint ownership of the Meridian Speedway with the NS investing \$300 million in the route for track and signaling improvements. These improvements will allow the line to handle twice the number of through freight trains as it did in 2005.

Given the timeline for the installation of PTC, it will likely be in service on this route before any expansion of rail passenger service is undertaken.

Besides overall line capacity, which must be addressed before rail passenger service can be inaugurated, there are two major areas of potential congestion. The first is the approximately one-mile stretch through Jackson (Jackson Junction to the KCS Vicksburg line junction) where the KCS and CN share a joint right-of-way. As was noted earlier the growth in freight traffic and potential new passenger service will impact track investment requirements at Jackson.

Also as noted earlier, significant track and operational changes are being implemented in the Meridian Terminal. At this writing, no provisions for Amtrak beyond the present short station stop/crew change activity have been incorporated into the new design. Provisions for passenger train switching or origination/termination of a separate train at Meridian for the Dallas/Fort Worth leg of the *Crescent* would have to be added to the terminal.

As part of any planning for the Meridian – Dallas/Fort Worth leg of the *Crescent* a capacity modeling simulation will need to be undertaken in collaboration with Norfolk Southern, Kansas City Southern and Union Pacific to determine the additional capital improvements required for the route extension.

3.7.2 Corridor Stations and Equipment

The Meridian – Dallas/Fort Worth route serves the stops of Meridian, Jackson, Vicksburg, Shreveport/Bossier City, Marshall, Dallas, and Fort Worth. Since this train would operate as a leg of the *Crescent*, the new sleeping cars, dining cars and baggage-dormitory cars under construction to replace Heritage equipment would likely be used on this train.

3.7.3 Ridership Potential

Because the *Crescent* is an Amtrak national network train, instituting a Dallas/Fort Worth leg of the *Crescent* needs to be coordinated with Texas, Mississippi, Amtrak and the freight railroads.

Ridership forecasting and an operations simulation are the next logical steps in assessing the potential of this route.

3.7.4 New Study in Corridor

In early 2014, the Northwest Louisiana Council of Governments (NLCOG) will initiate a feasibility study for intercity passenger rail service along the I-20 Corridor in North Louisiana from the Texas state line to the Mississippi state line with principal service from Shreveport to Vicksburg.

3.8 Shreveport/Bossier City – Dallas/Fort Worth

As was noted in the review of past rail studies, there are two recent ongoing studies of the feasibility of passenger rail service between Shreveport/Bossier City, and Dallas/Fort Worth. The route parallels the I-20 corridor which is seeing increased traffic volumes and land development. One analysis is being conducted by Amtrak on behalf of the Texas Department of Transportation using funds obtained by the East Texas Corridor Council, of Longview, TX. The other study is being sponsored by the North East Texas Regional Mobility Authority, of Tyler, TX.

3.8.1 Corridor Description

The Shreveport/Bossier City – Dallas/Fort Worth route is approximately 236 miles long of which about 22 miles are located in Louisiana. The route could utilize the UP (202 miles) and Trinity Rail Express (34 miles) lines. While there is currently no passenger rail service between Shreveport and Marshall, Amtrak operates one daily frequency between Marshall and Dallas, while Trinity Rail Express operates commuter rail service between Dallas and Fort Worth. The UP route between Shreveport and Dallas is a strategic rail freight corridor and its linkage with the Meridian Speedway makes for a new transcontinental rail route segment between Dallas, Meridian and Atlanta.

Proposed by the North East Texas Regional Mobility Authority, an alternative concept is also under development which assumes a new rail right-of-way parallel but apart from the existing UP line, double track, and electrified and an average speed of about 100 mph.

3.8.2 Corridor Stations and Corridor Frequency

Amtrak is studying 11 stops. These are: Shreveport (also serving Bossier City), Marshall, Longview, Mineola, Wills Point, Terrell, Forney, Mesquite, Dallas, Centre Port/DFW and Fort Worth. The Trinity Express Centre Port/DFW stop will allow access to the Dallas/Fort Worth International Airport. Studied will be a conventional (79 mph) Regional Access Train (short-distance rail service under 500 miles linking rural cities with a major metropolitan area), offering two round-trip frequencies per day.

The alternative concept would have a western terminus at DART's Landview Station and an eastern terminus at Shreveport Regional Airport, and intermediate stations. The service would offer 5 round trips per day.

3.8.3 Ridership, Ticket Revenue and Capacity Studies

The Amtrak report will outline ridership and ticket revenue estimates, estimated operating costs and capital requirements for the service. Annual operating costs (less ticket revenue) would be funded by the states. Rail capacity requirements will be determined by the UP, owner of much of the proposed route for the Amtrak service. No implementation cost estimate is available.

Ridership estimates for the alternative higher speed concept were not available. The double track configuration would assure sufficient line capacity. A conceptual cost estimate for implementation is \$3 billion.

3.9 Baton Rouge – Shreveport

This route segment would provide a linkage between Baton Rouge, Shreveport, and ultimately Dallas/Fort Worth, assuming the completion of the Shreveport – Dallas / Fort Worth link (discussed above). The service concept was mentioned in a Public Meeting held in October 2012 for the Louisiana State Rail Plan. However, no detailed assessment of a Baton Rouge – Shreveport connection has been conducted.

That noted, the route, in conjunction with Shreveport – Dallas service, would provide a link between Dallas, Shreveport, Baton Rouge and New Orleans.

The route between Baton Rouge and Shreveport is approximately 220 to 230 miles in length all located in Louisiana. Two parallel rail routes are available, one utilizing the KCS while the other uses the UP. Both routes serve the major mid-route city of Alexandria. Both rail routes are major freight corridors. Currently no rail passenger service operates on either route. For simplicity, just the KCS route between Alexandria and Shreveport is shown in Figure 3-1 as the potential route.

3.10 Amtrak Needs

Amtrak provides intercity rail passenger service on three corridors in Louisiana. The three services are the *Sunset Limited*, operating between New Orleans and Los Angeles; the *City of New Orleans*, between New Orleans and Chicago; and the *Crescent*, between New Orleans and New York.

Amtrak trains stop at seven stations in the state. According to Amtrak's 2009 *A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990*, there were \$9.7 million worth of ADA compliance needs at four stations, with the largest needs at New Orleans Union Passenger Terminal (NOUPT), the nexus of the three intercity services. However, recent platform improvements at Hammond reduced total needs to \$8.9 million.

Assuming a 2.1% annual inflation rate from 2009, the total for the Amtrak station ADA improvements becomes \$9.5 million. Additional needs at NOUPT are discussed in the section that follows.

3.11 New Orleans Rail Gateway and New Orleans Union Passenger Terminal

The New Orleans Rail Gateway network represents another challenge for continued growth of the Gulf Coast Mega Region. As noted earlier, it is the hub for rail passenger service (existing and perspective), interchange point for seven railroads (including New Orleans Public Belt), and transshipment point between land and marine transportation. Most rail movements travel over rail lines controlled by each of seven railroads, in a dense urban area constrained by need to cross waterways at a limited number of points. The jurisdictional complexity, high costs and the difficulties of building in an urban area have limited past efforts to undertake the capital investment needed to address capacity issues.

Looking at all the prospective passenger rail routes outlined below, none can begin without improvements to the New Orleans Rail Gateway. Analysis undertaken in conjunction with several studies shows the interrelationship of New Orleans Rail Gateway track improvements. This is because rail operations are an interconnected network. Capital investments to improve freight operations build capacity for passenger trains, and improvements at New Orleans Union Passenger Terminal (NOUPT) and approach tracks, even those used exclusively by passenger trains, improve the flow of freight trains (even at current rail passenger service levels).

The track condition, layout and capacity of the New Orleans Rail Gateway network impacts the operations of all Gulf Coast High Speed Corridor routes (New Orleans – Gulfport – Mobile, New Orleans – Meridian – Birmingham – Atlanta, New Orleans – Baton Rouge – Lake Charles – Houston and the feeder route of New Orleans – Jackson – Memphis). Current train routes and operations are slow and main lines are often used to stage trains waiting for interchange. Critical legs into NOUPT are single track.

Several Gateway studies have recommended the following:

- A northward connection between the CSXT and NS at NE Tower;
- Renewal of Almonaster Bridge and bypass track around Gentilly Yard;
- Reconfiguration of track and signals at Elysian Fields;
- Signal upgrades/additional track/track realignments at East Bridge Junction;
- Finally, improvements are recommended at Avondale Yard and West Bridge Junction.

If usage of the NS Back Belt rail line through Metairie continues, studies recommend the following:

- Additional track capacity and a modernized signal system;
- Additional crossover and improvement of the alignment of the turnout at East City Junction to NOUPT trackage;
- Curvature reduction at Carrollton Avenue interlocking to increase speeds through the interlocking;
- Grade separation of streets and the rail line through Metairie;
- A third track at Marconi Drive (0.6 miles east of East City Junction) to stage freight trains for interchange.

Alternatively, a new double track rail line (Middle Belt) could be constructed between East Bridge Junction and East City Junction utilizing available right-of-way on the route currently used by passenger trains.

In order to avoid congestion from passenger train “holdouts” on trackage used by freight trains (especially critical for the Middle Belt option) improvements are needed at NOUPT. These improvements will add flexibility and capacity to the existing terminal. The following improvements have been recommended:

- A double track connection between the Terminal throat and yard (North Wye);
- The construction of a double track main from North Wye to Carrollton Junction (connection to the Middle Belt) and the addition of switches and crossovers to connect to both the east and west branches of the main line;
- Upgraded terminal interlocking.
- Long-term an additional track is recommended between East City Junction to Carrollton Junction (the connection from East City Junction to NOUPT) to expand capacity and reduce delays;
- Long-term the construction of an additional track from Carrollton Junction to CN’s Southport Junction.

The following are recommended with the start-up of new rail passenger service:

- Selected additional passenger yard storage and servicing tracks;
- Extension of Tracks 7 and 8 to the terminal;
- Reconnection of tracks 9 and 10;
- Restoration of Track 1.

In addition, new commissary and baggage facilities would be constructed as part of the Howard Street extension project. Also CN recommends a grade-separated flyover for passenger trains at or near East Bridge Junction (location dependent on whether the Back Belt or Middle Belt becomes the preferred freight route).

Needs at NOUPT are related to track improvements for handling existing and anticipated passenger trains, e.g., the Baton Rouge – New Orleans service and new service facilitated by improvements in the Lake Charles – Meridian Corridor, new or restored Gulf Coast service, and potential New Orleans – Memphis service. A total of \$5.6 million of these improvements were cited in the 2010 Baton Rouge – New Orleans commuter rail plan. However, to facilitate additional services and avoid conflicts with freight trains, another set of improvements totaling \$24.5 million in today’s dollars appear prudent¹⁸. These include \$15 million for track improvements at NOUPT and \$9.5 million for the terminal’s support yard. The improvements were cited in the *Infrastructure Program for the New Orleans Union Passenger Terminal*, along with cost estimates for Projects I.2 and I.3 identified in the Baton Rouge – New Orleans plan.

¹⁸ The \$24.5 million cost estimate for other projects was developed as part of the current Louisiana State Rail Plan effort.

In early 2014, the Northwest Louisiana Council of Governments (NLCOG) will initiate a feasibility study for intercity passenger rail service along the I-20 Corridor in North Louisiana from the Texas state line to the Mississippi state line with principal service from Shreveport to Vicksburg.

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Chapter 4.

Proposed Louisiana Freight Rail Improvements and Investments

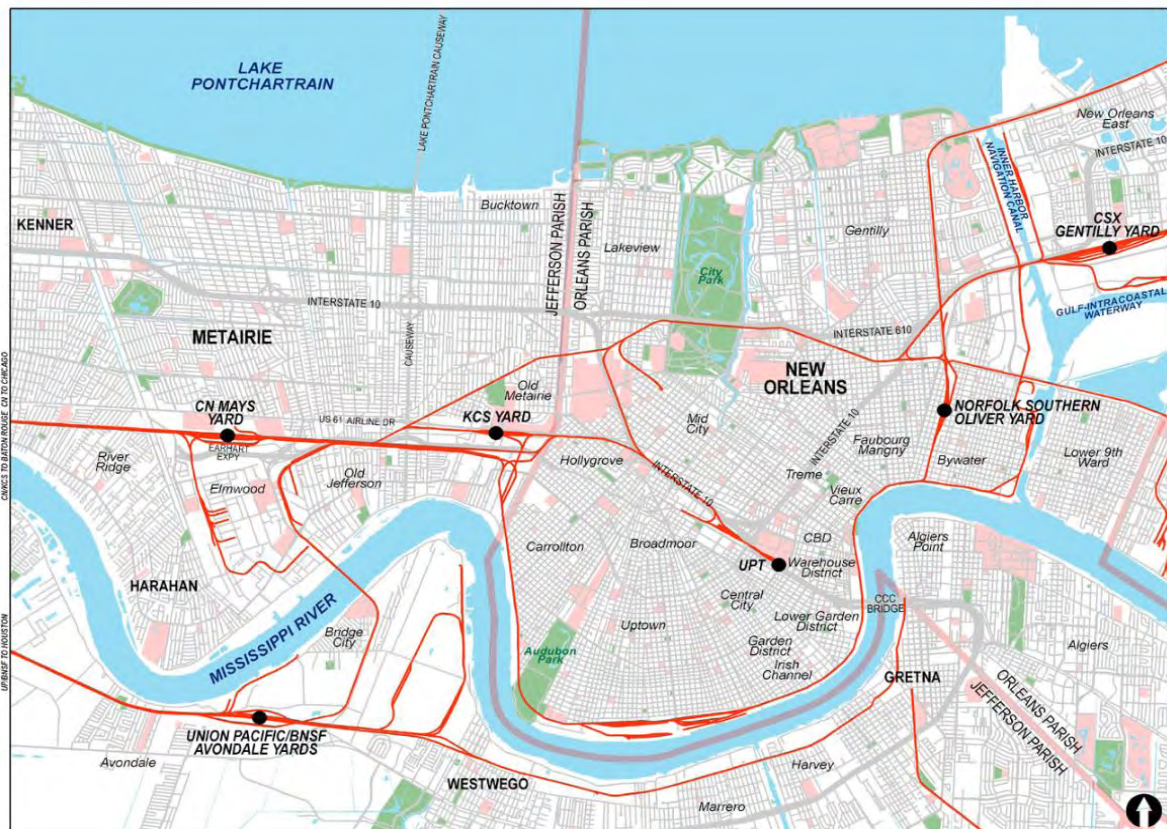
4.1 Introduction

This chapter describes the improvements and investments that could address the freight rail needs of the state. Projects specific to the Class I and short line railroads are discussed. Also appearing below safety improvement needs at freight railroad crossings in Louisiana.

4.2 New Orleans Rail Gateway Project

The New Orleans Rail Gateway area (**Figure 4-1**) serves freight rail traffic from six Class I railroads: BNSF, CN, CSXT, KCS, NS, and UP. It is also a connection point on Amtrak's southern north-south and east-west passenger rail routes. Through the New Orleans Public Belt (NOPB) railroad, the Gateway links the Port of New Orleans, the eighth largest port by tonnage in the U.S., to the national rail network.

Figure 4-1: New Orleans Gateway Project Area



Source: Louisiana Department of Transportation and Development

The Gateway is one of five major rail interchange points between the eastern and western Class I railroads and uses one of the four major Mississippi River rail bridges. It is one of only three national rail gateways that are both rail interchange hubs and major Mississippi River rail crossings. As such, it is a critical link in the national freight rail system.

The Gateway rail network is operating near capacity with freight trains experiencing a combined 30 hours of delay per day. Addressing this delay could expedite the transfer of railcars between the eastern and western railroads, reducing transit time and costs that are borne by shippers, and eventually benefiting the consumer by providing a lower cost of living. Addressing current deficiencies in the Gateway will become increasingly important as the U.S. Department of Transportation's Freight Analysis Framework (FAF) forecasts, with a moderate economic growth of 3%, import and export freight tonnage could double by 2020 and domestic freight tonnage could increase by about 60%. This continued growth of shipping and the resulting port traffic will increase rail traffic in the New Orleans Gateway, including the NS rail line serving the Chalmette area port facilities; rail traffic to and from refineries and chemical terminals in the area; the BNSF/UP rail lines serving shippers on the West Bank; the CN/KCS rail lines on the East Bank; and the NOPB rail line serving the New Orleans port facilities.

4.2.1 Gateway Project

DOTD, the New Orleans Community and the railroads have been examining rail improvements within the Gateway that would reduce delays and improve rail service to rail customers in the greater New Orleans region. The 2002 *New Orleans Rail Gateway & Regional Rail Operations Analysis* and the 2007 *New Orleans Rail Gateway Infrastructure Feasibility Analysis* evaluated the operations of the Gateway and outlined operational and capital improvements. The key improvements involve upgrading either the "Back Belt" rail lines or creating the "Middle Belt" route option in the central section of the Gateway (**Figure 4-2**). Other improvements include closing crossings, reconfiguring trackage and upgrading bridges and signal systems in the West, Central, and Eastern segments of the gateway. The objective of both the "Back Belt" and the "Middle Belt" is to improve the fluidity, reliability, and capacity of the Gateway for the interchange of local industry and Port traffic as well as the exchange of East-West rail traffic.

An engineering/environmental study is underway to identify various rail and roadway improvements, or "Program of Projects", that will reduce vehicle congestion, improve emergency evacuation, improve vehicle and pedestrian safety, and correct rail and roadway physical and operational deficiencies. An Environmental Impact Statement (EIS) will be prepared to evaluate the "Program of Projects" beneficial and adverse effects on the social, economic, and physical environment and identify measures to avoid, minimize, and mitigate adverse community and environmental impacts. The "Program of Projects" will improve the quality of life for residents, increase regional competitiveness, and promote economic growth. In addition, the railroads stand to benefit from more efficient operation and added capacity for future growth. This study is a public-private partnership among DOTD, the New Orleans Regional Planning Commission and six Class 1 railroads represented by the Association of American Railroads. The study is anticipated to be completed in July 2014.

Figure 4-2: New Orleans Rail Gateway “Belts”

Source: Louisiana Department of Transportation and Development

4.2.2 Facilitating Passenger Improvements

As noted in Chapter 3 improvements planned for the New Orleans Rail Gateway will improve performance for existing passenger trains and will facilitate implementation of proposed passenger services. Current train routes and operations are slow and main lines are often used to stage trains waiting for interchange. The Gateway project will improve track condition and add capacity.

4.3 St. James Crude Oil Terminal Rail Expansion

The St. James Rail Terminal (SJRT) is an above ground crude oil and condensate handling and distribution hub located between New Orleans and Baton Rouge. Plains All American Pipeline, LP recently acquired the facility from U.S. Development Group, LLC (USD). USD had recently completed an expansion of the SJRT, doubling the terminal's capacity to 140,000 barrels – or two unit trains – per day. NuStar Energy, of San Antonio, TX, also operates a rail terminal at the St. James location and is investing around \$40 million to double the capacity of its rail terminal to unload 140,000 barrels of oil per day.

SJRT, which began operations in summer 2010, is part of a nationwide network of crude oil/condensate facilities being developed to facilitate the movement of crude oil from various oil shale developments across the upper Midwest to Gulf Coast destinations. The expanded St. James facility consists of approximately seven miles of rail track and a fully automated 52-spot high-speed railcar offloading rack.

Served by the UP, SJRT currently receives unit train shipments of crude oil, condensate and related products from the Bakken, Niobrara and Eagle Ford shale plays. SJRT is connected via pipeline to an adjacent state-of-the-art crude oil/condensate storage terminal operated by Plains Marketing, L.P.

4.4 Ongoing Class I Projects

Class I railroads generally provide the capital necessary for their own network and infrastructure improvements. The railroads reported to the study team that they intend to have capital expenditures totaling about \$110 million per year in Louisiana in the near term. This figure excludes a major \$200 million expansion program announced by UP in February 2012, as described below.

UP is upgrading sections of their track in Louisiana (and nationwide) in an effort to better accommodate longer unit trains (grain, coal, and crude oil) and projected traffic increases in the state, as well as to generally enhance transportation performance. UP launched infrastructure expansion in Louisiana in response to current and projected petrochemical shipments in southern Louisiana. This program includes a new yard in St. James Parish, a capacity improvement project which adds 29 miles of additional track between Livonia and Addis, and more locations to assemble and stage trains in Livonia.

Most of the Class I railroads are also in the process of upgrading their primary rail yards in the state, especially in the New Orleans area, in order to facilitate the velocity and frequency of interchanges and to handle additional rail traffic efficiently. For example, NS is implementing improvements at its Oliver Yard, CSXT at its Gentilly Yard, CN at its Napoleon Avenue Yard, and UP at its Avondale Yard. KCS previously rebuilt and expanded its Deramus Yard in Shreveport and converted it from a standard flat switching yard to an automated hump yard. This key project increased operating efficiency, velocity, and throughput of existing trains through Louisiana as well as accommodating the additional rail traffic generated by the Meridian Speedway corridor service.

4.5 Short Line Needs

In the course of the outreach effort for the State Rail Plan, 11 of the state's 14 short lines reported needs totaling \$526.5 million. Of this amount, \$205 million (or nearly 39% of the total needs) is for upgrading infrastructure to handle heavier railcars. The enhancements are critical to ensuring that shippers located on these lines remain competitive with shippers on Class I lines. All Class I main lines in Louisiana are capable of handling a minimum of 286,000-pound loaded car weights.

An additional \$270 million is needed for a major rail relocation project south of New Orleans. The New Orleans and Gulf Coast Railway is planning a bypass of the city of Gretna to access Mississippi River terminals south of New Orleans. The bypass, to the west of Gretna, has two benefits: more efficient rail operations; and enhanced safety, allowing more than 100 highway-rail at-grade crossings in Gretna to be closed. DOTD is assisting in the project.

The remaining \$51.5 million in needs pertain to short line highway-rail crossing improvements and closures on Louisiana short lines.

4.6 Safety Enhancement Needs

Discussed in Chapter 2, the Highway/Rail Safety Program invests \$8 million per year on improving crossing safety. Of this amount, approximately \$4 million comes from the Federal Highway Safety Program (formerly Section 130 funds). Some of the remainder is obtained from other federal safety improvement funds not specifically earmarked for highways and another \$1 million is available for engineering. Over the last four and a half years the Rail Safety Unit has issued work orders for the railroads to make improvements at various public crossings throughout the state with an estimated total cost of about \$36 million.

To minimize the interface between the rail and highway systems and to reduce grade crossing improvement costs, the Highway/Rail Safety Unit has aggressively pursued crossing closures and they continue to be pursued along Class I railroads where reasonable alternate access is available.

4.7 Positive Train Control Implementation

The six Class I railroads will implement PTC along the following line segments in the state:

- **BNSF** – That portion of track between New Orleans and Lake Charles over which Amtrak’s *Sunset Limited* operates thrice weekly out of New Orleans and thrice weekly into New Orleans. Also any portions of track that carry poisonous-inhalation-hazardous materials.
- **CN** – McComb Subdivision between New Orleans and McComb, MS, over which Amtrak’s *City of New Orleans* service operates one train each way daily. Also any portions of track that carry poisonous-inhalation-hazardous materials.
- **CSXT** – The New Orleans-Orlando, FL section of Amtrak’s *Sunset Limited* used the NO&M Subdivision along the Gulf Coast between New Orleans and Mobile, Alabama, and was suspended in the wake of Hurricane Katrina in 2005. PTC would be installed on this portion in conjunction with any future resumption of passenger rail service. Also any portions of track that carry poisonous-inhalation-hazardous materials.
- **KCS** – No passenger trains operate over KCS lines in Louisiana. However, all portions of track that carry poisonous-inhalation-hazardous materials are subject implementation of PTC.
- **NS** – That portion of track between New Orleans and Meridian, MS over which Amtrak’s *Crescent* service operates one train each way daily. Also, any portions of track that carry poisonous-inhalation-hazardous materials.
- **UP** – That portion of track between Lake Charles and Houston over which Amtrak’s *Sunset Limited* operates thrice weekly. Also any portions of track that carry poisonous inhalation-hazardous materials.

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Chapter 5. Louisiana's Rail Service and Investment Program

5.1 Introduction

This chapter describes the state's long-term vision for rail service and its role in the statewide multimodal transportation system. It addresses the specific projects, programs, policies, laws, and funding necessary to achieve the rail vision and describes the related financial and physical impacts of these proposed actions.

5.2 State Rail Vision

Louisiana's rail vision was developed through reviewing the common themes from the public and stakeholder outreach effort described in Chapter 6. The rail vision statement adopted by DOTD is provided below, along with its supporting freight and passenger rail service objectives.

5.2.1 State Rail Vision

As noted above, Open House participants at New Orleans, Baton Rouge, and Shreveport identified elements that should be included in a state rail vision. In addition, comments were gathered from the State's short lines, rail shippers, and passenger rail interests about what they need and want as users of the State's rail system.

Based on the comments obtained through this outreach effort, DOTD has developed the following vision statement for rail transportation in the State.

The future Louisiana rail system will provide safe, reliable mobility for people and goods. In addition, it will contribute to a more balanced transportation system, economic growth, a better environment and energy conservation. The state's rail infrastructure and levels of service will expand to provide increased transportation efficiency, cost effectiveness, accessibility, capacity, and intermodal connectivity to meet freight and passenger market demands through an investment plan which includes public-private partnerships. To further this vision, the state will take a leadership role in planning rail service improvements.

5.2.2 Freight Rail Objectives

With a vision articulated, the Rail Plan needs to define specific service objectives to guide State action in the development of its rail system. Set forth below are objectives for freight rail operations and investments in Louisiana. Origins for these objectives were obtained from the stakeholder outreach process described in the following chapter.

- Improve the interchange of Class I rail traffic in New Orleans.
- Increase the number of miles of track capable of 286,000-pound car weights on the State's short line railroads.
- Minimize accidents, injuries, and fatalities at highway-rail grade crossings in Louisiana through crossing closures, safety improvements and grade separations.

- Encourage economic development through investments in the rail system, e.g., improved access to marine and river ports, new intermodal facilities, and new industrial leads and spurs.
- Establish a designated Rail Program empowered to assist in funding rail improvements.
- Leverage public-private partnerships for funding rail improvements.

5.2.3 Passenger Service Objectives

Set forth below are objectives for passenger rail operations in Louisiana.

- Enhance existing services – maintain and improve existing stations.
- Engage the freight railroads in new passenger rail planning initiatives.
- Continue outreach to stakeholders.
- Develop funding strategies for passenger rail initiatives.
- Encourage multimodal integration.

5.3 Integration of the Rail Vision with Other Transportation Plans

This State Rail Plan is intended to integrate and expand upon the Louisiana Statewide Transportation Plan which currently being updated.

As noted in Chapter 1, the goals of the Statewide Transportation Plan are:

- **Infrastructure Preservation and Maintenance** – Preserve Louisiana's multimodal infrastructure in a state of good repair through timely maintenance of existing infrastructure.
- **Safety** – Provide safe and secure travel conditions across all transportation modes through physical infrastructure improvements, operational controls, programs, and public education and awareness.
- **Economic Competitiveness** – Provide a transportation system that fosters diverse economic and job growth, international and domestic commerce, and tourism.
- **Community Development and Enhancement** – Provide support for community transportation planning, infrastructure and services.
- **Environmental Stewardship** – Ensure transportation policies and investments are sensitive to Louisiana's environment, history, and culture.

The State Rail Plan addresses each of these Statewide Transportation Plan goals. For example, the State Rail Plan calls for:

- Investments in short line railroads' *infrastructure* to assure their ability to handle heavy weight carloadings.
- Continued *safety*-related investments in grade crossing improvements, closures, and grade separations.

- Investments to improve access to ports and in the New Orleans Rail Gateway Project, which will ensure the *economic competitiveness* of both the State and the New Orleans Class I interchange.
- Continuing outreach to the public, *communities*, and other stakeholders to assure the their wants and needs with regard to rail transportation are heard; and,
- Support of passenger rail and multimodal integration that work to shift freight and passenger traffic to more *environmentally friendly* rail transportation.

As Louisiana also shares rail corridors and services with other states, it is also essential to coordinate with other states through both direct interaction and through comprehensive review and analysis of State Rail Plans prepared by other states in the region. DOTD will submit the draft Plan to surrounding states for their review and comment. As the regions' states have developed and completed their plans over the course of the past five years, it is likely that this coordination of Plan content will increase as states begin to update their plans. These updates are required every five years per PRIIA.

FRA was directed by PRIIA legislation to develop a Preliminary National Rail Plan to address the rail needs of the U.S. The Preliminary National Rail Plan, published in October 2009, provided objectives for rail as a means of improving the performance of the National Transportation System, which include:

- Increased passenger and freight rail performance
- Integration of all transportation modes to form a more complementary transportation system
- Identification of projects of national significance
- Providing for increased public awareness

A final National Rail Plan will account for state rail planning practices and reflect the issues and priorities addressed in various state rail plans. The National Rail Plan is intended to be developed through the integration of individual State Rail Plans. DOTD will work with FRA and other states in the region to ensure that the regions' rail perspectives and issues are adequately addressed within the final National Rail Plan when it is published.

In addition to the need to coordinate the state's Rail Plan with the National Rail Plan and Freight Network, Louisiana will also coordinate as necessary with the U.S. Military Surface Deployment and Distribution Command's Transportation Engineering Agency, which oversees the federal National Strategic Rail Corridor Network (STRACNET). As noted in Chapter 2, STRACNET is comprised of a 32,000-mile interconnected network of rail corridors and associated connector lines most important to national defense.

5.4 Proposed Organizational or Policy Changes

There is presently no designated state rail authority in Louisiana. Rather, DOTD conducts rail planning along with other modal planning. The establishment of a designated Rail Program at DOTD is identified above as an objective of the State Rail Vision necessary to focus resources to successfully secure federal funding assistance to short lines, further progress on the New Orleans Rail Gateway, and assist in the development of new passenger rail initiatives.

5.5 Potential Effects of Rail Program Implementation

In this section, the passenger and freight rail projects for this 20-year plan are identified, along with the potential effects of these projects. Projects enhancing the safety of at-grade crossings through safety improvements, closures and grade separations are also noted below with freight rail projects. The short range projects (first four years) and long range projects (latter 16 years) are listed in **Appendix G** (short range) and **Appendix H** (long range). The total estimated cost of all projects in the 20-year Rail Program is \$1.7 billion.

5.5.1 Passenger Rail Investments

5.5.1.1 Amtrak Station Upgrades

The projects anticipated are capital upgrades to the Louisiana Amtrak stations for compliance with the Americans with Disabilities Act (ADA) and a State of Good Repair. The stations include New Orleans, Lafayette, and Lake Charles. These stations are owned by their respective cities, and the public benefits of these investments are assurance of ADA-compliance as well as the safety and serviceability of the stations for the traveling public. The estimated cost of these upgrades is \$9.5 million in current dollars. Funding sources include the Passenger Rail Service Corridor program, TIGER and local sources. The upgrades are identified for the near term (first 4 years).

5.5.1.2 Baton Rouge – New Orleans Intercity Rail

The total project for full implementation is estimated at \$522 million, as noted in Chapter 3. However, an ongoing update of that study has estimated a cost of \$262 million for a more limited implementation of two round trips daily. Of this amount, \$75 million for grade crossing improvements and replacement of the Bonnet Carré Spillway bridge is of the highest priority in the short term.

The primary public benefit will be enhancement of mobility and reduction of traffic congestion on Interstate 10 between Baton Rouge and New Orleans. The route could also serve as an evacuation route in case New Orleans is flooded, as it was during Hurricane Katrina. Funding sources for this project have not been determined. Once the service is implemented, there will ongoing operating subsidies (operating costs less revenues). These likely will be funded through local sources.

5.5.1.3 Shreveport/Bossier City – Dallas/Fort Worth and Future Extensions

There are alternative concepts for the implementation of the Shreveport – Dallas train service. One study is being sponsored by the East Texas Corridor Council and conducted by Amtrak and the Texas Department of Transportation. Another is being sponsored by North East Texas Regional Mobility Authority.

The former anticipates running a conventional Amtrak operated service on existing freight railroad tracks. No cost figure was available for this concept. The latter envisions a new rail right-of-way with an electrified service and higher speeds, e.g., with top speeds of 110 to 150. A preliminary cost estimate for this is \$3 billion.

DOTD anticipates that some elements of implementation may be pursued in the near term. Full implementation will occur in the longer term. The primary public benefit will be enhancement of mobility. Funding sources for this implementation and operating subsidies have not been identified. Potential extensions could be to Vicksburg and Meridian, MS. In 2014, the Northwest Louisiana Council of Governments will study the feasibility of service between Shreveport and Vicksburg. A

Meridian connection would enable a through service between Dallas/Fort Worth, Atlanta and East Coast destinations including Washington, DC, Philadelphia, and New York City.

5.5.1.4 New Orleans – Gulfport – Mobile Intercity Rail

DOTD also anticipates the long-range implementation of New Orleans – Gulfport – Mobile intercity service. DOTD has estimated its contribution to the capital costs at \$5 million.

5.5.2 Freight Rail Investments

5.5.2.1 New Orleans Rail Gateway

The current total estimated project cost is \$496.8 million, which is expected to go higher. Ten percent of the project (\$49.7 million) will be implemented in the near term, with the remainder (\$447.1 million) in the long term. The chief private benefits include speedier interchanges for the Class I railroads, with resulting operating cost savings. The chief public benefits are the closures of numerous grade crossings, resulting in enhanced safety and congestion mitigation, i.e., elimination of traffic delays at crossings. Potential funding sources in the near term include the federal TIGER, CMAQ, Rail Line Relocation, and Projects of National and Regional Significance programs; state and local sources; and railroad contributions. Longer term sources are undetermined at present.

5.5.2.2 Short Line Railroad Track Upgrades

The total project costs are estimated to be \$205 million. Twenty percent of the project costs (\$41 million) will be financed in the near term, with the remainder (\$164 million) in the long term. The chief private benefits will be the ability of short lines to better serve their customers, being able to handle heavier carloadings (286,000 pounds), and improved operating costs. The chief public benefits will be assurance of short line viability and preservation of competitive transportation options for shippers. Potential funding sources include the TIGER program and railroad contributions. Longer term sources are undetermined at present.

5.5.2.3 NOGC Rail Relocation

The total project cost is \$270 million. Fifteen percent of the project (\$40.5 million) will be implemented in the near term, with the remainder (\$229.5 million) in the long term. The chief private benefits will be improved access to Mississippi River ports for the NOGC, and thus an enhanced competitive position. The chief public benefit is the closure of more than 100 grade crossings in Gretna and the surrounding area – a major safety and livability enhancement. Potential funding sources include the TIGER, Projects of National and Regional Significance, and Rail Line Relocation programs. Longer term sources are undetermined at present.

5.5.2.4 Other Short Line Railroad Needs

Additional improvement projects for Louisiana short lines total \$51.5 million. The improvements include road closures and crossing improvements on lines belonging to the Acadian Railway, the New Orleans Public Belt Railway, the Louisiana Southern Railroad and Port Rail Link at the Port of Lake Charles. These projects were identified by the railroads during the outreach process. The primary public benefit is enhanced safety. The primary private benefit for the railroads is the reduction or elimination of potential liability for accidents at these crossings. These improvements are anticipated in the long term. Funding sources are undetermined at present.

5.5.2.5 Crossing Safety Improvements

DOTD's annual program for grade crossing improvements totals to about \$9 million per year. In the near term, identified crossing projects sum to \$11.2 million. The chief public benefit will be enhanced safety at the crossings. The funding sources are the federal High Priority Project funding (80 percent) and state funding (20 percent). The specific crossing improvement projects are cited in Appendix G.

5.5.2.6 Grade Separation Projects

DOTD's annual program for grade separations also totals to about \$9 million per year. Near term projects sum to \$37.2 million, and long term projects to \$72.7 million. The primary public benefits of the projects are enhanced safety and improved mobility. The funding sources are federal High Priority Project funding (80 percent) and state funding (20 percent). Specific grade separation projects appear in Appendix G and H.

5.6 Rail Passenger Project Impact and Financing Analysis

New intercity passenger rail projects will have some level of positive impact on overall rail passenger ridership, rail passenger miles travelled, modal diversion from highway and air, and increased rail passenger revenues and/or reduced costs.

As noted previously, Louisiana has a limited amount of control over the rail passenger operations within the State. Amtrak operates three long distance intercity rail passenger services in Louisiana, and those operations within Louisiana represent only a portion of the total service area of the operations. Intercity rail between Baton Rouge and New Orleans has yet to be implemented, and, should it happen, it will likely be sponsored by the local jurisdictions served rather than by the state. These limitations also reduce the state's ability to significantly affect positive impacts on other modes or influence major modal diversion.

Amtrak has total fiscal responsibility for its long-distance routes. In Louisiana there are no state-supported corridor routes where the state has the financial responsibility for operating losses but also a voice in the expected performance and operation of the service. Therefore, Louisiana is limited in the means available to improve overall service levels of Amtrak trains; and any capital investments related to the intercity rail corridor must be made at the regional level with concurrence by other states served by the route as well as the host railroad(s).

However, two passenger rail initiatives are underway in Louisiana: intercity service between Baton Rouge and New Orleans; and between Shreveport/Bossier City and Dallas/Fort Worth, with potential extensions to Vicksburg or Meridian, MS and NS's Crescent Corridor there. DOTD is a member of the Southern Rail Commission, which seeks ultimately to implement higher speed service between New Orleans and Houston, between New Orleans and Atlanta, and between New Orleans and Mobile.

The Rail Plan calls for improvements at Amtrak stations in the state. These improvements, which will result in compliance with ADA and State of Good Repair standards, will provide increased access to the rail services provided.

Given Louisiana's lack of control over these rail passenger corridors' physical and operational characteristics, it is recommended that DOTD limit public investments to specific, strategic projects that help secure or improve service, increase ridership and provide commensurate public benefits. DOTD can also work to expand rail passenger service's reach through low cost transit connections and coordinate with other states toward larger, regional solutions.

5.7 Rail Freight Project Impact and Financing Analysis

In recent years, DOTD has focused its freight rail-related efforts in three main areas. These are:

- Facilitating the implementation of the New Orleans Rail Gateway project.
- Assisting short line railroads to acquire funding for their improvements for infrastructure upgrades for heavier carloadings, crossing improvements, crossing closures, and rail line relocations.
- Enhancing safety at crossings by implementing safety improvements and grade separations.

The state's proposed short-range and long-range freight projects reflect a continued focus in these areas. The New Orleans Rail Gateway will be completed within the 20-year time frame of this Plan. DOTD will continue to support short lines in securing federal funding for their projects, and it will also continue to make major investments in crossing safety.

As noted in Chapter 1, the DOTD is currently precluded from spending state funds for the benefit of private railroads. However, with the establishment of a designated Rail Program, DOTD can expand its efforts to assist in funding rail improvements on private railroads that serve Louisiana shippers and perhaps one day might host new passenger rail services in the State.

5.8 Recommended Planning Studies

Analysis of Louisiana's rail network and comments received through the Plan's outreach effort pointed to interest in new intercity rail options, which could easily be studied. These included:

- Service between Shreveport and Meridian, which could extend Dallas/Fort Worth - Shreveport/Bossier City service to Atlanta and East Coast cities.
- Service on the KCS/UP line between Shreveport, Baton Rouge and New Orleans.

In addition, transit connectivity with new intercity rail services should be explored as a means to enhance access to the service and reduce dependence on auto travel to and from stations. This could include new Thruway bus service linking Shreveport with the *Texas Eagle* in Texarkana, TX.

5.9 Passenger Rail and Freight Rail Capital Projects

The projects identified in Section 5.4 are listed with greater detail in Appendix G and Appendix H. A summary tally of the projects, prioritized as short-range and long-range projects, appears in **Table 5-1**.

Table 5-1: Louisiana Rail Program of Projects

Short-range Needs in Years 1-4	Cost in Millions
New Orleans Rail Gateway	\$49.7
286K upgrade for short lines	\$41.0
NOGC rail relocation	\$40.5
Station improvements	\$9.5
Crossing improvements	\$11.2
Grade separations	\$37.2
Shreveport - Dallas intercity rail*	\$30.0
Baton Rouge - New Orleans intercity rail*	\$75.0
Total	\$294.1
Long-range Needs in Years 5-20	Cost
New Orleans Rail Gateway	\$447.1
286K upgrade for short lines	\$164.0
NOGC rail relocation	\$229.5
Grade separations	\$72.7
Other short line needs	\$51.5
Shreveport - Dallas intercity rail*	\$270.0
Baton Rouge - New Orleans intercity rail*	\$447.0
New Orleans – Mobile intercity rail*	\$5.0
Total	\$1,686.8
Rail Program Total	\$1,980.9

Note: *Excludes annual operating subsidy.

The figure identified above for the Shreveport – Dallas intercity rail project is \$300 million in total (short range and long range). This figure represents 10% of the preliminary cost estimate (\$3 billion), which in turn corresponds to the proportion of the route in Louisiana.

Currently, all passenger services in Louisiana are provided by Amtrak without a subsidy provided by the state. Planning studies are presently underway for new intercity rail initiatives in the state.

Chapter 6.

Coordination and Review

6.1 Introduction

The Stakeholder Outreach effort conducted for the Louisiana State Rail Plan was comprised of five elements:

- Public outreach, conducted through three Public Meetings in different parts of the state.
- Solicitation of input from the state's railroads and the state railroad association.
- Outreach to selected rail shippers.
- Engagement with the Freight Rail Advisory Council established for the Statewide Transportation Plan.
- Outreach to passenger rail interests, representing Louisiana and neighboring states.

The purpose of this outreach effort was to provide adequate and reasonable notice of the state's intent to develop a State Rail Plan and an opportunity for rail freight and passenger stakeholders in Louisiana to offer comments on existing services and potential improvements for the future.

In general, the outreach effort revealed interest in passenger rail services, support for infrastructure improvements for Class I and small railroads, and a concern with grade crossing safety. A detailed description of the outreach process and feedback is described below.

6.2 Stakeholder Outreach Approach

The development of a Stakeholder Outreach Program was one of the first components of the project planning task for the State Rail Plan. The program called for the development of public outreach tools, and a comprehensive public outreach effort that included public meetings and interviews of various stakeholders involved in or affected by the state's rail system. Each of these stakeholder participation elements is described below.

6.2.1 Public Outreach Meetings

Three public outreach meetings on the State Rail Plan were held in October, 2012. These were in New Orleans, Baton Rouge, and Shreveport. The meetings were advertised in the local press, and meeting notices appeared on the DOTD website.

Poster boards which displayed the State Rail Plan process as well as maps of the Louisiana rail system were provided for public view prior and during each session. Following introductions the consultant team provided a presentation outlining the requirements and purpose of rail plans and moderated discussion of both a rail vision for the state and rail-related issues.

A total of 85 people attended the public meetings. Participants included representatives from short line and terminal railroads, MPOs, ports, parishes, the Sierra Club, transportation planning and engineering companies, along with students and private citizens.

Attendees saw a presentation on the State Rail Plan purpose and process as well as on preliminary findings. Participants were asked to fill out comment cards and surveys aimed at capturing their interests and concerns with regard to rail transportation in Louisiana.

Public comments are summarized below. More detail on the public comments and the outreach effort to all other stakeholders appears in **Appendix I**.

6.2.2 Railroad Outreach

All Class I, short line, and terminal railroads were contacted for their input to the State Rail Plan. Sought from the Class I's were their investment plans for the foreseeable future, as well as insight in any major rail capacity bottlenecks in the state. Class I railroads typically fund their improvements largely through internal cash flow. Short line railroads in large part have a more challenging time self-funding improvements and often seek capital assistance from the federal and state governments.

The Louisiana State Railroad Association (LSRA) was also contacted for insights on railroad needs. The LSRA represents the railroad industry before government and regulatory authorities and the state legislature.

6.2.3 Rail Shipper Interviews

The most direct method of determining the status/condition of the rail network in Louisiana and soliciting the infrastructure, operational, policy, or other needs of these stakeholders with regard to rail operations is through interviews or surveys. Shippers served by Class I and short line railroads were interviewed for their perspectives on their rail service. Shippers were identified by DOTD, consulting team members, and serving short line railroads. An effort was made to interview railroads representing a mix of major commodities handled by rail. In all 15 shippers were interviewed by telephone: seven served by Class I railroads and eight by small railroads.

Shippers were asked to comment as to problems or issues with rail service, potential infrastructure or operational improvements that could increase their rail use, and regulatory restrictions that impact rail service. Shippers were also asked their opinion as to the value of a public rail retention and infrastructure program, or any other means that the public sector could provide to assist or enhance rail service to local industries, and their general views as to the future of local rail freight service.

6.2.4 Freight Rail Advisory Council Meetings

The State Rail Plan effort was conducted as part of the effort to update the Louisiana Statewide Transportation Plan. For the latter plan, three Freight Rail Advisory Council meetings were held in Baton Rouge: one in March, another in October 2013, and a third in January 2014. Membership of these councils included Class I and short line railroads, shippers, the LSRA, DOTD Rail Section personnel, and other freight rail interests. At the first meeting, the consulting team made a presentation on the State Rail Plan process, and then solicited ideas from the assemblage about work that DOTD should be doing to help improve freight rail services in Louisiana. In the second meeting, the council was asked to refine the ideas and prioritize them as recommendations. In the third, the council offered comments on the state rail vision, its supporting service objectives, and recommendations and next steps.

6.2.5 Passenger Rail Outreach

Passenger rail stakeholders were contacted by telephone or e-mail for their perspectives on passenger service needs and opportunities in the state. Contacted were Amtrak, the intercity rail service provider; the Southern Rail Commission, of which Louisiana is a member and which has studied new and improved passenger rail services between Atlanta, New Orleans and Houston; and the National Association of Rail Passengers, a non-profit passenger rail advocacy group.

6.3 Coordination with Neighboring States

In its *State Rail Plan Guidance* (issued in September 2013), the FRA identified a need to describe how a State Rail Plan was coordinated with neighboring states with respect to facilities and services that cross state boundaries. DOTD routinely interacts with neighboring states through involvement in national and regional transportation organizations and to address specific transportation issues as necessary. The draft Louisiana State Rail Plan will be made available to neighboring states for their comment, and their comments or recommendations will be considered and addressed as appropriate in the final State Rail Plan.

6.4 Stakeholder Involvement in the State Rail Plan

Rail-related issues which were expressed during stakeholder interviews, surveys or outreach sessions were utilized to complete a number of the State Rail Plan components.

During the outreach meetings time was set aside to solicit views as to the state's vision for rail transportation as well as to identify general and specific rail issues. This information was documented and presented DOTD was used to develop a draft rail vision and supporting rail service objectives that were submitted to DOTD for review and approval.

Information obtained as a result of stakeholder interviews was utilized to develop and modify profile information as necessary, to identify infrastructure, operational, and regulatory issues, and to ascertain stakeholders' views on the effectiveness of the state's current involvement in rail planning and oversight as well as strategic roles the state could play in the future to address existing needs.

The following summarizes the most significant issues raised during the outreach process.

6.5 Issues Raised by Stakeholders

6.5.1 Summary of Public Meeting Input

Various themes were identified from the comments voiced by public outreach meeting attendees and noted in the surveys and comment cards. Among these are:

- Interest in Baton Rouge – New Orleans intercity service, in Shreveport/Bossier City – Dallas/Fort Worth intercity service, and in restoration of Gulf Coast service.
- Interest in freight rail projects, particularly for short lines, connections to ports, and the New Orleans Rail Gateway project.
- Interest in state support of freight and passenger rail projects; and in a dedicated funding source for rail projects.

- Concern regarding grade crossing safety.
- Interest in public-private partnerships as another means of helping to realize projects.
- Interest in rails-to-trails and rails-with-trails programs.
- Attention to rail impacts to communities from rail improvements.

Attendees expressed their fears of declining economic fortunes for the state if investments in rail were not made.

6.5.2 Summary of Railroad Outreach

While the Class I railroads have the ability to fund improvements themselves, the state's short line railroads generally do not. Most of these railroads haul rail traffic between their shippers and their Class I connection, for which they receive a switching fee. Fee revenues may be inadequate to fund line improvements. Accordingly, the short lines see a need for state assistance, especially to help the railroads upgrade their lines for handling 286,000-pound loaded car weights.

6.5.3 Summary of Railroad Shipper Comments

Shippers acknowledged the importance of their rail connections, but also cited various areas ripe for improvement. Class I "captive" shippers (shippers serve exclusively by one large railroad) noted that their serving carriers charge prices for transportation services that are too high, while others complained of slow and undependable service. For short line shippers, line improvements like upgrades for 286,000-pound loaded car weights are a distinct need. To this end, these shippers felt the state should have a rail retention and infrastructure program for helping to realize these improvements. Furthermore, some felt that the state could also have a role interceding with their Class I connections and helping to mediate disputes.

6.5.4 Summary of Freight Rail Advisory Council Comments

There were eight specific recommendations pertaining to DOTD rail activities Freight Rail Advisory Council. These included designation of a Rail Program at DOTD and staffing it appropriately to help all the state's railroads secure federal grants and loans. It also called for providing state funding for rail infrastructure improvements. When asked to prioritize the recommendations, the council members agreed that all were equally high priority recommendations.

6.5.5 Summary of Passenger Rail Outreach

Evident from comments made at the public meetings, there continues to be interest in passenger rail initiatives. These include Baton Rouge – New Orleans intercity service, restoration of Gulf Coast Amtrak service, and new higher speed routes, running to the west to Houston and the northeast to Birmingham and Atlanta, and Shreveport/Bossier City – Dallas Fort Worth. At the same time, there is recognition that there is no funding source available for any of these concepts.

6.6 Stakeholder Input Incorporated in State Rail Plan

The comments and recommendations received through all aspects of the public outreach process were presented to DOTD. These comments and recommendations were utilized in the development of the state rail vision and supporting service objectives outlined in Chapter 5.

Based on these inputs, DOTD will work toward the following initiatives:

- Designate a Rail Program, with the primary mission of helping the state's railroads, and particularly short lines, secure federal funding for improvements, such as ensuring 286,000-pound carload capacity on lines where shippers demand it.
- Support the establishment of a state-funded rail retention and infrastructure program for helping to realize these improvements and maintaining lines in a state of good repair. This program could have a potential budget in a range of \$10 million to \$25 million per year.
- Continue to support the New Orleans Rail Gateway project and port-access improvements such as the Gulf Coast Rail Relocation project.
- Continue to promote and enhance rail safety at crossings.
- Continue to work with neighboring states on rail initiatives which benefit the region; continued participation in the Southern Rail Commission on both passenger and freight initiatives.
- Support the improvement of existing Amtrak services and Amtrak stations.
- Support the development of new intercity rail initiatives that enhance mobility options for Louisianans.

6.7 Coordination with Other State Planning Efforts

As noted, the Louisiana State Rail Plan was developed as part of the Louisiana Statewide Transportation Plan currently being assembled. Recommendations of the State Rail Plan are being incorporated into the Louisiana Statewide Transportation Plan.

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Appendix A.

Other States' Passenger Rail Experience

A.1 Overview

What follows is a summary of selected experiences of other states with regard to passenger rail services. These experiences provide examples of how existing passenger rail services in Louisiana could be enhanced.

A.2 Other States' Experience

A.2.1 Passenger Information and Personalized Service

One feature of North Carolina's state-sponsored rail service is the personalized service and the information offered the traveler. The state has more than 100 volunteers in its Train and Station Host Association. Riding the *Piedmont* and the *Carolinian*, these train hosts serve as North Carolina goodwill ambassadors and add a welcoming dimension to the service. On-board the train and in stations the hosts assist passengers and provide information about passenger services, the train route, ground transportation, and area attractions. A similar volunteer program could be undertaken at Louisiana stations and on trains traveling into New Orleans, with ambassadors welcoming and assisting passengers with information on taxi and bus connections, hotels and destinations. On trains, the program could supplement the National Park Service's Trails and Rails Program.

A.2.2 Promotion

Promotion of existing rail service is the first step in building awareness and usage of the rail mode. The New Orleans tourism website lists Amtrak on its Transportation page with a link to Amtrak.com. Although there is an Amtrak advertisement, rail service is not mentioned in the New Orleans Official Visitors Guide. The Downtown Alive section of the Lafayette city website mentions Amtrak and has a link to Amtrak.com. Amtrak is mentioned on the Hammond Chamber of Commerce website. However, there is no mention of Amtrak or rail passenger service on the Louisiana Travel website or in the Louisiana Travel Guide.

There are opportunities to improve the promotion and marketing of rail passenger service. A good example is Santa Barbara, CA. The county air pollution control district coordinated the development of the ongoing Santa Barbara Car Free promotion. This promotion links Amtrak, local transit carriers, hotels and attractions. All of the participants in this program work together to provide detailed information on how to visit and enjoy Santa Barbara without an automobile. The promotion offers travel discounts, sample itineraries, a transit route linking key visitor attractions, walking tours and local guided tours. Several other cities in California – San Diego, San Francisco and San Luis Obispo – have adopted this promotion theme. With its extensive transit system, walkable entertainment quarter and focus on Smart Growth, New Orleans is an ideal fit for such a program. Small cities with historic downtowns could also adopt this promotion.

A.2.3 Enhancing Rail Freight Capacity

The State of Washington has a very active rail passenger and freight program. One of the hallmarks of the program is an integrated freight and passenger rail system perspective with the goal being to

increase the capacity of both as projects are identified and implemented. In addition to addressing the specific capacity concerns of the freight railroads as rail passenger service is increased, the state also has the long-term goals of maintaining its role as a key hub for international trade and maintaining and expanding intrastate rail shipments (especially of bulk commodities). The latter effort helps to reduce its highway maintenance and capital needs and reduces highway congestion from heavy trucks. With the Class 1 railroads focused on meeting their needs for long-haul traffic, the state is adding additional capacity to make lower gross revenue short-distance traffic attractive.

Some notable projects are:

- **Vancouver, WA Rail Bypass** – Vancouver, WA is one of Washington State's major ports, especially for bulk commodities. The new bypass track and port rail connection will add capacity for additional passenger trains but will also reduce rail congestion, increase freight rail velocity and in conjunction with other public/private rail projects in the port area greatly enhance the capability and capacity of the port. Completion of a new road bridge over the rail line is enhancing the livability for adjacent neighborhoods.
- **Mt. Vernon Siding Upgrade** – The siding at Mt. Vernon, WA was in poor condition and could not be used by Amtrak trains, thereby limiting schedule flexibility. The siding was also too short to be used by current freight trains. A public/private partnership is upgrading and lengthening the siding to improve operational efficiency and increasing passenger and freight train capacity of the line. The upgrade also includes road improvements to eliminate highway delays when the siding is being used for train meets.
- **Kelso Martin's Bluff-Kelso to Longview Junction** – With the growth of traffic to the Port of Longview, rail congestion is growing at Longview Junction. As part of Washington State's High Speed Rail Program, existing tracks are being upgraded, and a third main track leading toward Longview Junction is being added. This additional capacity will allow Port of Longview freight trains to enter and leave the yard freely without delaying Amtrak Cascades passenger trains or through freight trains to the Ports of Tacoma and Seattle.
- **King Street Station** – King Street Station is the main passenger rail station in Seattle. It is also adjacent the BNSF's main line as it enters a tunnel under downtown Seattle. The project relocates the BNSF main line to accommodate the construction of separate passenger tracks linking the station and the passenger rail maintenance facility. This allows passenger trains to travel between the yard and the station without delay and without delaying freight trains. By eliminating the need to use the freight main line at this location, an area constrained by city development, the project increases freight capacity.

A.2.4 Unified Support

Action by the members of the Midwest Regional Rail initiative – Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin – in signing the Memorandum of Understanding (July 2009) is cited as a strong indication of unity among Midwest states. By cementing an agreement among the states to work cooperatively in supporting and understanding the importance of the network and key connections at the Chicago hub, even if it meant that projects in member states might be deferred to later stages, the memorandum served to demonstrate the value that federal investments in the Midwest region would yield.

The upgrading of the Chicago-St. Louis and Chicago-Detroit corridors with shorter schedules and potentially additional frequencies will bring a key test regarding capital investment. Currently the Northeast Corridor (NEC) Regional trains, benefiting from the investment in the NEC, generate revenue that slightly exceeds their operating costs (FY11). Thus if they were state funded trains, they would not require a state operating subsidy.

Because it also benefits from NEC capital investments, the new Virginia-sponsored Washington-Lynchburg train has not required an operating subsidy.

Currently (FY11) Chicago-St. Louis service (before state payments) and Chicago-Detroit have revenue/operating cost ratios ranging from 50% and 55%. Illinois makes payments to offset the revenue short-fall while Michigan now is required to do so. How will the revenue/cost ratio change and state subsidy requirements change once all of the Midwest capital investment is in place? Because an operating subsidy is harder to initiate compared to discrete capital project, the future revenue/cost ratio of the Chicago-St. Louis and Chicago-Detroit corridors bears watching.

A.2.5 Equipment

North Carolina has demonstrated that well maintained older equipment can deliver high customer satisfaction for a start-up rail service. The state's 40-year-old cars were overhauled and all mechanical systems standardized. They are delivering signature service on the *Piedmont* route. Utilizing used rail cars saves scarce capital for track improvements. While the availability of used equipment is limited today, states upgrading their corridors and adding frequencies are ordering the new bi-level equipment to expand and standardize their fleets. This should free up equipment that can be overhauled for a 10-year life. New standardized equipment can be ordered at a later date, helping to keep the passenger rail car production line open and avoiding the feast and famine that has marked previous passenger rail car order cycles. In addition, once the new passenger rail cars have been delivered, this older equipment can be mothballed as a reserve fleet available to boost capacity for hurricane evacuations.

A.2.6 Feeder Bus Service

While California sponsors successful rail service on three corridors, perhaps its most notable feature is the extensive Thruway bus network that operates in conjunction with the rail services. The network of bus routes (23 in total) extends the reach of the rail service far beyond the 53 train stations to a total of 175 cities served. A significant number of rail passengers (up to 70% on one route) ride a connecting Thruway bus. The feeder bus network clearly contributes to the success of California's rail program and enhances its value by serving many additional California cities not on rail lines.

The California network has four main functions. These are:

- Increasing ridership on the trains by adding a significant number of additional cities to the rail system;
- Increasing the number of frequencies on corridor routes by adding parallel schedules during off-peak times of the day;
- Providing vital service to transit dependents residing in rural areas that have lost intercity bus service during the past decade; and,
- Enhancing the value of the rail program to taxpayers by serving many more California residents.

Three types of Thruway bus services in California are operated:

- Dedicated, charter motor coaches operated exclusively for Amtrak passengers;
- Mixed Mode, motor coaches operated as regular intercity schedules carrying both rail passengers and bus passengers. The schedules and operations of these routes are coordinated with the train schedules. Financial support in addition to the value of rail passenger tickets lifted is provided to the motor coach operator; and,
- Interline, connecting rail tickets are honored and the motor coach carrier is paid the value of the tickets lifted but no other financial accommodation is undertaken. The schedules may or may not be coordinated with the rail service. This service is most successful when the connecting bus route has a high number of daily frequencies, minimizing the negative impact of any missed connection.

A.2.7 Local Initiatives

As was noted in the *Baton Rouge-New Orleans Passenger Rail Service Development Plan*, Louisiana's efforts to fund Baton Rouge-New Orleans passenger rail service were stymied when the funding source, the Motor Vehicle Sales Tax, fell short of levels required. The Development Plan suggested several potential local funding sources. Elsewhere there are local initiatives to manage and fund rail service.

Orange County in Southern California is an example of a local county that has been in the forefront of advocating local initiatives to manage, coordinate and fund inter-county commuter and intercity rail in the Los Angeles-San Diego-Santa Barbara-San Luis Obispo Corridor (LOSSAN). Orange County adopted a local sales tax to fund track improvements and equipment purchases, and has developed and submitted funding requests for federal transportation funds. Orange County also took action to initiate a funding request for track improvements in another county. It did this because the rail system is an interconnected network, and there was a capacity issue in another county that impacted rail service in Orange County. Currently Orange County, along with other counties that are members of LOSSAN, is developing a Joint Powers Authority to manage the Amtrak's *Pacific Surfliner* service, which serves the length of the 351-mile LOSSAN corridor.

A.2.8 Economic Development

Maine, through its Northern New England Rail Authority (NNEPRA), is an example of a state whose rail passenger program is also an economic development program. The program is unique because it is funded through the efforts of a single state despite the fact that much of the route and many stops are outside the state. Maine and NNEPRA pride themselves as business managers making trains run. The *Downeaster* route is viewed not as a single state service but as an interconnected corridor. The Authority coordinating and working through its partners – Amtrak, Pan Am Railways, Maine DOT and the Massachusetts Bay Transportation Authority – has worked to initiate projects, develop the grant requests, administer the capital and operations grants, and manage the capital projects and operations despite the challenge of having a significant portion of the route outside Maine.

The *Downeaster* is more than rail passenger service. It is viewed as an economic engine for the State of Maine and cities along the route. Initial and subsequent infrastructure upgrading created jobs in the state. It also rebuilt the rail freight infrastructure delivering more efficient freight transportation for businesses in the state. Station building and the new rail service have been a catalyst for development

generating more than \$350 million in public and private investment around train stations. Old Orchard Beach, ME (\$22 million in residential, office and retail developments) and Brunswick, ME (\$30 million in retail, hotel, restaurants and office development) are just two of cities that have seen development around their train stations.

It is projected that by 2030 a total of \$7.2 billion in new development will occur along the *Downeaster* route. Rail service and the train station are viewed as the core downtown feature around which development can be focused. Offices, retail and multi-family housing surround the rail station, and density is reduced as the distance from the train station increases. This pattern replicates the urban landscape of the rail era.

The *Downeaster* also promotes the Maine Brand, bringing new visitors and new residents to Maine because of the *Downeaster's* frequent service to Boston. Ridership has grown steadily since 2005.

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Appendix B.

Current Economic Impacts

B.1 Introduction

The estimated economic impacts of passenger and freight rail activity in Louisiana address rail transport service impacts, passenger-related visitor impacts, and impacts to industries that use freight rail to trade goods. Of these, rail freight-users generate the most significant impacts. TRANSEARCH-derived, rail-specific inbound, outbound, and intrastate commodity flow volumes and values are applied in conjunction with the IMPLAN economic model to determine how such commodity movements generate *direct* economic impacts in Louisiana. Further, the *indirect* impacts associated with suppliers, and the *induced* impacts associated with the re-spending of income, are also quantified. Combined, the *direct*, *indirect*, and *induced* impacts comprise the *total* economic impacts. Such impacts are measured in terms of employment, income, value-added (i.e., Gross State Product), output, and indirect business taxes. The following sections outline the methodology adopted, relevant commodity flow data, and resulting impact estimates.

B.2 Approach, Data Sources, and Movements

The economic impact estimation approach follows generally-accepted industry impact analyses by identifying and categorizing the range of impacts directly and tangentially related to rail transportation. The following subsection outlines this methodology, the data sources, and the economic model used, as well as the rail tonnage and value movements that drive the freight-related impact estimates.

B.2.1 Impact Approach and Terminology

Economic impacts of rail are categorized into two broad impact **activities**: *transport-service* and *transport users (freight and passenger visitor)* impacts. For each broad *activity*, three impact **types** are quantified: *direct*, *indirect*, and *induced* impacts. And for each impact *type*, five impact **measures** are derived: *jobs (employment)*, *income*, *value-added*, *output*, and *indirect business taxes*. These impact activities, types, and measures are defined below.

Impact Activities – Louisiana rail-related economic impacts are categorized into service and user impacts. Rail *transport-service impacts* would most-assuredly be lost in the absence of rail activity (elimination of goods and passenger movements). And rail *user impacts* pertain to industries using rail as one of several available modes to transport freight or serve visitors who travel by rail.

- *Transport-Service Impacts* – Economic impacts associated with the provision of rail operations (i.e., the rail industry) include a wide range of primarily rail transport activity, but also may include other support operations associated with administrative functions. Such activity includes Class I rail carriers (large railroads), as well as the other small Class III operators (small railroads) and Amtrak.
- *Transport User Impacts* – User impacts associated with rail include those shippers/receivers and firms that service out-of-state visitors who travel by rail.

- *Freight User Impacts* – Economic impacts associated with shippers/receivers using the freight rail network for the movement of goods (e.g., intermediate and final goods, etc.), excepting the rail industry itself. Rail users have several options available to transport freight and could possibly substitute other modal transport (truck and/or water) if rail services became unavailable.¹⁹ However, the choice to use railroads to ship/receive freight indicates cost and/or logistical advantages, and as such, removal of such advantages would negatively affect rail users.
- *Visitor User Impacts* – Similarly, economic impacts arise in industry sectors that service visitors to Louisiana who arrive by passenger rail (i.e., Amtrak). Rail visitors have several transport options and could possibly substitute other modal transport (highway and/or air) if rail services became unavailable. However, the choice to travel via Amtrak indicates cost, convenience and/or amenity advantages, and as such, removal of such advantages would negatively affect rail users and the industries serving them.

Impact Types – The *transport-service*, *freight* and *visitor user* activity impacts each consist of three impact types (and a combined total):

- *Direct* – Impacts from the provision of freight rail transport (i.e., “transport-services”), as well from the firms/industries that use rail to ship and receive goods (i.e., “freight users”) or service visitors from out-of-state (“visitor users”).
- *Indirect* – Impacts associated with the suppliers that provide intermediate goods and services to the *directly* impacted industries.
- *Induced* – Impacts associated with the re-spending of earned income from both the *direct* and *indirect* industries in the study area.
- *Total* – Aggregated *direct*, *indirect*, and *induced* components.

Impact Measures – Each impact type is *measured* in terms of five economic metrics:²⁰

- *Jobs/Employment* – Employment measured in terms of full-time-equivalent (FTE) job-years.
- *Income* – The wage/salary earnings paid to the associated jobs.
- *Value-Added* – The net additional economic activity (i.e., total output less gross intermediate inputs), synonymous with GRP (gross regional product) or GSP (Gross State Product). Includes employee and proprietor income, other income types, taxes, etc., required in the production of final goods and services.
- *Output* – The total sales value associated with all levels of economic activity (comprised of gross intermediate inputs *and* value added, combined).

¹⁹ Further, the substitutability factor if rail became unavailable also affects the import of goods and materials, which might result in the use of local products instead of out-of-state products.

²⁰ Note that all monetary impact measures are presented in 2010 dollars terms herein (i.e., income, value-added, output, and indirect business taxes).

- *Indirect Business Taxes* – Inclusive of various taxes (sales, property, excise, etc.), fines, fees, licenses, permits, etc. resulting from economic activity.

B.2.2 Data Sources and Models

Reflective of agriculture, mining, manufacturing, and other production sectors, *freight user* impacts are typically much greater than those related to *visitor* or *transport-service*. Generating comprehensive *freight user* impact estimates requires converting commodity movement data into *direct* industry output estimates. To do so, TRANSEARCH commodity movement data and the IMPLAN model are used.

TRANSEARCH – Developed by IHS Global Insight, the TRANSEARCH® database comprises various datasets in the development of multimodal trade flow statistics and is based largely on the U.S. Surface Transportation Board’s (STB) Carload Waybill Sample. The Waybill Sample is a stratified sample of carload waybills for all U.S. rail traffic submitted by rail carriers that terminate 4,500 or more revenue carloads annually. This data is then supplemented with other data sources such as the Commodity Flow Survey (CFS) sample developed by the U.S. Department of Transportation, railroad surveys, etc. Data applied in the economic analysis include 2009 tons and value, by commodity type and directional movement (inbound, outbound, and intrastate), categorized by Standard Transportation Commodity Classification (STCC) code level.

IMPLAN – The IMPLAN® v3 model, produced by the Minnesota IMPLAN Group, Inc., is an economic modeling, input-output based, social account matrix software used to estimate the economic impacts to a defined geography (i.e., the State of Louisiana) ensuing from expenditures in an industry or group of industries (or, commodity, or group of commodities).²¹ A social account matrix reflects the economic interrelationships between the various industries (and commodities), households, and governments in an economy and measures the economic interdependency of each industry on others through impact multipliers. Impact multipliers are developed within IMPLAN from regional purchase coefficients, production functions, and socioeconomic data for each of the economic impact variables and are geographically-specific. IMPLAN data and industry-accounts closely follow the conventions used in the “Input-Output Study of the U.S. Economy” by the Bureau of Economic Analysis.

Additionally, IMPLAN provides commodity-to-industry production and absorption matrices that enable the quantification, for example, of how inbound chemicals are used (absorbed) across Louisiana industries in the respective production processes (e.g., plastics manufacturing) to create consumable final goods and services. Further, algorithms were developed for this analysis to translate TRANSEARCH commodity (STCC) data into IMPLAN. Such data and translation processes are used to estimate the impacts associated with directional commodity movements.

Passenger/Visitor Data – Various sources were used to generate rail passenger visitor impact estimates. First, Amtrak “Fact Sheets” were used to estimate passenger movements. Secondly, Data Based Products, Inc. (DBPI) information regarding visitor share of air passenger travel at commercial service airports was drawn upon to help visitor estimate the share of rail passengers. Thirdly, travel expenditure data and overall visitor characteristics compiled in the “*Calendar Year 2008 Louisiana TravelsAmerica*” were reviewed. Such information is combined with Consultant experience regarding rail passenger transport and visitor economic impacts to estimate rail passenger visitor impacts in Louisiana.

²¹ Note that all impacts presented pertain only to one-year static impacts for year 2009 flows (in year 2010 values), and does not provide any dynamic or feedback changes.

Impact Year – Data used to compile rail transport impacts spans several sources and years. The highly detailed rail freight tonnage and value reflects year 2009 movements (most recent year available), which are then presented in year 2010 values per IMPLAN model results. Similarly, IMPLAN industry data for total rail industry employment, income, output, etc. is for the year 2010. Regarding visitor impacts, passenger movement data was collected for the years 2010-2012, for which the average is used. Given these various sources and years, the ensuing rail impacts reflect a composite of average annual rail impacts over the 2009-2012 period, presented in year 2010 values.

B.2.3 Freight Rail Tonnage and Value

Rail tonnage volumes and corresponding commodity values by direction used in the economic analysis are based on the data and findings presented in Chapter 2. Data presented there detail the consolidated commodity flows for inbound, outbound, intrastate, and through freight movements. For purposes of the economic analysis, three adjustments are made:

1. Commodity flow data is analyzed from a detailed perspective (versus the consolidated) to facilitate translation between the TRANSEARCH commodity categories to those of IMPLAN; that is, the freight flow data for the economic analysis component is evaluated at a four-digit STCC code level, whereas the freight flow analysis is aggregated at the two-digit STCC level;
2. Intrastate movements were combined with outbound movements, since both reflect industry production within Louisiana; and,
3. The year 2009 price levels provided by TRANSEARCH were inflated to year 2010 price levels to facilitate the 2010-based IMPLAN model (inflated via the U.S. Bureau of Labor Statistics Producer's Price Index, by commodity).

While the detailed commodity freight flows are evaluated in the economic impact calculations, the consolidated movement flows and values are summarized below to provide an order-of-magnitude understanding and to illustrate key concepts.

Inbound Commodities – In 2009, 37.4 million tons were railed into Louisiana, valued at \$32.6 billion (in year 2010\$), as summarized in **Table B-1**. *Chemicals or Allied Products* led in terms of inbound consolidated tonnage (7.7 million) valued at \$10.3 billion. While the next three major commodities railed into Louisiana are close in terms of tonnage (from 5.8 to 7.2 million tons each), their combined value (\$1.9 billion) only comprises 5.9% of the total value of inbound rail freight (versus 31.6% for *Chemicals or Allied Products*). In terms of inbound freight value, *Container Shipments* at \$8.7 billion (but only 1.8 million tons) and *Transportation Equipment* at \$6.0 billion (but only 0.9 million tons) are also noteworthy.

Table B-1: Inbound Rail Freight Volume and Value by Major Commodity

STCC	Description	Tonnage		Value (\$mil)		Average Value (\$/ton)
		Amount	Percent	Amount	Percent	
28	Chemicals or Allied Products	7,676,828	20.5%	\$10,294	31.6%	\$1,341
14	Nonmetallic Minerals	7,201,240	19.2%	\$68	0.2%	\$9
01	Farm Products	6,943,183	18.5%	\$1,634	5.0%	\$235
11	Coal	5,846,746	15.6%	\$234	0.7%	\$40
20	Food or Kindred Products	2,335,762	6.2%	\$1,207	3.7%	\$517
46	Mixed Shipments (Containers)	1,836,977	4.9%	\$8,685	26.6%	\$4,728
29	Petroleum or Coal Products	1,326,695	3.5%	\$1,301	4.0%	\$981
32	Clay, Concrete, Glass or Stone	1,096,599	2.9%	\$125	0.4%	\$114
37	Transportation Equipment	867,183	2.3%	\$5,956	18.3%	\$6,868
33	Primary Metal Products	538,379	1.4%	\$890	2.7%	\$1,653
	Other	1,779,529	4.8%	\$2,219	6.8%	\$1,247
	TOTAL	37,449,120	100.0%	\$32,614	100.0%	\$871

Source: Prepared by CDM Smith based on 2009 TRANSEARCH Data
Values in Year 2010 dollars

Outbound/Intrastate Commodities – 37.8 million tons of rail freight, valued at \$58.8 billion, originate in Louisiana. The vast majority of which (86%, 32.6 million tons) are destined out-of-state versus 5.2 million tons of intrastate movements. The 22.9 million tons of outbound *Chemical/Allied products* from Louisiana, valued at \$35.6 billion, comprise 60.6% of originating rail freight tonnage, as seen in **Table B-2**. Other notable outbound commodities generating economic impact include: *Container Shipments* (\$7.0 billion), *Transportation Equipment* (\$4.8 billion), *Petroleum or Coal Products* (\$3.3 billion), *Pulp, Paper or Allied Products* (\$2.9 billion), and *Food or Kindred Products* (\$1.3 billion).

Table B-2: Outbound/Intrastate Rail Freight Volume and Value by Major Commodity

STCC	Description	Tonnage		Value (\$mil)		Average Value (\$/ton)
		Amount	Percent	Amount	Percent	
28	Chemicals or Allied Products	22,910,344	60.6%	\$35,556	60.5%	\$1,552
26	Pulp, Paper or Allied Products	3,578,062	9.5%	\$2,916	5.0%	\$815
29	Petroleum or Coal Products	3,197,677	8.5%	\$3,300	5.6%	\$1,032
20	Food or Kindred Products	2,213,091	5.9%	\$1,258	2.1%	\$568
46	Misc. Mixed Shipments (Containers)	1,471,633	3.9%	\$6,971	11.9%	\$4,737
24	Lumber or Wood Products	1,037,140	2.7%	\$601	1.0%	\$580
37	Transportation Equipment	888,063	2.3%	\$4,783	8.1%	\$5,386
01	Farm Products	665,535	1.8%	\$322	0.5%	\$484
14	Nonmetallic Minerals	297,695	0.8%	\$18	0.0%	\$61
40	Waste or Scrap Materials	279,375	0.7%	\$69	0.1%	\$247
	Other	1,283,395	3.4%	\$2,969	5.1%	\$2,313
	TOTAL	37,822,010	100.0%	\$58,762	100.0%	\$1,554

Source: Prepared by CDM Smith based on 2009 TRANSEARCH Data
Values in Year 2010 dollars

B.2.4 Passenger Rail Visitor Assumptions

Impact estimates associated with rail passenger transport and visitor expenditures are compiled using various data sources including IMPLAN, Amtrak, Louisiana Visitor Profiles, and Consultant experience.

Passenger Transport – IMPLAN industry data provides total employment, labor income, output, etc. associated with the provision of rail transport in Louisiana. Unfortunately, such data is not subcategorized by passenger versus freight transport. To subcategorize such aggregate economic information, Amtrak “Fact Sheets” for Louisiana were obtained for years 2010-2012, which provided total employment and labor income for Amtrak passenger rail transport. Such data excludes any freight transport activity, and is comparable for the overall industry sector IMPLAN totals. Hence, the difference between the IMPLAN rail transport industry sector totals and the Amtrak estimated passenger transport activity provides an estimate for freight only rail provision activity impacts.

Visitor Expenditures – Additionally, the Amtrak Fact Sheets provided total boardings and alightings by city in Louisiana for years 2010-2012. This information, in conjunction with visitor profiles and Consultant experience, is used to estimate the share of rail passenger movements that were visitors (i.e., out-of-state) and average visitor spending.

Total annual passenger movements for Louisiana rail stations averaged 245,700 between 2010 and 2012. Since each passenger typically embarks (boards) and disembarks (alights), it is necessary to divide total passenger movements by two to estimate the actual number of passengers (122,850). A majority of such passengers (105,590, 86% of state total) originate or terminate in New Orleans. Over half (66,520, 63%) of such passengers to/from New Orleans are estimated to be out-of-state visitors.²² Assuming an average expenditure per visitor of \$750²³ results in a New Orleans visitor impact of \$49.9 million. Rail passengers to the other Amtrak stations in Louisiana (17,260) comprise a lower visitor percentage (42%) and spend considerably less (\$370) per passenger.²⁴ Combined, rail visitor expenditures total \$52.5 million annually, as summarized in **Table B-3**.

Table B-3: Passenger Rail Visitor Expenditures (2010\$)

	New Orleans	Other ¹	Total
Rail Passenger Movements	211,180	34,520	245,700
Rail Passenger Boardings	105,590	17,260	122,850
Percent Visitors (Out-of-State)	63%	42%	60%
Rail Visitors	66,520	7,190	73,710
Average Visitor Expenditures	\$750	\$370	\$710
Annual Expenditures	\$49,890,000	\$2,657,700	\$52,547,700

Source: Amtrak Fact Sheets (2010-2012), Calendar Year 2008 Louisiana TravelsAmerica, Data Based Products Inc., (T-Visitor Profile Report), CDM Smith

¹ Other stations include: Hammond, Lafayette, Lake Charles, New Iberia, Schriever, and Slidell

²² Visitor assumption percentage based on similarity of rail passengers to aviation passengers. In FY2011, Data Based Products, Inc. (DBPI) analysis of passenger boardings at New Orleans Louis Armstrong International indicate the 63% of the trips originate trip at an out-of-state airport.

²³ Based on review of the *Calendar Year 2008 Louisiana TravelsAmerica* and Consultant experience conducting other visitor economic impact analyses.

²⁴ Visitor share of Other Station passengers based on DBPI data for other Louisiana Cities with both commercial service and rail passenger stations), as well as Consultant experience with rail passenger transport. Expenditure per visitor estimates at Other Stations based on *TravelsAmerica* and Consultant experience conducting other visitor economic impact analyses.

B.3 Economic Impact Findings

Rail activity in Louisiana impacts an estimated 494,900 *total* jobs across the state. A vast majority of these *total* employment impacts arise from rail users who move goods via the freight system, with the balance attributable to rail transport services and visitor impacts. In terms of jobs, *freight user* related employment impacts total 484,980 jobs (98.0% of *total* jobs), versus 8,810 (1.8%) rail transport-service related jobs and 1,110 (0.2%) in visitor-related jobs. These summary rail-service and rail-user impacts include the *direct* impact of goods and services provided, the *indirect* impact associated with suppliers, and the *induced* impacts associated with income re-spending.

The ensuing discussion details the composition of the employment impact estimates, as well as the other impact *measures* (e.g., output, value-added, income, and indirect business taxes). The impact *types* (e.g., direct, indirect, and induced) and *measures* are first presented for rail *transport-services*, and then for *freight and visitor users*. The total impacts are then summarized for both rail *activities* by impact *measure* and *type*.

B.3.1 Rail Transport-Service Impacts

The *direct* impact of Louisiana rail operations totals 2,930 jobs,²⁵ comprised of 230 passenger transport jobs (7.8%) and 2,700 freight transport jobs (92.2%). Total *indirect* and *induced* (i.e., multiplier) effect associated with rail operations yield an additional 5,880 jobs (2,680 and 3,200, respectively) throughout the state. Combined, an estimated 8,810 people owe their jobs, directly or tangentially to the physical movement of freight or passengers by rail. This excludes rail visitor or freight user impacts associated with the shippers/consignees that ship/receive goods (as quantified in the following subsection).

Direct Rail Transport-Service Impacts – The *direct* output impacts related to rail services (both passenger and freight) total \$924 million, of which \$293 million is paid in income to the 2,930 people *directly* employed in the rail industry, as shown in **Table B-4**. These impacts typically occur at rail yards, on trains, or in administrative offices, with the vast majority of direct jobs resulting from freight service.

Total Rail Transport-Service Impacts – The *indirect* output impacts associated with the supply of products and services to rail transport providers (i.e., Class I carriers and/or Amtrak) total \$393 million, of which \$134 million is paid in income to 2,680 *indirect* jobs. The re-spending of *direct* income (\$293 million) and *indirect* income (\$134 million) generates an additional \$349 million in *induced* output impacts, of which \$116 million is paid to an additional 3,200 jobs.

Combined, a *total* of 8,810 jobs are related directly or tangentially (indirect and induced) to the provision of rail transport in Louisiana. These employees earn a total of \$543 million. Total output related to such rail transport services totals \$1.7 billion.

²⁵ Total rail industry employment, labor income, and output estimates provided by IMPLAN.

Table B-4: Rail Transport-Service Impacts

Impact Type	Output ¹	Value Added ^{1,2}	Labor Income ¹	Indirect Bus. Taxes ¹	Employment ³
Passenger					
Direct	\$42	\$23	\$13	\$0.7	230
Indirect	\$18	\$9	\$6	\$0.5	210
Induced	<u>\$16</u>	<u>\$10</u>	<u>\$5</u>	<u>\$0.9</u>	<u>250</u>
Total	\$76	\$41	\$25	\$2.2	690
Freight					
Direct	\$882	\$473	\$280	\$15.3	2,700
Indirect	\$375	\$186	\$128	\$11.2	2,470
Induced	<u>\$333</u>	<u>\$199</u>	<u>\$111</u>	<u>\$19.4</u>	<u>2,950</u>
Total	\$1,590	\$859	\$518	\$45.8	8,120
Total					
Direct	\$924	\$496	\$293	\$16.0	2,930
Indirect	\$393	\$195	\$134	\$11.7	2,680
Induced	<u>\$349</u>	<u>\$209</u>	<u>\$116</u>	<u>\$20.3</u>	<u>3,200</u>
Total	\$1,666	\$900	\$543	\$48.0	8,810

Source: CDM Smith, Amtrak, and IMPLAN

¹ Millions of 2010 dollars² Comparable with Gross State Product (GSP)³ In FTE job-years

Rail Transport Impacts by Activity – The vast majority of the rail transport impacts are associated with freight activity, ranging from 92.2% of total rail transport jobs to 95.4% of labor income. Specifically, the 2,700 direct jobs associated with rail *freight* transport generate an additional 5,420 multiplier jobs (2,470 indirect and 2,950 induced). Conversely, the 230 direct jobs associated with rail *passenger* transport generate an additional 460 multiplier jobs (210 indirect and 250 induced).

B.3.2 Passenger Rail Visitor Impacts

The \$52.5 million in rail visitor expenditures in Louisiana (see Table B-3) generates \$49.3 million in direct output of which 19.7 million is paid in direct labor income to 830 jobs.²⁶ Including the \$31.6 million multiplier impacts (\$12.1 million indirect, \$19.5 million induced), the output impact associated with rail visitors totals \$80.9 million annually, with \$30.4 million paid to 1,110 jobs. Rail Visitor impacts are summarized by impact measure and type in **Table B-5**.

²⁶ Note that the \$3.2 million difference between visitor expenditures (\$52.5 million) and direct visitor impacts (\$49.3 million) represents the value of retail goods sold (produced outside of Louisiana) that do not generate economic impact. Rather, the only impact associated with retail sales reflects the trade margin associated with the sales.

Table B-5: Passenger Rail Visitor Impacts

Impact Type	Output ¹	Value Added ^{1,2}	Labor Income ¹	Indirect Bus. Taxes ¹	Employment ³
Direct	\$49.3	\$32.2	\$19.7	\$3.4	830
Indirect	\$12.1	\$6.9	\$4.2	\$0.5	100
Induced	\$19.5	\$11.7	\$6.5	\$1.1	180
Total	\$80.9	\$50.8	\$30.4	\$5.0	1,110

Source: CDM Smith, IMPLAN

¹ Millions of 2010 dollars

² Comparable with Gross State Product (GSP)

³ In FTE job-years

B.3.3 Freight Rail User Impacts

In addition to the rail-operation (transport-service) impacts detailed above, many consignees and shippers in the state heavily rely on rail service to receive and/or ship freight. In doing so, they generate significant impacts as well. While these firms/industries are not entirely dependent on the rail mode for shipping freight (as alternative modes are available), it is hard to envision their continued operation levels without such access. In fact, rail access is often instrumental in major manufacturing business location decisions.

If railroads did not accommodate demand, consignees and shippers could use other modes (i.e., truck, water, air, etc.) to transport freight. However, the use of other modes would likely entail higher transport costs (due to longer transport distances, price, logistics, etc.), and could increase overall demand (and resulting handling costs) for all users of other modes (both the diverted rail users as well as current users). The long-term result would be a migration of industry away from Louisiana to other locations with relatively better rail accessibility, and better modal options/mix.

The following analysis identifies the economic impacts associated with firms in Louisiana that rely on rail transport. To estimate such impacts associated with rail tonnage movements requires an understanding of how the various inbound and outbound commodities are used or produced by various industries to generate output, income, and employment. To do so, the IMPLAN commodity-to-industry matrices and other algorithms were applied to estimate *direct* impact measures. *Indirect* and *induced* multipliers were then applied to the *direct* impact estimates to derive *total* economic impacts.

Total Freight-User Impacts – The *direct* output of freight-related rail users in Louisiana totals \$76.2 billion, of which \$11.2 billion is paid in the form of income to 189,650 *direct* jobs. Indirect impacts associated with suppliers account for another \$40.9 billion in annual output, of which \$8.1 billion is paid in income to 150,330 jobs. The re-spending of direct and indirect income (\$19.3 billion) generates additional *induced* impacts of \$15.8 billion in output, of which \$5.3 million is paid in income to 145,000 jobs.

As shown in **Table B-6**, a *total* of 484,980 jobs in Louisiana can be traced back to the firms that ship and/or receive freight via rail in Louisiana. Of these *total freight user* jobs, nearly half (47%, 225,620 jobs) are attributable to freight originating in Louisiana (including intrastate movements), and slightly over half (53%, 259,360 jobs) are attributable to inbound freight terminating in Louisiana. These impact estimates are based on the freight volumes and values originally presented (Table B-1 and Table B-2), as discussed below.

Table B-6: Freight Rail User Impacts

Measure and Type	Outbound /Intrastate	Inbound	Total
Output¹			
Direct	\$47,077	\$29,136	\$76,213
Indirect	\$28,197	\$12,692	\$40,889
Induced	<u>\$8,233</u>	<u>\$7,544</u>	<u>\$15,777</u>
Total	\$83,507	\$49,373	\$132,879
Value Added^{1,2}			
Direct	\$9,066	\$10,219	\$19,285
Indirect	\$9,478	\$5,231	\$14,710
Induced	<u>\$4,938</u>	<u>\$4,526</u>	<u>\$9,464</u>
Total	\$23,483	\$19,976	\$43,459
Labor Income¹			
Direct	\$4,924	\$6,269	\$11,193
Indirect	\$5,100	\$3,029	\$8,129
Induced	<u>\$2,749</u>	<u>\$2,519</u>	<u>\$5,268</u>
Total	\$12,772	\$11,817	\$24,589
Indirect Business Taxes¹			
Direct	\$498	\$849	\$1,347
Indirect	\$830	\$429	\$1,259
Induced	<u>\$479</u>	<u>\$439</u>	<u>\$918</u>
Total	\$1,807	\$1,717	\$3,525
Employment³			
Direct	59,970	129,680	189,650
Indirect	89,990	60,330	150,330
Induced	<u>75,660</u>	<u>69,350</u>	<u>145,000</u>
Total	225,620	259,360	484,980

Source: CDM Smith

¹ Millions of 2010 dollars² Comparable with Gross State Product (GSP)³ In FTE job-years

Outbound/Intrastate Freight User Impacts – 37.8 million tons of freight originating in Louisiana is either shipped via rail out-of-state (32.6 million tons) or internally (5.2 million tons). Combined, rail freight originating in Louisiana is valued at \$58.8 billion (see Table B-2), and generates an estimated \$47.1 billion (see Table B-6) in *direct* output in Louisiana. This *direct* output, tabulated by industry, was applied to IMPLAN multipliers to estimate the associated *indirect* and *induced* impacts associated with Louisiana goods and materials transported by rail. As also shown in Table B-6, the *total* impact associated with such movements totals \$83.5 billion in output, of which \$12.8 billion is paid in income to 225,620 jobs statewide.

Inbound Freight User Impacts – Of the 37.4 million tons of inbound freight (Table B-1), a minute percentage (122,000 tons) comprises waste, scrap or other materials that have no associated value, and thus do not generate economic impacts in Louisiana. Conversely, the remaining gross majority of inbound rail freight tonnage (37.3 million tons), valued at \$32.6 billion is used by Louisiana industries to generate \$29.1 billion in *direct* output (see **Table B-7**). This output is comprised of *final demand* and *intermediate demand*, where:

Table B-7: Inbound Rail Freight User Tonnage, Value, and Direct Output

Demand Type	Tonnage	Freight Value ¹	Direct Output ¹
Final	3,007,356	\$9,589	\$1,892
Intermediate	34,319,734	\$23,025	\$27,243
Total	37,327,090	\$32,614	\$29,136

Source: CDM Smith

¹ Millions of 2010 dollars

- *Final Demand* – Approximately 8% (3.0 million tons) of the 37.3 million inbound tons that generate economic activity in Louisiana comprise finished goods bound for final demand markets (e.g., households, governments, etc.). Such final demand goods are distributed via wholesale or retail outlets or through direct sales. Wholesale or retail trade entails some economic impacts stemming from the trade margins associated with the transfer of goods from suppliers to end-users; that is, the personnel and resources to sell or resell such goods. Whereas direct sales to end-users have no associated impacts. The value of such final demand movements totals \$9.6 billion, and the resultant output associated from wholesale and/or retail markup totals \$1.9 billion.
- *Intermediate Demand* – The other 92% of inbound tonnage (34.3 million tons) comprises intermediate demand used/absorbed by Louisiana industries in their production processes. These commodities, valued at \$23.0 billion, are allocated to the major industry users based on relative commodity absorption patterns. Output impacts are then estimated based on each industry's average value-added contribution to intermediate inputs to produce final goods and services. The exercise generates a direct industry output estimate of \$27.2 billion

In sum, 37.3 million tons of inbound rail freight, valued at \$32.6 billion is used by Louisiana industries (as intermediate inputs into the production process) and institutions (as final demand via wholesale, retail, or direct sales) to generate \$29.1 billion in direct output. As seen in Table B-6, these direct impacts result in an estimated 129,680 jobs. The multiplier impacts associated with suppliers (60,330 indirect jobs) and income re-spending (69,350 jobs) accounts for an additional 129,680 jobs. Combined, the economic impact associated with rail-user impacts arising from inbound tonnage totals \$49.4 billion in output, of which \$11.8 billion is paid in income to 259,360 total jobs.

Freight User Impact Overlap – Impact *overlap* issues arose in the estimation process between outbound/intra and inbound commodity conversion to economic impacts. For example, when commodity supplies, such as seed and fertilizer, are imported by a grain producer, the user impacts quantified allocate a share of the inbound seed and fertilizer commodities to the grain industry and then estimate the industry-associated output. Potential overlap then arises when the grain is subsequently transported by rail out of the state, since impacts are also estimated for outbound rail movements. So in effect, the output associated with the grain industry would be counted twice: once associated with the inbound movement of seed and fertilizer, and second with the outbound movement of grain. To avoid double-counting impacts, such potential overlaps were identified at an aggregate level and subtracted-out of the analysis to ensure conservative estimates.²⁷ For Louisiana,

²⁷ While the TRANSEARCH data and IMPLAN model provide comprehensive analysis potential, they cannot be used to specifically track how such inbound rail commodities result in corresponding outbound rail commodities. Therefore, to avoid double-counting, an estimate is made of the *potential overlap* by identifying the minimum output between the modal directions. For example, if grain industry economic output associated with inbound seed and fertilizer totals \$100 million and the grain industry output shipped outbound by rail totals \$60 million, the maximum potential overlap would be the minimum between the two movements (e.g., \$60 million), because all of the rail outbound grain-related impacts *could* have been produced with the rail inbound commodity inputs.

the *potential overlap* subtracted from the impact findings comprise between 6% and 15% of the total unadjusted *freight user* impacts, depending on the *impact measure* and *type*. For the purposes of this chapter, the *intra-modal* potential overlap impacts are proportioned-out of the presented results.

B.3.4 Total Rail Activity Impacts

Rail service is essential to Louisiana's economy. While the basic provision of rail service generates a modest 2,930 *direct* jobs (8,810 total jobs including multiplier effects), rail freight users in the state generate a much greater 189,650 *direct* jobs. Combining the *total* rail freight and visitor users job impacts of 486,090 (inclusive of the 295,610 multiplier job impacts) with rail transport-services jobs yields a *total* rail-related employment impact of 494,900 jobs, with \$25.2 billion paid in income and output of \$134.6 billion. The impact summaries by activity, measure, and type are summarized in **Table B-8**.

These rail-related impacts are also compared with State total employment, income, and gross state product (GSP) in **Table B-9**. In summary:

- 494,900 jobs directly or tangentially affected by rail represent 19.5% of the 2.53 million jobs statewide (in 2010).
- \$25.2 billion earned by these employees represents 21.1% of Louisiana's total wage and salary income (\$119.1 billion in 2010).
- The combined value-added impact, \$44.4 billion, associated with the rail operations and rail users represents 23.1% of GSP (\$192.1 billion in 2010).
- And, the \$3.6 billion in indirect taxes associated with rail transport account for about 27.2% of total statewide indirect tax collections (\$13.2 billion).

So, instead of estimating a total direct impact of \$160 million (aggregating the separately-calculated inbound- and outbound-related impacts), the \$60 million in *potential overlap* is subtracted-out of the analysis, resulting in a conservative trade-user impact estimate of \$100 million between the two directional movements.

However, it is doubtful that the overlap would be 100 percent. Specifically pertaining to the example, it is doubtful that the \$60 million in rail grain output could be entirely traced to the same \$100 million of inbound rail seed and fertilizer.

Table B-8: Total Rail Activity Impacts

Measure and Type	Transport Service			Transport User			Total		
	Passenger	Freight	Subtotal	Visitor	Freight	Subtotal	Pass/Visitor	Freight	Subtotal
Output¹									
Direct	\$42.3	\$882	\$924	\$49.3	\$76,213	\$76,262	\$91.6	\$77,095	\$77,186
Indirect	\$18.0	\$375	\$393	\$12.1	\$40,889	\$40,901	\$30.1	\$41,264	\$41,294
Induced	<u>\$16.0</u>	<u>\$333</u>	<u>\$349</u>	<u>\$19.5</u>	<u>\$15,777</u>	<u>\$15,797</u>	<u>\$35.5</u>	<u>\$16,110</u>	<u>\$16,146</u>
Total	\$76.2	\$1,590	\$1,666	\$80.9	\$132,879	\$132,960	\$157.1	\$134,469	\$134,626
Value Added^{1,2}		0							
Direct	\$22.7	\$473	\$496	\$32.2	\$19,285	\$19,317	\$54.9	\$19,758	\$19,813
Indirect	\$8.9	\$186	\$195	\$6.9	\$14,710	\$14,717	\$15.8	\$14,896	\$14,912
Induced	<u>\$9.6</u>	<u>\$199</u>	<u>\$209</u>	<u>\$11.7</u>	<u>\$9,464</u>	<u>\$9,476</u>	<u>\$21.3</u>	<u>\$9,663</u>	<u>\$9,685</u>
Total	\$41.2	\$859	\$900	\$50.8	\$43,459	\$43,510	\$92.0	\$44,318	\$44,410
Labor Income¹		0							
Direct	\$13.4	\$280	\$293	\$19.7	\$11,193	\$11,213	\$33.1	\$11,473	\$11,506
Indirect	\$6.1	\$128	\$134	\$4.2	\$8,129	\$8,133	\$10.3	\$8,257	\$8,267
Induced	<u>\$5.3</u>	<u>\$111</u>	<u>\$116</u>	<u>\$6.5</u>	<u>\$5,267</u>	<u>\$5,274</u>	<u>\$11.8</u>	<u>\$5,378</u>	<u>\$5,390</u>
Total	\$24.8	\$518	\$543	\$30.4	\$24,589	\$24,619	\$55.2	\$25,107	\$25,162
Indirect Business Income¹									
Direct	\$0.7	\$15	\$16	\$3.4	\$1,348	\$1,351	\$4.1	\$1,363	\$1,367
Indirect	\$0.5	\$11	\$12	\$0.5	\$1,260	\$1,261	\$1.0	\$1,271	\$1,273
Induced	<u>\$0.9</u>	<u>\$19</u>	<u>\$20</u>	<u>\$1.1</u>	<u>\$918</u>	<u>\$919</u>	<u>\$2.0</u>	<u>\$937</u>	<u>\$939</u>
Total	\$2.2	\$46	\$48	\$5.0	\$3,526	\$3,531	\$7.2	\$3,572	\$3,579
Employment³		0							
Direct	230	2,700	2,930	830	189,650	190,480	1,060	192,350	193,410
Indirect	210	2,470	2,680	100	150,330	150,430	310	152,800	153,110
Induced	<u>250</u>	<u>2,950</u>	<u>3,200</u>	<u>180</u>	<u>145,000</u>	<u>145,180</u>	<u>430</u>	<u>147,950</u>	<u>148,380</u>
Total	690	8,120	8,810	1,110	484,980	486,090	1,800	493,100	494,900

Source: CDM Smith, IMPLAN

¹ Millions of 2010 dollars² Comparable with Gross State Product (GSP)³ In FTE job-years

Table B-9: Total Rail Activity Impact Comparisons

Measure and Type	Transport Service			Transport User			Total		
	Passenger	Freight	Subtotal	Visitor	Freight	Subtotal	Passenger	Freight	Subtotal
Value Added as % of State GSP¹									
Direct	0.01%	0.2%	0.3%	0.0%	10.0%	10.1%	0.0%	10.3%	10.3%
Indirect	0.00%	0.1%	0.1%	0.0%	7.7%	7.7%	0.0%	7.8%	7.8%
Induced	0.00%	0.1%	0.1%	0.0%	4.9%	4.9%	0.0%	5.0%	5.0%
Total	0.02%	0.4%	0.5%	0.0%	22.6%	22.6%	0.0%	23.1%	23.1%
Labor Income as % of State Income²									
Direct	0.01%	0.2%	0.2%	0.0%	9.4%	9.4%	0.0%	9.6%	9.7%
Indirect	0.01%	0.1%	0.1%	0.0%	6.8%	6.8%	0.0%	6.9%	6.9%
Induced	0.00%	0.1%	0.1%	0.0%	4.4%	4.4%	0.0%	4.5%	4.5%
Total	0.02%	0.4%	0.5%	0.0%	20.6%	20.7%	0.0%	21.1%	21.1%
Indirect Business Tax as % of State Taxes³									
Direct	0.01%	0.1%	0.1%	0.0%	10.2%	10.3%	0.0%	10.3%	10.4%
Indirect	0.00%	0.1%	0.1%	0.0%	9.6%	9.6%	0.0%	9.6%	9.7%
Induced	0.01%	0.1%	0.2%	0.0%	7.0%	7.0%	0.0%	7.1%	7.1%
Total	0.02%	0.3%	0.4%	0.0%	26.8%	26.8%	0.1%	27.1%	27.2%
Employment as % of State Employment⁴									
Direct	0.01%	0.1%	0.1%	0.0%	7.5%	7.5%	0.0%	7.6%	7.6%
Indirect	0.01%	0.1%	0.1%	0.0%	5.9%	5.9%	0.0%	6.0%	6.0%
Induced	0.01%	0.1%	0.1%	0.0%	5.7%	5.7%	0.0%	5.8%	5.9%
Total	0.03%	0.3%	0.3%	0.0%	19.1%	19.2%	0.1%	19.5%	19.5%

Source: CDM Smith, IMPLAN

¹ Compared to total Louisiana GSP of \$192.1 billion² Compared to total Louisiana income of \$119.1 billion³ Compared to total Louisiana taxes of \$13.2 billion⁴ Compared to total Louisiana employment of 2.53 million

The analysis demonstrates the huge effect of rail transport on the state's economy, and that a vast majority of the impacts pertains to those firms that use freight rail to transport goods and/or materials. In turn the resultant multiplier impacts associated with the indirect supplier impacts and the re-spending of income (both direct and indirect) is significant. However, such impacts are disbursed differently through the various industries depending on their direct versus supportive role within Louisiana's economy, as summarized in the following subsection.

Total Job Impacts by Industry – Review of the total job impacts by industry indicate the greatest number of associated jobs arise in *Manufacturing*, followed by *Retail Trade*, and *Health & Social Services*. These industry job impacts are summarized by impact type in **Table B-10** and discussed below.

- **Manufacturing** – The 87,470 total manufacturing related jobs associated with rail transport account for 18% of the total 494,900 related job impacts. Of these 87,470 jobs, the vast majority (85%, 74,670) are directly related to rail transport.
 - **Statewide Share** – Closer comparison of these manufacturing impacts indicates that the 74,670 direct rail-related jobs account for 53% of the total statewide manufacturing jobs. This clearly underscores the sector's extensive use of and reliance on rail transport.
 - **Primary Commodities** – The 35.1 million tons of inbound and outbound *Chemicals or Allied Products* and *Petroleum or Coal Products* total account for 47% of total tonnage movements (see Table B-1 and Table B-2). Such movements are valued at \$50.5 billion (55% of total value). Direct rail-related employment impacts associated with

the corresponding manufacturing (*Petroleum Production, Chemical Manufacturing, and Plastics & Rubber Production*) totals 35,360 jobs, which accounts for 93.7% of statewide sector jobs for those combined industries.

Table B-10: Total Rail Activity Job Impacts by Industry

Industry	Direct	Indirect	Induced	Total
Manufacturing	74,670	11,290	1,510	87,470
Retail trade	35,510	4,820	29,110	69,440
Health & social services	9,470	90	32,470	42,030
Accommodation & food services	11,080	5,650	17,260	33,990
Administrative & waste services	3,170	19,880	6,500	29,550
Other services	6,210	6,370	14,840	27,420
Ag, Forestry, Fish & Hunting	10,310	14,460	910	25,680
Professional- scientific & tech svcs	2,810	16,610	5,210	24,630
Construction	15,660	7,470	1,170	24,300
Transportation & Warehousing	6,990	13,960	2,990	23,940
Wholesale Trade	4,280	13,030	4,310	21,620
Finance & insurance	430	7,560	10,220	18,210
Real estate & rental	930	6,930	7,850	15,710
Mining	6,550	6,500	260	13,310
Management of companies	160	9,100	650	9,910
Arts- entertainment & recreation	900	1,200	4,000	6,100
Educational svcs	1,020	170	4,730	5,920
Information	750	2,980	2,100	5,830
Government & non NAICs	1,150	2,170	1,680	5,000
Utilities	1,360	2,870	610	4,840
Total	193,410	153,110	148,380	494,900

Source: CDM Smith
FTE job-years

- *Retail Trade* – In sum, Retail Trade accounts for 14% of total employment related to rail. Direct retail-trade employment (35,510) comprises 51% of total retail trade industry employment related to Louisiana rail activity (69,440). The other 33,930 jobs reflect indirect (i.e., supplier-related) and induced (income re-spending related) employment impacts.
- *Health & Social Services* – Conversely to the heavily-proportioned direct job share of total jobs for the preceding aggregate industries, direct *Health & Social Service* jobs (9,470) only account for 23% of the total 42,030 jobs related to Louisiana rail activity. The other 32,560 jobs primarily reflect the induced impacts associated with income re-spending.
- *Transportation & Warehousing* – Also of note, transportation & warehousing job impacts total 23,940. The 6,990 direct jobs include the 2,930 direct rail jobs (see Table B-4); the other 4,060 reflect other transport related jobs stemming from inbound commodities used directly in the operations of transportation industries, such as refined petroleum products (i.e., gasoline), motor vehicle parts, tires, etc. Without the intermediate inbound products (e.g., tires, ships, railroad rolling stock, etc.), the transportation industries could not function.

Conclusion – The economic analysis clearly demonstrates that rail activities and services provide a vital role in Louisiana’s economy. The associated employment, income, value added, output, and indirect business tax impacts span all industries and reach every region of the state. Key findings include:

- The impact of rail transport goes far beyond the 2,930 direct employed in the provision of rail transport. When the freight and visitor user impact activities and the indirect/induced effects are included, rail-related employment in Louisiana totals 494,900 jobs. These total jobs represent 19.5% of the 2.53 million jobs statewide.
- Manufacturing is perhaps the most rail-integrated industry, especially the chemical/petro-chemical subsectors. Tracing commodity flows to industry output indicates that 74,670 direct jobs arise in industries that use rail to either ship finished goods/products or receive inputs via rail. These direct manufacturing jobs (excluding multiplier effects) account for 53% of manufacturing sector employment in Louisiana.
- If railroads did not accommodate demand, consignees and shippers could use other modes (i.e., truck, water, air, etc.) to transport freight. However, the use of other modes would likely entail higher transport costs (due to long transport distances, price, logistics, etc.), and could increase overall demand (and resulting handling costs) for all users of other modes (both the diverted rail users as well as current users). The long-term result would be a partial migration of industry away from Louisiana to other locations with relatively better rail accessibility, and better modal options/mix.

While it would be erroneous to conclude that all of these impacts are entirely and solely dependent on rail, and would disappear if rail completely disappeared, the findings do show that that rail service facilitates business throughout the state. Specifically, these impacts highlight the magnitude of rail use by manufacturers across the state, as well as dealers, retailers, and others who transport materials, component parts, and products. In particular, the rail-related economic impacts are primarily associated with chemical and petro-chemical movements.

Appendix C.

Key Capacity and Operational Improvements on the New Orleans-Baton Rouge Corridor

This appendix provides a summary of recommended improvements to the New Orleans-Baton Rouge rail line. For additional details please see *Baton Rouge – New Orleans Intercity Passenger Rail Service Development Plan, Volume I, Summary Report*, December 2010. Most of these recommended improvements need to be in place before service begins while other improvements will be needed as service frequencies and speeds are increased.

New Orleans Gateway and New Orleans Union Passenger Terminal – As outlined in the main report, improvements to the New Orleans Rail Gateway network and NOUPT are a precursor to major improvement to corridor rail lines and critical to the operation of all proposed passenger rail routes.

Rail/Highway Grade Crossings – As outlined in the report noted above, there are 157 public and private grade crossings in the corridor. All the member states have grade crossing programs that are implementing crossing improvements and actively seeking additional funding to continue to improve or eliminate highway-rail grade crossings along their rail lines, including the New Orleans-Baton Rouge corridor. Grade crossing improvements range from complete separation, to consolidation of multiple crossings into a few upgraded crossings, to sealed corridors (crossings with four-quadrant gates with lane medians that prevent vehicles from running around the gates). In most cases all crossings will be upgraded with Constant Warning Time Circuits that automatically adjust warning time to individual train speed. Finally, new sidings can be constructed or grade crossings that intersect sidings can be relocated to avoid highways being blocked when train meets occur.

Existing Line Upgrades – The existing track and roadbed needs to be rehabilitated with replacement of 50% of the cross-ties. To address subgrade stability issues, embankment stabilization or grout injection at key locations and a track raise for the entire KCS route needs to be undertaken. In order to support the increased super-elevation associated with 110 mph passenger service, 12 curves need to be modified with longer spirals.

Signal System Upgrades – Between Baton Rouge, LA and Frelsen Junction on the KCS, dispatcher managed Centralized Traffic Control (CTC) System supporting 110 mph operations needs to be installed to replace the current Automatic Block Signal System. Currently the existing sidings have manual turnouts, and the sidings themselves are not controlled for track occupancy. As a result trains entering a siding must stop, and crews must line the switch so that the train can then proceed slowly into and through the siding. The switch must then be aligned for main line movement. This activity takes a significant amount of time and negatively impacts line capacity. Installing CTC (so the train does not have to stop), upgrading siding turnouts to allow 45 mph operation (#20 turnouts) and upgrading siding track signal systems would allow faster clearing of the main line for trains entering the siding and less delay for trains meeting and passing.

New Double Track and Siding Extensions – Adding passenger rail service will require substantial capacity increases. In Baton Rouge it is recommended that the yard lead be extended to avoid using the main line for switching. Many existing sidings are too short for today's longer freight trains.

Lengthened sidings provide new flexibility for train meets and passes. The following siding extensions or double track segments are recommended:

- Essen Siding
- Gonzales Siding
- Barman Siding
- McElroy Siding
- Gramercy Siding
- Norco Siding
- Frellsen Siding
- Frellsen Second Main Track (CN)
- Mays Yard Second Main Track (CN)

In lieu of signal upgrades/additional track/track realignments at East Bridge Junction, Canadian National recommends a grade-separated flyover for passenger trains at East Bridge Junction.

Bridges – All 53 bridges on the KCS need some rehabilitation, upgrades or replacement.

Recommended is new ballast deck bridge superstructure and new substructure to support passenger service.

Bonnet Carré Bridge – The existing Bonnet Carré Spillway cannot support rail passenger service and should be replaced. A number of timber piles and over half of the pier caps are in poor condition. The current speed limit on the bridge is 10 mph, which is not suitable for passenger service.

Recommended is a new concrete ballasted deck bridge. A new bridge would also return the line to its original tangent alignment that existed before the spillway was built.

The total estimated costs for a full build-out of eight round trips daily, operating between Baton Rouge and New Orleans with maximum allowable speeds of 110 mph, is \$522 million in today's dollars. However, as noted in Chapter 3, an ongoing update of the 2010 study has estimated costs at \$255 million for a scaled down vision of service implementation.

The 2013 *Draft Baton Rouge – New Orleans Intercity Rail Feasibility Study*, Capital and Operating Plan, relies heavily on the technical work done for the previously discussed 2010 *Rouge – New Orleans Intercity Passenger Rail Service Development Plan, Volume I, Summary Report*. In an effort to pare the capital investment required for start-up, the plan included assumptions about fewer train frequencies (i.e., two daily round trips) with maximum allowable speeds of 79 mph. It also assumed the lease of rolling stock from Amtrak rather than the purchase of new equipment.

Once the service is established and ridership grows, the service can build toward the full build-out envisioned in the 2010 study.

Appendix D.

Key Capacity and Operational Improvements on the Baton Rouge-Lake Charles Segment of the New Orleans-Lake Charles Corridor

This appendix provides a summary of recommended improvements to the Baton Rouge – Lake Charles segment of the New Orleans – Lake Charles rail line. For additional details please see the *Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan, Volume I, Summary Report*, June 2007. Most of these recommended improvements need to be in place before service begins while other improvements will be needed as service frequencies and speeds are increased.

New Orleans Gateway and New Orleans Union Passenger Terminal – As outlined in the main report, improvements to the New Orleans Rail Gateway network and NOUPT are a precursor to major improvement to corridor rail lines and critical to the operation of all proposed passenger rail routes.

Rail/Highway Grade Crossings – As with the New Orleans – Baton Rouge route discussed in Appendix C, states are engaged in trying to improve their rail/highway crossings. There are almost 200 grade crossings on this segment of the corridor.

Existing Line Upgrades – The existing track and roadbed needs to be brought to a state-of good-repair with selected replacement of cross-tie, rail and line and surface. Any subgrade stability issues should be addressed with embankment stabilization or grout injection and/or additional ballast which raises the track. In order to support the increased super-elevation associated with 90 mph passenger service, selected curves need to be modified with longer spirals.

Signal System Upgrades – Between Baton Rouge and Lake Charles there are segments of Automatic Block Signals (Iowa Junction-Lake Charles) and segments without signals controlled via Track Warrant (Kinder-Iowa Junction). The remainder of the route is controlled with CTC (Lobdell Junction-Kinder). CTC needs to be installed on track segments without it in order to assure safe fast passenger service. Signal systems need to be upgraded to support 90 mph operations. On line segments without CTC, the existing sidings and junctions have manual turnouts, and the sidings themselves are not controlled for track occupancy. As a result trains entering a siding must stop, and crews must line the switch so that the train can then proceed slowly into and through the siding. The switch must then be aligned for main line movement. This activity takes a significant amount of time and negatively impacts line capacity. Siding turnouts on all line segments should be upgraded to allow 45 mph operation (#20 turnouts), and the siding track signal systems should be upgraded to allow faster clearing of the main line resulting in less delay for trains meeting and passing. If the alternate route between Baton Rouge and Lafayette is chosen (currently an abandoned right-of-way), CTC and #20 turnouts need to be installed as part of construction. In Baton Rouge the CN crossing should be fully signaled.

New Double Track and Siding Extensions – Adding passenger rail service will require substantial capacity increases. Many existing sidings are too short for today's longer freight trains. Lengthened sidings provide new flexibility for train meets and passes. In Baton Rouge it is recommended that a yard lead be extended north over the CN crossing to connect with the first switch into the Exxon

facility. This would avoid using the main line for switching and transfers to the Exxon facility. As passenger frequencies are added, this switching lead would be extended to the O.K. Allen Bridge. As more passenger frequencies are added, an existing track east of the main line would be upgraded into a new third track extending from the Baton Rouge station to the O.K. Allen Bridge. This would further separate passenger and freight trains in Baton Rouge. In West Baton Rouge it is recommended that the direct connection between KCS and UP be restored. This new 8,000-foot connection would bypass the slow circuitous route via Anchorage Junction. Switches would be realigned to make this the main route. Eventually a second track would be added to this connection. A short siding at West Junction bypassing the existing connection would allow an opposing train to be held closer to the single track bridge speeding operations. Between Anchorage and Livonia at least one or two sidings need to be constructed. These improvements would also benefit freight operations. At Lake Charles extensions of track leads on both sides of yard are recommended to reduce the conflicts between freight and passenger trains and port transfers.

Route Options – Between Baton Rouge and Lake Charles there are two route options; the first via Livonia and Kinder currently has active freight service, while the second via Lafayette utilizes an abandoned former Southern Pacific right-of-way. While the first route is attractive for start-up with potentially lower capital costs, it has heavy freight traffic and bypasses Lafayette. Major capacity projects on the Livonia/Kinder route are:

- 4,000-foot flyover at Livonia for passenger trains connecting UP's Anchorage Subdivision and Beaumont Subdivision. This flyover avoids conflicts with activities at UP's Livonia Yard just south of the junction;
- A new siding/connection just west of the junction on the Beaumont Subdivision to allow passenger trains to pass eastbound Beaumont Subdivision freight trains being held out of Livonia Yard;
- Between Livonia and Kinder extend three sidings (Krotz Springs, Lawtell and Basile) to 9,000 feet each. New turnouts allowing faster speeds would also be installed. This makes sidings usable by today's longer freight trains;
- Between Kinder and Iowa Junction, UP's Lake Charles Subdivision (19.4 miles) needs to be upgraded with a new track structure, CTC and upgraded siding switches on the Edna siding. The connections to the Beaumont Subdivision would be upgraded for higher speeds;
- At Iowa Junction the connection between UP's Lake Charles Subdivision and BNSF's Lafayette Subdivision would be upgraded for higher speeds, and Iowa siding would be lengthened to form a section of double track through the junction to allow for meets at the junction.

Major capacity projects on the approximately 52-mile Baton Rouge – Lake Charles “Direct Route” via Lafayette are:

- New rail line between Kahns (West Baton Rouge) and Atchafalaya River Basin;
- Passenger train flyover over UP's heavily trafficked Livonia Subdivision at Grosse Tete;
- 18-mile viaduct over the Atchafalaya River Basin;
- Two movable bridges;
- Two three-mile sidings at each end of the Atchafalaya Viaduct;
- Rebuilding the 10-mile Delta short line from Lafayette to Breaux Bridge;
- Construction of a second track bypassing BNSF Lafayette Yard;

- Upgrading and extensions of the Crowley, Midland, and Roanoke sidings;
- Iowa Junction siding would be extended eastward, while westward it would be extended to Lake Charles creating a segment of double track between Lake Charles and Iowa Junction.

As additional frequencies are added, additional segments of double track will be required.

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Appendix E.

Key Capacity and Operational Improvements on the New Orleans-Gulfport-Mobile Corridor

This appendix provides a summary of recommended improvements to the New Orleans- Gulfport-Mobile rail line. For additional details please see the *Gulf Coast High-Speed Rail Corridor, New Orleans to Mobile Corridor Development Plan, Volume I, Summary Report*, October 2006. These recommended improvements would be phased over time based on the number of frequencies to be operated.

New Orleans Gateway and New Orleans Union Passenger Terminal – As outlined in the main report, improvements to the New Orleans Rail Gateway network and NOUPT are a precursor to major improvement to corridor rail lines and critical to the operation of all proposed passenger rail routes.

Rail/Highway Grade Crossings – As with the New Orleans – Baton Rouge route discussed in Appendix C, states are engaged in trying to improve their rail/highway crossings.

Existing Siding Upgrades (all current sidings) – The existing sidings on the route, while they have controlled switches, have 25 mph turnouts and the sidings themselves are not controlled for track occupancy. As a result trains entering sidings travel at a very slow speed. This negatively impacts line capacity. Upgrading siding turnouts to allow 45 mph operation (#20 turnouts) and upgrading siding track signal systems would allow faster clearing of the main line for trains entering the siding and less delay for trains meeting and passing.

New Sidings, Double Track and Siding Extensions – Siding length and distance between sidings also impacts line capacity. Short sidings (less than 21,000 feet) cannot accommodate multi-train meets or handle today's longer freight trains. Re-spacing sidings provides more uniform siding-to-siding running time. One challenge in achieving optimum siding length and spacing is the number of bayous, rivers and wetlands crossed by the route. In Louisiana Lake Catherine siding would be lengthened, and the Michoud double track would be extended one mile eastward.

In Mississippi the plan recommends:

- Lengthening Orange Grove, Gautier, Nicholson Avenue and Claiborne sidings;
- A new siding would be constructed between the East and Middle Pascagoula Rivers;
- A new Ocean Springs siding would be constructed two miles east of the current short Ocean Springs siding; the siding would improve siding spacing and minimize the impact on local highway traffic of trains waiting for meets;
- Beauvoir and Harbin sidings would be linked to form a 17-mile stretch of double track through Gulfport; this segment of the corridor has about one-third of all the grade crossings on the line.

The recommended 17-mile stretch of double track through Gulfport would facilitate running meets between trains (freight and passenger) reducing grade crossing delays. Also as the mid-point of the

route this segment of double track facilitates the clock time scheduling of passenger trains (trains scheduled out of each terminal at a set hourly time) since they would both meet at this point.

In Alabama capacity improvements include extending double track from Choctaw Yard to Brookley Siding and constructing a new Choctaw siding. The St. Elmo siding would be replaced with two new sidings at Fowl River and Little Franklin. Long term, double track would be extended from Brookley to Fowl River.

Upgrade Movable Bridges – There are seven movable bridges between New Orleans and Mobile. While the bridges are structurally sound, as a result of their design (use of stringers on 9-foot centers instead of 6-foot 6-inch centers) there are movements of the rails and ties under trains. This movement causes signal system reliability issues on former Louisville & Nashville Railroad bridges when trains are operated over the bridges at speeds over 30 mph (25 mph is the maximum authorized speed for freight trains). This situation continues despite major upgrades to the bridges undertaken by CSXT to facilitate traffic growth. Another issue is that some bridges are founded on timber or steel pile piers, which results in additional bridge flexibility. While some improvements were reportedly made in conjunction with the line rebuilding after Katrina, further structural upgrades to the movable bridges should be investigated.

Gentilly and Sibert Freight Yards – Two major freight yards, CSXT's Gentilly freight yard located in New Orleans and Sibert freight yard located in Mobile, have capacity and operational issues that could significantly impact the reliability of corridor rail passenger operations. Obsolete track layouts and a lack of capacity cause the operations of both yards to spill over to the main line. Main line sidings are used to stage trains waiting to enter the yard. Both actions significantly degrade line capacity. The impact of additional outlying staging capacity or additional departure/receiving tracks should be studied.

Appendix F.

Key Capacity Improvements on the New Orleans-Meridian Corridor

This appendix provides a summary of recommended improvements between Meridian and New Orleans on the New Orleans – Meridian – Birmingham – Atlanta rail line. For additional details please see *Gulf Coast High-Speed Rail Corridor Development Plan, Phase I: Improvement Implementation Plan – Meridian to New Orleans, Volume I, Summary Report*, September 2002. These recommended improvements would be phased over time based on the number of frequencies to be operated.

New Orleans Gateway and New Orleans Union Passenger Terminal – As outlined in the main report, improvements to the New Orleans Rail Gateway network and NOUPT are a precursor to major improvement to corridor rail lines and critical to the operation of all proposed passenger rail routes.

Rail/Highway Grade Crossings – As with the New Orleans – Baton Rouge route discussed in Appendix C, states are engaged in trying to improve their rail/highway crossings.

Centralized Traffic Control and Upgrades to all Existing Sidings – CTC, where siding signals and switches are controlled by a dispatcher, is critical to increasing line capacity for additional passenger trains and decreasing running time on the New Orleans-Meridian corridor. Currently the existing sidings have manual turnouts, and the sidings themselves are not controlled for track occupancy. As a result trains entering a siding must stop, and crews must line the switch so that the train can then proceed slowly into and through the siding. The switch must then be aligned for main line movement. This activity takes a significant amount of time and negatively impacts line capacity. Installing CTC supporting 90-mph operations, upgrading siding turnouts to allow 45 mph operation (#20 turnouts) and upgrading siding track signal systems would allow faster clearing of the main line for trains entering the siding and less delay for trains meeting and passing.

New Sidings, Double Track and Siding Extensions – One challenge in achieving optimum siding length and spacing is the number grades on the line. NS has indicated that sidings located on grades lead to operational problems. In Mississippi the plan noted above recommends the installation of CTC, #20 turnouts and siding signal control at Basic, Hawkes, Shows Field, Dragon and Richburg. Also in Mississippi in addition to signal and turnout improvements the plan recommended that the sidings at Derby, Barnett and Lumberton be lengthened. Three new sidings in Mississippi are recommended: Carriere, Moselle and Heidelberg. Because of the distance between Derby and X Tower (50 miles), the plan recommended early action on the construction of the Carriere siding (funding design underway) and upgrading of Derby siding.

Two sidings located in Louisiana – Woods and Pearl River – are also recommended for improvements.

Meridian Interlocking and Track Configuration – The Meridian Terminal track configuration, left over from five separate railroad companies that served Meridian at one time, had many operational and physical barriers to efficient flow through the terminal. As a part of the Meridian Speedway project (a joint effort of NS and KCS on the line from Meridian to Shreveport), the terminal has been redesigned. The design is presently being phased in. Other trackage and operational changes will eliminate the many conflicts between the two railroads as the new track configuration is installed. NS

fuels many of its trains at Meridian. Also, there are crew changes, exchanges of freight, and interchanges of through trains between the two railroads there, so most NS trains at present stop in Meridian.

At the completion of track changes, KCS Artesia Subdivision trains will not have to stop in Meridian except for crew changes, and the two crossings of NS by KCS through trains will be eliminated. All pick-ups and set-outs for Meridian by main line trains will be handled at Marion, approximately four miles from Meridian on the Artesia Subdivision. These cars will be shuttled to Meridian by a local switch crew. This will eliminate the working of through trains in the KCS Meridian Yard and improve movement of through freight trains.

At this writing, no signaling will be provided on either railroad between the end of ABS signaling south of Meridian and the beginning of CTC east of Meridian on NS. KCS CTC will end just west of the present west yard limit. The KCS Artesia Subdivision east of Meridian is unsignaled and will remain so. All turnouts in the terminal will be hand-thrown. However, with the elimination of the double crossings between the two railroads, the effect of the hand-thrown turnouts on terminal throughput is expected to be minimal. Amtrak loading and unloading at the depot platform is provided for in the new design.

Upgrade Movable Bridges – Three movable bridges – Seabrook, Lake Pontchartrain and Pearl River – are located on the route in Louisiana. Speed restrictions on the bridges negatively impact running time on the New Orleans-Meridian route. Recommended in the Phase I: Improvement Implementation Plan is the installation of an improved miter rail design on the bridges.

Appendix G.

Short-range Investment Program

G.1 Freight and Passenger Projects

Project Name	Project Description	Project Benefits	Cost
New Orleans Rail Gateway	Initial construction of the project. Cost estimated 10 percent of project needs.	Provides for improved interchange between Class I railroads. Eliminates grade crossings and provides congestion mitigation.	\$49.7M Source: Federal TIGER, CMAC, Rail Line Relocation, PNRS programs; state and local sources; railroad contributions.
Short Line Track Upgrades	Upgrades of short line trackage to handle 286,000-bound maximum carload weights. Cost estimated at 20 percent of statewide needs.	Provides for more efficient operations and 286,000-pound carload capability.	\$41.0M Source: Federal TIGER program; railroad contributions. No state funds.
NOGC Rail Relocation	Relocation of New Orleans and Gulf Coast Railroad tracks south of New Orleans to access new port facilities. Cost estimated 15 percent of project needs.	Provides for multiple crossing closures and more efficient operations.	\$40.5M Source: Federal TIGER, PNRS, Rail Line Relocation programs.
Amtrak Station Upgrades	Upgrades of Louisiana Amtrak station for ADA compliance and State of Good Repair: New Orleans, Lafayette, and Lake Charles.	Assures ADA compliance and a state of good repair for three stations.	\$9.5M Source: Federal Intercity Passenger Rail Service Corridor program, TIGER; local sources.
Shreveport-Dallas Service	Environmental planning, design, and initial construction of route in Louisiana.	Provides for enhanced mobility for Louisiana residents by instituting a new rail service on an intercity corridor linked only by highways.	\$30M Source: local sources; others to be determined.
Baton Rouge-New Orleans Service	Grade crossing improvements and replacement of the Bonnet Carré Spillway bridge.	Provides for enhanced mobility for Louisiana residents by instituting a new rail service on an intercity corridor linked only by highways.	\$75M Source: local sources; others to be determined.
Total Program			\$245.7M

G.2 Crossing Projects

Project Name	Project Description	Project Benefits	Cost
BNSF (New Iberia) LA 14/Center St. H.009843	Safety improvement to BNSF crossing, District 3, Iberia Parish	Enhances public safety.	\$300,000 Source: federal and state funds
Cleveland Ave: NS RR Xing (Slidell) H.009152	Safety improvement at NS crossing, District 62, St. Tammany Parish	Enhances public safety.	\$1,500,000 Source: federal and state funds
KCS (Deridder) Several RR Xing H.010088	Safety improvement at several crossings, District 7, Beauregard Parish	Enhances public safety.	\$900,000 Source: federal and state funds
UP RR Xings (Grant) H.010669	Safety improvement at UP crossings, District 8, Grant Parish	Enhances public safety.	\$700,000 Source: federal and state funds
UP Several RR Xings (Caddo) H.011028	Safety improvement at UP crossings, District 4, Caddo Parish	Enhances public safety.	\$1,200,000 Source: federal and state funds
NS Several RR Xings (Plaquem & St. Bern) H.011103	Safety improvement at NS crossings, District 2, Plaquemines and St. Bernard Parishes	Enhances public safety.	\$200,000 Source: federal and state funds
US 61: IC RR Xing (Baton Rouge) H.011109	Safety improvement at IC (CP) crossing, District 61, East Baton Rouge	Enhances public safety.	\$500,000 Source: federal and state funds
LA 1064: IC RR Xing (Tangipahoa) H.011113	Safety improvement at IC (CP) crossing, District 62, Tangipahoa Parish	Enhances public safety.	\$200,000 Source: federal and state funds
US 425: UP RR Xing (Mer Rouge) H.011124	Safety improvement at UP crossing, District 5, Morehouse Parish	Enhances public safety.	\$100,000 Source: federal and state funds
ALM Several RR Xings (Ouach & Morehouse) H.011144	Safety improvement at ALM crossing, District 5, Morehouse and Ouachita Parishes	Enhances public safety.	\$200,000 Source: federal and state funds
Riverton Camp Rd: UP RR Xing (Caldwell) H.011188	Safety improvement at UP crossing, District 58, Caldwell Parish	Enhances public safety.	\$300,000 Source: federal and state funds
LA 1029: IC RR Xing (Walker) H.011129	Safety improvement at IC (CP) crossing, District 62, Livingston Parish	Enhances public safety.	\$200,000 Source: federal and state funds
LA 107: KCS RR Xing (Mansura) H.011229	Safety improvement at KCS crossing, District 8, Avoyelles Parish	Enhances public safety.	\$100,000 Source: federal and state funds
BNSF (New Iberia) Jeff. Terrace Blvd. H.009868	Safety improvement at BNSF crossing, District 3, Iberia Parish	Enhances public safety.	\$400,000 Source: federal and state funds
BNSF (Crowley) Several Crossings H.010073	Safety improvement at BNSF crossings, District 3, Acadia Parish	Enhances public safety.	\$1,200,000 Source: federal and state funds
RT 207 (Central Dr): BNSF RR Xing (Iberia) H.010614	Safety improvement at BNSF crossing, District 3, Iberia Parish	Enhances public safety.	\$100,000 Source: federal and state funds
Deare Street: BNSF RR Xing (New Iberia) H.010666	Safety improvement at BNSF crossing, District 3, Iberia Parish	Enhances public safety.	\$500,000 Source: federal and state funds

Project Name	Project Description	Project Benefits	Cost
BNSF (Cade) LA 92 H.009847	Safety improvement at BNSF crossing, District 3, St. Martin Parish	Enhances public safety.	\$300,000 Source: federal and state funds
UP (Opelousas) Several RR Xings H.010090	Safety improvement at UP crossing, District 3, St. Landry Parish	Enhances public safety.	\$1,500,000 Source: federal and state funds
LA 54: IC RR Xing (Garyville) H.010693	Safety improvement at IC (CP) crossing, District 62, St. John Baptist Parish	Enhances public safety.	\$100,000 Source: federal and state funds
LA 158: KCS RR Xing (Grant) H.011119	Safety improvement at KCS crossing, District 8, Grant Parish	Enhances public safety.	\$100,000 Source: federal and state funds
LA 14: LDRR Xing (New Iberia) H.011127	Safety improvement at LDRR crossing, District 3, Iberia Parish	Enhances public safety.	\$500,000 Source: federal and state funds
LA 50: KCS RR Xing (St. Rose) H.011132	Safety improvement at KCS crossing, District 2, St. Charles Parish	Enhances public safety.	\$100,000 Source: federal and state funds
		Total Program	\$11.2M

G.3 Grade Separation Projects

Project Name	Project Description	Project Benefits	Cost
LA 1 RR Bridge @ Dow H.009288	Phase 5 (Final Plans), FY 13-14	Eliminates crossing exposure and thus enhances public safety.	\$1.5M Source: federal and state funds
LA 3168: New Bridge @ BNSF – US 90 H.009520	Phase 2 (Env.), FY 13-14; Phase 5 (Preliminary Plans), FY 14-15; Phase 5 (Final Plans), Phase 4 (Utilities), Phase 3 (R/W), FY 15-16	Eliminates crossing exposure and thus enhances public safety.	\$6.6M Source: federal and state funds
Gramercy Bridge Approaches H.002960	Phase 5 (Preliminary Plans), FY 13-14; Phase 5 (Final Plans), FY 14-15	Eliminates crossing exposure and thus enhances public safety.	\$2.1M Source: federal and state funds
LA 397: New Br. @ I-10 & UPRR (Calcasieu) H.009521	Phase 2 (Env.), FY 13-14; Phase 5 (Prelim Plans), FY15-16; Phase 5 (Final Plans), Phase 4 (Utilities), Phase 3 (R/W), FY 16-17	Eliminates crossing exposure and thus enhances public safety.	\$9.35M Source: federal and state funds
LA 3105: Underpass @ KCS S OF I-20 (Bossier) H.009522	Phase 2 (Env.), FY 14-15; Phase 5 (Prelim Plans), FY16-17; Phase 5 (Final Plans), Phase 4 (Utilities), Phase 3 (R/W), FY 17-18	Eliminates crossing exposure and thus enhances public safety.	\$17.15M Source: federal and state funds
BNSF (New Iberia) H.006381	Phase 2 (Env.), FY 14-15	Eliminates crossing exposure and thus enhances public safety.	\$0.5M Source: federal and state funds
		Total Program	\$37.20M

Appendix H.

Long-range Investment Program

H.1 Freight and Passenger Projects

Project Name	Project Description	Project Benefits	Cost
New Orleans Rail Gateway	Full construction of the project. Cost estimated 90 percent of project needs.	Provides for improved interchange between Class I railroads. Eliminates grade crossings and provides congestion mitigation.	\$447.1M Source not determined.
Short Line Track Upgrades	Upgrades of short line trackage to handle 286,000-bound maximum carload weights. Cost estimated at 80 percent of statewide needs.	Provides for more efficient operations and 286,000-pound carload capability.	\$164.0M Source not determined. No state funds.
NOGC Rail Relocation	Relocation of New Orleans and Gulf Coast Railroad tracks south of New Orleans to access new port facilities. Cost estimated at 85 percent of project needs.	Provides for multiple crossing closures and more efficient operations.	\$229.5M Source not determined.
LAS Road Closures	Working with DOTD on road closures.	Enhances public safety.	\$25.0M Source not determined.
AKDN Road Closures, Crossing Safety Improvement	Closing of multiple road crossing within short distances on the railroad and placement of highway stop signs on state roads	Enhances public safety.	\$1.5M Source not determined.
NOPB Road Closures	Working with DOTD on road closures.	Enhances public safety.	\$20.0M Source not determined.
Port Rail Link Road Closures, Crossing Safety Improvements	Working with DOTD on road closures and upgrade crossing warning signals.	Enhances public safety.	\$5.0M Source not determined.
Baton Rouge-New Orleans Intercity Rail	Upgrade of KCS Baton Rouge-New Orleans rail corridor for implementation of commuter rail service.	Enhances passenger mobility.	\$447.0M Source not determined. No state funds.
Shreveport-Dallas Intercity Rail	Full construction of route and stations; acquisition of rolling stock.	Enhances passenger mobility.	\$270.0M Source not determined.
New Orleans-Mobile Intercity Rail	Louisiana's contribution for covering implementation costs.	Enhances passenger mobility.	\$5.0 Source not determined.
Total Program			\$1,614.1M

H.2 Grade Separation Projects

Project Name	Project Description	Project Benefits	Cost
LA 1 RR Bridge @ Dow H.009288	Phase 6 (Letting), FY 18-19	Eliminates crossing exposure and thus enhances public safety.	\$40.00M Source: federal and state funds
BNSF (New Iberia) H.006381	Phase 5 (Prelim Plans), FY18-19; Phase 5 (Final Plans), Phase 4 (Utilities), Phase 3 (R/W), FY 19-20	Eliminates crossing exposure and thus enhances public safety.	\$6.10M Source: federal and state funds
KCS (West Monroe) H.001547	Phase 2 (Env.), FY 19-20; Phase 5 (Prelim Plans), FY20-21; Phase 5 (Final Plans), Phase 4 (Utilities), Phase 3 (R/W), FY 21-22	Eliminates crossing exposure and thus enhances public safety.	\$6.60.00M Source: federal and state funds
Gramercy Bridge Approaches H.002960	Phase 6 (Letting), FY 20-21	Eliminates crossing exposure and thus enhances public safety.	\$20.00M Source: federal and state funds
		Total Program	\$72.70M

Appendix I.

Feedback from the Stakeholder Outreach

I.1 Introduction

I.2 Public Outreach

Three Public Meetings on the Rail Plan were held in the fall of 2012. The first was held in New Orleans on October 2 hosted by and held at the Regional Planning Commission; the second in Baton Rouge on October 3 hosted by the Capital Region Planning Commission and held at a local park and recreation facility; and the third in Shreveport on October 4 hosted by and held at the Northwest Louisiana Council of Governments. The meetings were advertised in the local press. Meeting notices were also posted on the DOTD's website. Attendees at the three meetings included members of the general public; representatives of railroads and ports; local, regional, and state planners; and passenger rail advocates, among others.

A representative of CDM Smith, the consulting firm assisting DOTD with the State Rail Plan, provided a PowerPoint presentation at the three meetings that explained the purpose and requirements of State Rail Plans, Louisiana's rail planning process, and a brief summary of existing freight and passenger services in Louisiana as well as planned high speed rail and conventional passenger service improvements.

Issues and concerns were solicited from attendees, who were provided with a Rail Stakeholder Survey and comment cards. The survey asked for comments pertaining to:

- A state rail vision
- Operational and infrastructure problems and needs
- Strategies for investments
- General comments

Of particular interest were public comments on a state rail vision. Such a vision is a fundamental element of the State Rail Plan. The vision articulates what Louisiana residents and businesses want and need from their state rail system. With the wants and needs understood, DOTD can craft a vision along with supporting service freight and passenger service objectives and a program on investments. The Louisiana state rail vision is noted in Chapter 5.

I.2.1 Public Meetings

I.2.1.1 New Orleans

Approximately 30 persons attended the Public Meeting in New Orleans October 2. Among topics raised by attendees are noted in the bulleted list below. In some instances, clarifications are added with a subsequent indented bullet.

- More DOTD support of improvements for the Almonaster Bridge in New Orleans.
 - The ongoing project will replace the existing two-lane bridge with a new four-lane vertical lift span bridge, and eliminate two rail crossings.
- Implementation of Baton Rouge – New Orleans commuter rail.

- The concept was studied by DOTD in 2010 and is currently under further study by the Regional Planning Commission in New Orleans.
- Conversion of out-of-service rail lines to trails.
 - Rails-to-trails conversions enable the preservation of rights-of-way which might be otherwise lost through abandonments.
- Investigation of potential passenger rail corridors.
 - Corridors that have been studied include Meridian – New Orleans – Lake Charles as part of the Gulf Coast Rail Corridor that could link Houston to New Orleans, New Orleans to Mobile, and New Orleans to Birmingham and Atlanta.
- Improvements in the steel wheel interchange of rail cars in New Orleans.
 - Such improvements are part of ongoing work for the New Orleans Rail Gateway Project. This project is aimed at speeding the interchange between “eastern” and “western” railroads in New Orleans.
 - Improvements to intermodal connections to the terminals in the Port of New Orleans and to South Louisiana ports. A freight intermodal connection occurs when, example, a container is off-loaded from a truck chassis to a railcar. In Louisiana, such intermodal connections only occur in New Orleans.

Attendees also offered their thoughts on a rail vision for Louisiana. These included:

- The state needs a dedicated source of funding for rail projects.
- The state and the private railroads should be encouraged to pursue public-private partnerships (PPPs) to further implementation of improvement projects.
- PPPs are important, as opportunities to secure public funding are scarce.
- Project sponsors need to consider the impact to communities from improvements.
- In order to adequately address rail traffic growth, rail transportation needs to meet the freight and passenger transportation market demands.

I.2.1.2 Baton Rouge

Approximately 50 people attended the Public Meeting in Baton Rouge October 3. The bulk of comments received pertained to the potential implementation of Baton Rouge – New Orleans commuter rail. Specifically, the attendees noted:

- The population base to be served is large on both ends: 52,000 people per day travel between the two cities.
- The service would enhance economic development; benefits to communities of such service need analysis.
- A rail line already exists in the corridor (belonging to KCS); it could be upgraded now for improved freight service, and later for new passenger service.
- The service could be used as a means to evacuate the city of New Orleans in case of a Hurricane Katrina-type event.

- The service would provide mobility options for an aging population as well as physically disabled persons.
- Implementing this new service will require a cultural shift in favor of developing a rail alternative.

Attendees also mentioned:

- New passenger rail service going west from Baton Rouge to Lafayette. Planning for the Gulf Coast Rail Corridor had envisioned service between New Orleans, Baton Rouge, Lake Charles and Houston. One alternative included service to Lafayette.
- Cost comparisons of new passenger service versus highway construction should be analyzed.

Attendees offered their thoughts on a rail vision for Louisiana. These included:

- The state needs something more than just “go wider”, a reference to a perceived state bias toward highway construction.
- The state should enable the cultural shift to implement a rail option between Baton Rouge and New Orleans.
- The new service should be built in phases: with a first phase extending part way to Baton Rouge from New Orleans, with a later phase extending the service to Baton Rouge.
- The service should have efficient connections to other transit providers: workplaces are dispersing from the traditional downtown settings.

1.2.1.3 Shreveport

Approximately 15 people attended the Public Meeting in Shreveport October 4. Among topics raised by attendees were:

- Implementation of a Shreveport – Dallas / Fort Worth rail corridor service.
 - This concept is being explored in two studies: one being conducted by Amtrak and the Texas Department of Transportation and sponsored by the East Texas Corridor Council in Longview, TX; and another sponsored by the North East Texas Regional Mobility Authority in Tyler, TX.
- Expansion of the proposed Baton Rouge – New Orleans commuter rail service to Shreveport.
- State acquisition of the KCS/UP route between New Orleans, Baton Rouge and Shreveport to facilitate new passenger rail service implementation.
- Extension of the Amtrak Thruway connecting bus service to Texas Eagle from Shreveport to Texarkana, TX.
 - The current Thruway connection is between Shreveport and Longview, TX.

Attendees offered their thoughts on a rail vision for Louisiana. These included:

- Emphasis on intermodal connections.

- These would include improvements between intercity passenger rail service, e.g., the *City of New Orleans* and local transit service.
- The state should look for the economic development potential from improvements in the state rail network.

I.2.2 Survey Responses

Attendees at the Public Meetings were also provided with surveys and comment cards. Twelve completed surveys were received: five at New Orleans, four at Baton Rouge; and three respondents mailed their completed surveys. A representative sampling of responses follows each survey question below.

- “What potential opportunities for freight rail and passenger rail transportation do you foresee in Louisiana?”
 - Seven respondents mentioned the proposed Baton Rouge – New Orleans rail passenger service. One noted other potential passenger rail corridors as means to connect Louisiana cities with Dallas and Atlanta: Baton Rouge – Shreveport; Shreveport – Marshall, TX; and Shreveport – Meridian, MS. While New Orleans has a connection to Atlanta via Amtrak’s Crescent, there is no direct connection between Louisiana cities and Dallas.
 - Another respondent cited the New Orleans Rail Gateway freight rail project and the conversions or shared use of some rail rights-of-way in New Orleans as bicycle and pedestrian trails.
 - A port representative cited the need for improved rail access at Gulf Coast ports.
- “Interstate passenger traffic is increasing. What is driving the growth?”
 - Four respondents cited increases in the cost of driving and/or owning a car.
- “Do you see potential for high speed passenger rail linking Louisiana to other regions of the country?”
 - Seven respondents said there was potential.
 - One offered that high speed rail was not necessary for most connections, like Baton Rouge – New Orleans, which are relatively close to each other.
- “How can the overall efficiency of Louisiana’s freight and passenger rail systems be improved?”
 - One respondent suggested that Louisiana should institute a plan for a dedicated funding source for freight and passenger rail.
 - Another said major freight railroads should share their infrastructure with passenger rail service providers.
 - A port representative suggested capacity enhancements to relieve line congestion and freight bottlenecks, and improved intermodal connections.
- “What changes in rail policies and programs in Louisiana can be made to better meet transportation needs?”
 - Three respondents suggested the state pursue and support passenger rail options.
 - One said all new rail projects be evaluated for bike/ped trail inclusion, especially in urban areas.

- Another said state agencies, DOTD and the Louisiana Department of Economic Development (LED), should coordinate more closely to support goals for goods movement and job creation and retention.
- A port representative said the state should encourage public private partnerships as a potential means of realizing improvements; and help improve short lines or small railroads.
- “Can you identify any safety issues that need to be addressed? If site-specific, please identify location(s).”
 - Five respondents mentioned highway-rail at-grade crossing safety as a concern.
- “What rail or multimodal bottlenecks impede efficient rail transportation in Louisiana?”
 - Two respondents identified New Orleans as a rail bottleneck.
 - Another mentioned the CSXT Gulf Coast Corridor as another highly contested route.
- “Assuming adequate state funding, what rail projects should DOTD consider?”
 - Six respondents named the proposed Baton Rouge – New Orleans passenger rail service.
 - A port representative suggested improving intermodal connectors, improving passenger rail and movement toward high speed rail.
- “What potential opportunities are there if these improvements are made?”
 - Seven respondents cited the potential for economic and/or economic development opportunities attendant with rail investments.
- “What potential impacts are there if these improvements are not made?”
 - Respondents cited a number of unfavorable outcomes, such as increased highway congestion and gridlock, missed opportunities for economic development, a stagnant economy, and a negative image for the state.
- “What factors should DOTD consider in making rail investment decisions? (Example: cost of project? Public/private benefit? Expansion of or improvement to the rail system to capture new, un-served or under-served industries, or locations of general travel demand?)”
 - One respondent suggested the primary factor should be the public benefit expected from an investment.
 - Another said rail investments should always be considered as part of an alternatives analysis vis a vis roads and highway projects.
 - A third said DOTD should focus on under-served populations and encourage sustainable transportation modes.
 - A port representative suggested public-private partnerships as a means to realize investments.
- “How can the DOTD better serve you?”
 - One respondent suggested DOTD could work with other states on freight and passenger rail initiatives.

- “Is there anything you would like to add? Any questions we did not ask? Additional issues/concerns?”
 - One respondent suggested that Louisiana’s State Rail Plan would benefit from a review of other states that have state-supported rail programs and that best practices of these agencies be captured in the plan.
 - Another suggested that a good idea would be to survey Louisiana residents on where they would like rail, how fast it should go, how often it should run, and how much they are willing to pay to ride it.
 - A third offered that costs of highway investments should be compared to the cost of a rail alternative. The comparison should include costs for maintenance and repair of alternative systems.

I.2.3 Comment Cards

In addition, seven Public Meeting attendees filled out comment cards: four at New Orleans, two at Baton Rouge, and one at Shreveport. The comments included:

- A lack of adequate rail service at regional ports like Lake Provident and Mississippi River ports.
- Support for Baton Rouge – New Orleans rail service.
- Support for enhancement of freight intermodal connectivity to accommodate the forecasted freight growth.
- Interest in legislation giving the state the authority to seek funds for rail improvements.
- Interest in rails-to-trails and rails-with-trails programs.

I.3 Railroad Outreach

I.3.1 Class 1 Railroads Feedback

Louisiana’s Class I railroads – BNSF, CN, KCS, NS, CSXT and UP – reported that they collectively anticipate spending about \$110 million per year on capital improvements in Louisiana over the next three years. In addition, UP noted that it will spend an additional \$200 million through year 2014 on upgrades to its physical plant in the state.

These large rail systems, each operating over thousands of route miles, were largely silent with regard to any assistance they need from DOTD. However, one carrier voiced a desire for DOTD support for the New Orleans Rail Gateway – a project aimed at improving rail car interchange operations between the Class I carriers in New Orleans.

I.3.2 Local, Regional and Switching Railroads Feedback

The local, regional and switching railroads, known commonly and collectively as short lines or small railroads, were contacted as to their specific needs. Of the 14 short lines, nine short lines indicated a need for assistance from DOTD. Key areas where DOTD assistance is desired were:

- Upgrading of lines to handle 286,000-pound loaded car weights.
- Highway-rail at-grade crossing closures.
- Rail line rehabilitation and relocation.

Short line needs are commonly identified in state rail plans. One reason for state assistance boils down to the fact that many of these lines have cash flow insufficient to maintain the track and structures adequately over the long term. Short line railroads typically receive a car handling fee from their connecting Class I carriers, and these fees are typically the major source of revenue for the lines. Funding of improvements such as upgrading lines to handle heavier car weights must come from this revenue. When such revenue is not enough to fund the capital needs, some short lines ask for state assistance. States have justified their support of short lines through the anticipated public benefits, e.g., the economic benefits accrued from serving and preserving key shippers (who otherwise might not have a realistic transportation alternative) and the transportation benefits of keeping heavy loads on short lines and off the parallel roadways that are maintained at state expense.

I.3.3 Louisiana State Railroad Association

The Louisiana State Railroad Association (LRA) represents the railroad industry before government and regulatory authorities and the legislature. Carmack Blackmon is the General Counsel and Legislative Representative for the LRA. He is based in Baton Rouge.

Mr. Blackmon identified funding of short line railroads as an issue in Louisiana, but noted that the DOTD does not have the authority to provide such funding.

Another big issue for railroads in the state is access to ports, he noted. With its Port Priority Program, DOTD is working with ports to upgrade and expand rail access as required.

The LRA is working with LED to proactively consider rail improvements as part of the key improvements needed to attract and retain rail shippers in the state.

I.4 Shipper Outreach

Class I and short line railroad shippers were contacted with regard to their issues concerning rail service in Louisiana. Class I rail shippers were identified by industry associations and DOTD. Short line shippers were identified by the short line railroads and DOTD.

I.4.1 Class I Railroad Shippers Comments

As part of the outreach process, rail shippers and receivers located on Class I railroads were interviewed in order to obtain insight on a number of rail transportation issues. A questionnaire was prepared and telephone interviews were conducted in late 2012 and early in 2013. The interviewees were chosen as they represent a mix of major commodities handled by rail in Louisiana. In all, seven Class I shippers were interviewed. The shippers included three are chemical shippers, a coal receiver, a consumer products manufacturer, an agricultural products company, and a third party logistics firm. Chemicals and coal shipments are by far the largest two commodities handled by rail in the state.

Interviews covered seven questions, listed below.

- “Why do you use rail service for your freight movements as opposed to other modes?”
 - There were a variety of answers. Three shippers responded that they use rail because it is less expensive than shipping by truck. Two others cited customer preference. Another said he only uses rail to supplement shipments received by barge.
- “Are you served by more than one railroad?”
 - Six shippers are served by being served by just one railroad at their facilities. The third part logistics firm deals with all Class I railroad’s intermodal facilities in New Orleans.
- “Do you have problems with your rail service? If so, please describe.”
 - Four shippers, for different reasons, pointed to slow or undependable service from the railroads. Two shippers felt they were paying transportation rates that were too high. One shipper pointed to slow service due to chronic interchange issues between eastern and western Class I railroads in New Orleans.
- “What are the major issues you face with regards to rail service?”
 - Identifying themselves as captive shippers (served by only one railroad), two shippers said they are paying too much for rail service. A third also cited transportation pricing as an issue. Two cited poor reliability in service, with one pointing to poor communication as the underlying reason. Another pointed to the slow interchange of traffic in New Orleans.
- “Are there any state regulations impacting your freight movements or rail service? What changes would you suggest?”
 - No shipper reported any state regulations impacting their freight movements.
- “Should the state have a rail retention and infrastructure improvement program?”
 - Four answered affirmatively, but for different reasons. Two felt that such a program would help captive shippers access a second railroad and thus enjoy some competition for their business, thereby presumably securing lower transportation rates. As a general statement, one said the state should pay more attention to the rail mode. Another said a grade separation near his plant would allow the company to assemble longer trains.
- “Are there other means in which the public sector might assist you increase your use of rail service?”
 - Two shippers suggested that the state could help to build more storage yards. Two others suggested that the state could help them build out to reach a second railroad. Another felt that the state could push railroads to speed up interchanges and improve safety. A sixth felt an intermodal facility in the Shreveport area could help local shippers who now must drive their trailers to Dallas. A seventh felt that the state should promote rail, as it is the “environmentally friendly” mode.
- “Are you optimistic, neutral or pessimistic about the future of your rail freight volume, and why?”
 - Three shippers said they were optimistic. Their reasons were: gas prices are rising, steering shipments from truck to rail; rail volumes are increasing; and rail offers a price advantage versus truck. Three reported neutral or mixed sentiments: two said service issues were a continuing to affect their view of rail’s future; another cited new regulation of its rail borne commodity that might lead to decreasing demand. One shipper was pessimistic, saying there is too little competition in the rail industry.

I.4.2 Short Line or Small Railroad Shipper Comments

Rail shipper and receivers located on short line railroads also were interviewed by telephone. For the most part, interview questions were the same as for the Class I shippers. In all, responses from nine shippers on four different short lines in different parts of the state were obtained. Eight shippers were identified by their serving short line as potential interview candidates. One shipper was identified by DOTD.

- Why do you use rail service for your freight movements as opposed to other modes?
 - A variety of reasons were provided, but many responses mentioned the same items: Safety (hazardous materials or hazmat transport); reliable, faster and more connectivity (reach more customers) (some were comparisons with water, also not subject to low water); cost effectiveness for large volumes; and customer desires.
- “Do you have problems with your rail service? If so, please describe.”
 - Some responses reflected local problems and some system-wide. Paper barriers; reciprocal switch charges; poor track conditions; interchange problems (capacity and service); line abandonments; slow transit times; and running through highly populated areas (community complaints) were mentioned.
- “Are there any state regulations impacting your freight movements or rail service? What changes would you suggest?”
 - The unanimous answer was no impact or not aware of any.
- “If you do not have 286,000-pound carload weight capacity on your line, would the capability help you? If so, would it increase your rail use?”
 - Respondents split almost evenly between those with and those without the capability, although most need it. Two stated they did not need it, and one stated it was not a major issue.
- “Should the state have a rail retention and infrastructure improvement program?”
 - The response was a unanimous “Yes!” Some comments follow: all states should have such a program; a lot of rail lines are in poor shape; shippers need to assure rail options exist; and, yes, the state should have such a program as long as all applicants are treated fairly. There should be more investment sharing, more public-private partnerships, for example. Another suggested that the state should aggressively pursue implementing the program to help short line shippers.
- “Are there other means in which the public sector might assist you increase your use of rail service?”
 - Two respondents answered no, but most other responses were in the same vein: help with railroad accountability; assist with or mediate disputes (between railroads as well as between railroads and shippers); provide a platform for problem discussions; and, act as an arbitrator, not a regulator. One shipper suggested the state could help with a reroute of the serving carrier’s line outside of highly populated areas.
- “Are you optimistic, neutral or pessimistic about the future of your rail freight volume, and why?”

- Most were optimistic. However, one was cautiously so, another was neutral, and a third was pessimistic. Some responses appeared to reflect anticipated business levels, others the level of satisfaction with existing rail service.

I.5 Freight Rail Advisory Council Meetings

The State Rail Plan effort was conducted as part of the effort to update the Louisiana Statewide Transportation Plan. For the latter plan, three Freight Rail Advisory Council meetings were held, one in March 2013, another in October 2013, and a third in January 2014. Over the course of the first two meetings, the committee developed the following recommendations. These were:

- Conduct freight rail economic impact analysis for Louisiana; assess need for federal funding for the state's railroads in order to:
 - Educate the state congressional delegation and state legislators
 - Coordinate with LED
- Help railroads secure federal grant and loan assistance.
- Provide state funding for rail infrastructure improvements.
- Fund DOTD's highway/rail grade separation program.
- Add two program managers to the DOTD Rail Program.
- Research incentive program for closures of public and private grade crossings. Funding for study: \$150,000.
- Provide state funding sources for the New Orleans Rail Gateway project.
- Continue funding for active warning devices at highway/rail crossings.

At the third meeting, the council members offered comment on the draft rail vision for Louisiana, its supporting service objectives, recommendations and next steps.

I.6 Outreach to Passenger Rail Interests

I.6.1 Amtrak

The National Railroad Passenger Corporation, doing business as Amtrak, provides serves Louisiana with three trains: the *City of New Orleans*, between Chicago and New Orleans; the *Crescent* between New York and New Orleans; and the *Sunset Limited* between Los Angeles and New Orleans. Both the *City of New Orleans* and the *Crescent* have daily service, while the *Sunset Limited* operates thrice weekly.

Todd Stennis, Amtrak's Director of Government Affairs, South, based in New Orleans, related that Amtrak has no plans for any major changes with regard to its existing services in Louisiana.

Until 2005, the *Sunset Limited* operated a transcontinental service, with an eastern terminus in Jacksonville, FL. However, service east of New Orleans has been suspended since 2005 as a result of the damage caused by Hurricane Katrina. While plans have been worked out for its potential restoration, none of these is being progressed at this time.

Amtrak and the Texas Department of Transportation are conducting a study, sponsored by the East Texas Corridor Council, pertaining to potential intercity service between Shreveport and Dallas/Fort Worth.

1.6.2 Southern Rail Commission

The Southern Rail Commission (SRC) serves the states of Alabama, Louisiana and Mississippi in promoting passenger rail transportation on a regional basis. Membership consists of the Governor of each member-state, a representative from each state's Department of Transportation, and five citizen-members appointed by the Governor of each state. Until 2011, the organization was known as the Southern High-Speed Rail Commission. The SRC's website is www.southernhsr.org.

Chris Miller, Administrator for the Southern Rail Commission and based in Mobile, AL, said that the agency's major efforts currently pertain to maintaining advocacy for passenger rail transportation in the Gulf Coast Corridor, and keeping members informed of passenger rail issues in the South.

The major initiative of the SRC has been the establishment of the Gulf Coast Corridor between Atlanta, Birmingham, Meridian, and New Orleans. From New Orleans, the corridor would stretch east to Mobile and west to Baton Rouge and Houston. Major segments of the corridor have been studied, with needs identified to support new passenger rail service. At the present time, however, none of the improvements is being implemented for lack of a secured funding source.

1.6.3 National Association of Rail Passengers

The mission of the National Association of Railroad Passengers (NARP) is to work for a modern, customer-focused national passenger train network that provides a travel choice that Americans want.

A non-profit organization, NARP is the largest national membership advocacy organization for train and rail transit passengers. Established in 1967, NARP has worked to expand the quality and quantity of passenger rail service in the United States. NARP has approximately 20,000 individual members. Its website is www.narprail.org.

Speaking on behalf of NARP, Bill Tucson, of LaPlace, identified several rail passenger concepts that have generated NARP's membership's interest in Louisiana. These included:

- Baton Rouge – New Orleans commuter rail
- Baton Rouge – Houston intercity service
- Baton Rouge – Shreveport intercity service
- New Orleans – Mobile – Birmingham – Nashville – Cincinnati intercity service
- Shreveport/Bossier City – Dallas intercity service
- New Orleans – Jacksonville intercity service (restoration of the eastern leg of the *Sunset Limited*)

Most of these service concepts, or elements of them, have either been studied in the recent past or will be studied in the near future. A stumbling block for implementation of all of them is the lack of a funding source for implementation and ongoing operations.

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Appendix J.

Documents and Sources for the Louisiana State Rail Plan

J.1 Introduction

This appendix is a compilation of the major documents and sources consulted in the production of the Louisiana State Rail Plan. Items are listed by the major rail plans elements wherein they were used.

J.2 Stakeholder Outreach Effort

- Interviews with short line and Class I railroad shippers.
- Surveys and comment cards completed at or mailed in after public meetings.
- Outreach to freight rail interests: railroads, Louisiana Railroad Association, and shippers.
- Outreach to passenger rail interests: Amtrak, Southern Rail Commission, and National Association of Rail Passengers (NARP).

J.3 Freight Rail Elements

- 2011 – R-1 Annual Reports to the Surface Transportation Board – Form 702 Miles of Road at Close of Year, by States.
- Railroad, Federal Railroad Administration (FRA), Surface Transportation Board (STB), and various rail industry and related websites, including the Association of American Railroads (AAR) and American Short Line and Regional Railroad Association (ASLRA); Louisiana water port websites; various maps and aerials including Google Earth and the Professional Railroad Atlas of North America; Railroad Infrastructure Services, 2004, p. 60.
- *National Rail Freight Infrastructure Capacity and Investment Study*, Association of American Railroads, 2007.
- *New Orleans Rail Gateway and Regional Rail Operational Analysis*, prepared for Louisiana Department of Transportation and Development by URS Corporation, 2002 S.P.NO. 737-26-0002, F.A.P.No.HP-TO21 (021).
- *New Orleans Rail Gateway Infrastructure Plan*, prepared by the Association of American Railroads, 2004.
- *New Orleans Rail Gateway Benefits Report*, prepared by Cambridge Systematics, 2008.
- *New Orleans Rail Gateway Infrastructure Feasibility Analysis*, prepared by Brown, Cunningham, Gannuch Engineering, 2007.

J.4 Passenger Rail Elements

- *Gulf Coast High Speed Rail Corridor Development Plan, Phase I, Improvement Implementation Plan - Meridian to New Orleans*, prepared by Burk-Kleinpeter, Inc., 2002
- *Louisiana Statewide Rail System Plan*, prepared by Wilbur Smith Associates, 2003.
- *Gulf Coast High-Speed Rail Corridor, New Orleans to Mobile Corridor Development Plan*, prepared by Burk-Kleinpeter, Inc., 2006.
- *Gulf Coast High-Speed Rail Corridor Plan, Lake Charles to Meridian Corridor Development Plan*, prepared by Burk-Kleinpeter, Inc., 2007.
- *Vision Plan for the Baton Rouge – New Orleans Intercity Passenger Rail*, prepared by the Louisiana Department of Transportation and Development, Intermodal Transportation Division, 2008.
- *A Report on Accessibility and Compliance with the Americans with Disabilities Act of 1990*, Amtrak, 2009.
- *Baton Rouge – New Orleans Intercity Passenger Rail Service Development Plan*, prepared by Burk-Kleinpeter, 2010.
- *Baton Rouge – New Orleans Intercity Rail Feasibility Study, Draft Capital and Operating Plan*, prepared by HNTB, 2013.
- *New Orleans Union Passenger Terminal Master Plan Update*, prepared by Manning Architects, 2007.
- *Infrastructure Investment Program for the New Orleans Union Passenger Terminal*, prepared by AECOM, 2010.
- Presentation by J. Kent Rodgers, Northwest Louisiana Council of Governments, on proposed Amtrak service between Shreveport and Dallas, July 2013. Presented to DOTD and the Regional Planning Advisory Council. Based on findings of an ongoing Amtrak study sponsored by the Texas Department of Transportation.
- *Dallas/Fort Worth to Shreveport - Bossier City High Speed Rail Project*, a presentation by the North East Texas Regional Mobility Authority to DOTD and the Regional Planning Advisory Council, 2013.
- Amtrak website and monthly performance reports, various.
- Amtrak System Timetable, various.
- *Mississippi Rail Plan*, prepared by Wilbur Smith Associates, 2011.

J.5 Rail Economic Impacts

- The TRANSEARCH® commodity movement database for 2009.
- IMPLAN commodity data for 2010.
- Louisiana TravelsAmerica, Visitor Profiles Report, prepared by TNS, 2008.

J.6 Rail Socio-environmental Impacts/Livability

- *Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I*, a report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research (CCSP Report).
- *Louisiana Speaks Regional Plan*, Louisiana Recovery Authority, 2007.
- *Surface Freight Transportation: A Comparison of the Costs of Road, Rail, and Waterways Freight Shipments That Are Not Passed on to Consumers*, GAO, January 2011; <http://www.gao.gov/new.items/d11134.pdf>

J.7 Project Funding and Evaluation Methodology

- *Louisiana Rail Program Financing Report*, prepared by HDR Inc., June, 2010.
- *Ohio State Rail Plan*, prepared by Wilbur Smith Associates, 2010 (source of evaluation methodology).
- *Draft Louisiana Rail Infrastructure Improvement Program Policies and Procedures*, prepared by the Louisiana Department of Transportation and Development, Marine & Rail Transportation Section, 2010.

J.8 Safety and Security Element

- FRA accident database.
- Strategic Rail Corridor Network (STRACNET).

J.9 State Rail Vision and Other Key Plan Elements

- 2008 – Public Law 110-432 regarding State Rail Plans.
- *State Rail Planning Best Practices*, prepared for the American Association of State Highway and Transportation Officials (AASHTO), prepared by Cambridge Systematics, 2009.
- *Kansas State Rail Plan*, prepared by Wilbur Smith Associates, 2011.
- *State Rail Plan Guidance*, prepared by FRA, 2012.