NEW ORLEANS

REGIONAL FREIGHT PROFILE 2020-2021

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Photos
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All crash data are exempt from discovery or admission under 23 U.S.C.409.

Please submit any comments or questions to the Regional Planning Commission at the web address above or contact Karen Parsons at kparsons@norpc.org.

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Photo: NORPC MTP

FREIGHT OVERVIEW

Purpose of the Freight Profile

Freight is a complex ecosystem. It is not just the pallet, container, liquid or bulk cargo but the vehicle, route, surface, public and private sector as well as information, regulation and technology that work together to move freight successfully, whether across town or across the globe. Through this document we aim to provide an overview of the many elements that make up the freight environment and to describe what makes the New Orleans region unique.

The purpose of the Freight Profile is to enlighten citizens and policy makers about how freight functions and broaden knowledge for freight stakeholders who may be unfamiliar with certain aspects, while highlighting the work of the Regional Planning Commission. We provide a snapshot of the New Orleans Region leading into 2020 prior to the global pandemic and highlight some of the ensuing changes in freight movement related to the pandemic.

The goal of this document is to capture the status of freight in the region today and use it to foster conversations and broaden community capacity to confront the future of freight together through the anticipated development of a regional Freight Mobility Plan.

This profile is designed to provide a balance between a grand overview of the freight industry and necessary detail to see and understand the nuance of operations in the New Orleans region. The profile draws on national, state and local agency data, agency website materials, current freight news articles, personal interviews and conversations with stakeholders. Here we will touch on the role of agencies that are engaged in the movement of freight, the role and impact of technology, regulation, security and safety, the development of alternative fuel, and highlight data collected that informs the RPC Transportation Policy Committee's decision-making.

The RPC has historically focused funding on planning and aiding projects that support the freight community and it will continue to do so. In 2021-2022, the RPC is creating the first Freight Mobility Plan to further the RPC Freight Program and to inform the four Metropolitan Long Range Plans that will be updated in 2022. The first task of the RPC Freight Mobility Plan is the Freight Profile which updates the inventory of geographical and modal elements that make up the freight system since the RPC released the Freight Facts and Figures profile in 2014.

The 2020-2021 Freight Profile highlights significant projects and policy changes since 2014 and also attempts to describe new concerns that freight stakeholders must negotiate in the region. These concerns are listed under the Challenges page at the end of sections detailing each mode of transportation. Challenges have been categorized according to Federal Freight Goals. The list of challenges were identified in past conversations with stakeholders and multiple sources in the course of this analysis, but are not necessarily fully described within the text. The list of challenges is meant to be an initial foray into problem identification that will be expanded during the formal Freight Mobility Plan process.

The Freight Profile is organized in three sections. The first section is a big picture overview defining the components of freight, including regional freight related jobs, institutional operators, regional commodities and where/how they travel, and an overview of the logistics industry. The second and largest portion of the document is divided by modal sections (truck, maritime, rail, aviation and pipeline) to provide enough depth of information about each major mode of transportation to establish the key freight stakeholders and the context with which they operate. Alternative fuel status and availability and the larger discussion on emissions impacts to local air quality and global warming is also included here because of the integral nature of fuel in the transport environment. Finally, the Freight Profile highlights long-term threats, including rapid changes in global trade, a general discussion of the potential impacts of climate change and the COVID-19 pandemic, which arose in January 2020 and upended normal business activities. The document concludes with next steps to move the New Orleans region toward a Freight Mobility Plan.

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About the Regional Planning Commission

The Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, St. Tammany and Tangipahoa Parishes represents four Metropolitan Planning Organizations (MPOs) (Figure 1). MPOs were created by the United States Congress in 1962 as regional transportation policy organizations that ensure federal dollars are spent within a continuing, cooperative, and comprehensive planning process. Per the 2010 census, there is one large urban area or Metropolitan Planning Area (MPA) greater than 200,000 in population (New Orleans parishes south of Lake Pontchartrain) and three small urban MPA's on the north shore of 50,000 or fewer in population (Slidell, Mandeville/Covington, and South Tangipahoa) - all of which are facilitated by the Regional Planning Commission staff. (Figure 2)

Regional Planning Commission's large meeting room Photo: RPC

Metropolitan Planning Areas encompass the existing urbanized area plus the contiguous area expected to become urbanized within a 20-year forecast period. The Transportation Policy Committee (TPC) of the Regional Planning Commission is the decision-making body regarding federal transportation funding that is allocated to the region. Working with the Louisiana Department of Transportation and Development (LADOTD) and other stakeholders, the Transportation Policy Committee selects projects and sets transportation priorities for the four MPOs. The RPC provides a platform for local governments, citizens and other partners to collaboratively address regional land use, transportation, economic and environmental issues.

There is one RPC Transportation Policy Committee which is composed of 52 members: three top local elected officials and two citizen members from each of the eight member parishes and the Mayors of Hammond, Covington, Mandeville and Slidell. In addtion, modal representatives sit on the board. They include the Secretary of the LADOTD, the Port of New Orleans for maritime, the New Orleans Public Belt Railroad for rail, the Louisiana Motor Transport Association for truck, the New Orleans Louis Armstrong International Airport for aviation, the Greater New Orleans Expressway Commission for the Causeway bridge, and the Regional Transit Authority and Jefferson Parish Transit for bus.

The Commission is supported by a staff of professionals with a diverse range of expertise in urban planning, transportation, land use, economic development, and environmental planning. Staff also include experts in data management, analysis, and geographic information systems (GIS). Transportation funding allocated to the region is fiscally constrained meaning the staff evaluate the need for and feasibility of projects. The TPC must vote to approve how funds are ultimately expended within a budget.

Figure 1. Regional Planning Commission 8-parish region

Figure 2. Four Metropolitan Planning Areas of the New Orleans Metropolitan Planning Organization

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The Regional Planning Commission's Role in Freight

The Regional Planning Commission Freight Program's goal is to ensure that regional freight moves in a secure environment and interfaces safely and efficiently with all other motorized and non-motorized traffic. The agency needs to be responsive to the movement of goods at a local and regional scale, while understanding national and global influences and needs. The RPC's Freight Program works to facilitate communication with modal stakeholders by hosting a quarterly regional Freight Roundtable to foster collaborative decision making for multi-modal planning.

New Orleans Regional Planning Commission Map Room

RPC staff track various data sets and create maps and charts that illustrate the data. They monitor highway performance and travel time, analyze crash information, and work to support freight transportation through multiple efforts in travel demand modeling, brownfields remediation, economic development, emergency preparedness, alternative fuel development and intelligent transportation systems planning.

As an agency the RPC role is to influence policy, facilitate conversation among stakeholders and help to plan for a regional long-term and resilient future using the tools and funding controlled by the TPC. It ultimately strives to identify regional needs and trends, work across modes and maximize the capabilities and capacity of the agency's resources to solve freight related problems.

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Federal Freight Requirements

Priorities of the United States Department of Transportation (USDOT) focus on safety, innovation and infrastructure. The Office of the Secretary oversees the following operating administrations connected to freight: National Highway Traffic Safety Administration (NHTSA), the Federal Aviation Administration (FAA), the Federal Highway Administration (FHWA), Pipeline and Hazardous Materials Safety Administration (PHMSA), the Federal Motor Carrier Safety Administration (FMCSA), the Federal Railroad Administration (FRA), and the Maritime Administration (MARAD).[1] Each agency, except MARAD, is directed by the FAST Act, the nation's Federal transportation legislation, although part of MARAD's mission is to ensure seamless integration with other modes of transportation.

In 2012, the U.S. Congress passed the Moving Ahead for Progress in the 21st Century Act (MAP-21), which encouraged State departments of transportation to develop freight transportation plans for the first time. In 2015, Congress passed the successor bill, Fixing America's Surface Transportation Act (Fast Act), which included several provisions to improve the condition and performance of the national freight network and to support investment in freight-related surface transportation projects.[2] The FAST ACT established new dedicated funding and programs to address growing freight needs and improve road and bridge conditions, reliability, and the U.S. economy.

Metropolitan Planning Organizations are not required under the FAST ACT to develop a regional Freight Mobility Plan. However, because the New Orleans Region is strategically located at the base of the Mississippi River representing the most complex freight hub in Louisiana, it is a significant player in the United States freight economy. A regional Freight Mobility Plan will undoubtedly benefit our region and State.

The development of such a plan will ensure the continued support of overarching regional goals, guide short- and long-term projects and plans, and contribute to statewide multi-modal freight planning.

US Department of Transportation Office in Washington DC
Photo: USDOT

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Federal Freight Goals

THE FAST ACT

The Fast ACT established performance metrics to achieve national goals focused on economic vitality, improving the national freight network performance, enhancing rural communities' access to national and international trade markets, and supporting regional economic development. The bill included provisions for highway-oriented freight as well as multi-modal freight policy and planning. It directed that a national freight strategic plan be created and a multi-modal network including a national highway freight network be designated.[3] State DOT's were directed to create freight mobility plans. Goals of the national policy reiterated in the State plan include[4]:

ECONOMIC EFFICIENCY – Improve the economic efficiency of the national freight network

ENVIRONMENTAL – Reduce the environmental impacts of freight movement on the national freight network

ECONOMIC COMPETITIVENESS – Invest in infrastructure improvements and implement operational improvements that strengthen the contribution of the national freight network to the economic competitiveness of the U.S.; reduce congestion; and increase productivity, particularly for domestic industries and businesses that create high-value jobs

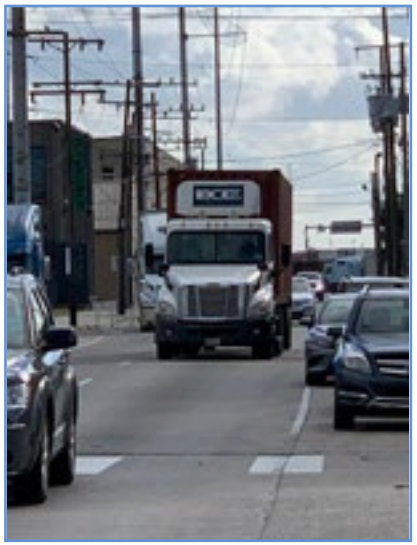
STATE OF GOOD REPAIR – Improve the state of good repair of the national freight network

SAFETY AND SECURITY – Ensure the safety and security of freight transportation

ADVANCED TECHNOLOGY – Use advanced technology to improve the safety and efficiency of the national freight network

PERFORMANCE AND ACCOUNTABILITY – Incorporate concepts of performance, innovation, competition, and accountability into the operation and maintenance of the national freight network

Photo: Stock



Truck traffic on Tchoupitoulas Street, intermodal connector to Port NOLA

LOUISIANA STATE FREIGHT MOBILITY PLAN

The Regional Planning Commission operates in partnership with the Louisiana Department of Transportation and Development to collaborate on regional needs and solutions to improve freight and goods movement. The LADOTD develops a Freight Mobility Plan every 5 years with the most recent one released in February 2018. This plan is federally required and establishes State goals and performance metrics to develop policies, investments and programs to better understand and mitigate the risks of freight transportation, to improve environmental quality and safety for all Louisiana transportation users, and to improve the economic vitality of Louisiana.

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What is Freight?

Freight is the movement of commodities including, raw materials, perishable and non-perishable goods, and/or finished products. The flow of freight is an integral part of the economy in Southern Louisiana. Freight shipments vary based on who is shipping, the type of cargo, and the mode(s) of transport (ship, truck, railcar, plane, pipeline).

HELPFUL FREIGHT TERMINOLOGY

Break Bulk Cargo: Loose, non-containerized cargo.

Bulk Cargo: Not in packages or containers; shipped loose in the hold of a ship without mark and count. Grain, coal, and sulfur are usually bulk freight.

Clearance Limits: The size beyond which cars or loads cannot use bridges, tunnels, and other infrastructure.

Container: A truck trailer body that can be detached from the chassis for loading into a vessel, a rail car or stacked in a container depot. Containers may be ventilated, insulated, refrigerated, flat rack, vehicle rack, open top, bulk liquid or equipped with interior devices. A container may be 20 feet, 40 feet, 45 feet, 48 feet, or 53 feet in length, 8 feet or 8'6" in width, and 8'6" or 9'6" in height.

Crossdock services: Involve unloading products/goods from a truck or container directly onto another truck for delivery with little to no storage.

Customs: Government agency charged with enforcing the rules passed to protect the country's import and export revenues.

Customshouse Broker: A person or firm, licensed by the treasury department of the country when required, engaged in entering and clearing goods through Customs for a client (importer).

Demurrage: A penalty charge against shippers or consignees for delaying the carrier's equipment beyond the allowed storage time.

Dock: For ships, a cargo handling area parallel to the shoreline where a vessel normally ties up. For land transportation, a loading or unloading platform at an industrial location or carrier terminal.

Draft: The number of feet that the hull of a ship is beneath the surface of the water.

Drayage: Charge made for local hauling by dray or truck to transport goods short distances between major rail, air, or ocean carriers to a destination or intermediate destination.

Facility Owners/Operators: Own, operate, and/or maintain the infrastructure used by operators/carriers to move goods.

Fourth Party Logistics Provider (4PL): Add additional supply chain capabilities, including consulting services and technology/communications provider.

Freight Broker: An intermediary between a shipper who has goods to transport and a carrier who has capacity to move that freight.

Intermodal: Used to denote movements of cargo containers interchangeably between transport modes, i.e., truck, rail, water, and air carriers, and where the equipment is compatible within the multiple systems.

Intermodal Connectors: Last mile highway connections to maritime, air, rail terminals that interchange freight.

K-Ton: thousand tons-unit of measure for weight (used by FAF).

Line-Haul: Transportation from one city to another as differentiated from local switching service.

NTAD: National Transportation Atlas Database: Bureau of Transportation Statistics compilation of geospatial datasets for the nation.

Operators/Carriers: Transport goods from the shipper to the receiver.

Port of Entry: Port where cargo is unloaded and enters a country.

Receivers: Destination or interim destination for freight/goods.

Reefer: A refrigerated container.

Shippers: Origin of freight/goods.

Ton-Mile: The movement of a ton of freight one mile.

Tariff: A publication setting forth the charges, rates and rules of transportation companies.

Tender: The offer of goods for transportation or the offer to place cars or containers for loading or unloading.

Third Party Logistics Provider (3PL): Specialists in logistics that provide a variety of transportation, warehousing and logistical services to buyers or sellers.

Transload: Transfers bulk cargo (vehicles or containers) between modes while en route from a shipper to receiver and the product is often palletized at the transload facility.

Waybill: A document prepared by a transportation line at the point of a shipment; shows the point of the origin, destination, route, consignor, consignee, description of shipment and amount charged for the transportation service.

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Abbreviations

AFDC - U.S. Department of Energy Alternative Fuels Data Center
AHP - Above Head of Passes
AMO - Air and Marine Operations
AOR – Area of Responsibility
BHP - Below head of Passes
BTS -U.S. Bureau of Transportation Statistics
CARTS- Center for Analytics and Research in Transportation Database
CBP - US Customs Border Protection
CEDS - Comprehensive Economic Development Strategy
CFS - Commodity Flow Survey
CG - US Coast Guard
Clean TRIP - Clean Truck Replacement Incentive Program
CMAQ - Congestion Mitigation Air Quality
CMV - Commercial Motor Vehicle
CORP - US Army Corp of Engineers
COVID 19 - Coronavirus Disease
CRFCs - Critical Rural Freight Corridors
CUFCs - Critical Urban Freight Corridors
CVED - Commercial Vehicle Enforcement Divison
CVSA - Commercial Vehicle Safety Alliance
DERA- Diesel Emissions Reduction Act
DHS - U.S. Department of Homeland Security
DNR - Louisiana Department of Natural Resources
ELD - Electric Logging Device
EMSI - Company specializing in economic modeling software
ENOA - Estimated Notice of Arrival
EPA - U.S. Environmental Protection Agency
eRODS - Electronic Record of Duty Systems
FAF - Freight Analysis Framework
Fast Act - Fixing America's Surface Transportation Act
FERC -Federal Energy Regulatory Commission
FHWA - Federal Highway Administration
FMCSA - Federal Motor Carrier Safety Administration
FRA - Federal Railroad Administration
GHG - Greenhouse Gas Emissions
GICA - Gulf Intracoastal Canal Association
GIWW - Gulf Intracoastal Waterway
GPS - Geographic Positioning System
GOHSEP - State of Louisiana Office of Homeland Security and Emergency Preparedness
GNOEC - Greater New Orleans Expressway Commission
HOS - Drivers Hours of Service
HSIP Highway Safety Improvement Program
HMTF - Harbor Maintenance Trust Fund
IHNC - Inner Harbor Navigational Canal
IHS - Interstate Highway System
IMO -International Maritime Organization
Interstate LOTTR - Interstate Level of Travel Time Reliability
IoT - Internet of Things
K-Tons - Thousands of Tons
LADOTD - Louisiana Department of Transportation & Development
LASHPO - Louisiana State Historic Preservation Office
LDEQ -Louisiana Department of Environmental Quality
LNG - Liquid Natural Gas
LSP - Louisiana State Police
M - Millions
MAP - Motorist Assistance Patrol
MAP-21 - Moving Ahead for Progress in the 21st Century Act
MARAD - Maritime Administration
MCSU - Motor Carrier Safety Unit
MPA - Metropolitan Planning Area
MPO - Metropolitan Planning Organization
MRGO - Mississippi River Gulf Outlet
MTP - Metropolitan Transportation Plan or Long-Range Plan
NBI - National Bridge Inventory
NHFS - National Highway Freight System
NPMRDS- National Performance Management Research Dataset
NHS - National Highway System
NOAA - National Oceanic and Atmospheric Administration
NWS - National Weather Service
OPA - Owner Protective Agent
PDO - Property Damage Only
PHFS - Primary Highway Freight System
PPP (3Ps) - Private Public Partnership
PSR - Precision Scheduled Railroading
PTC - Positive Train Control
RHS - Regional Highway System
RPC - Regional Planning Commission
SCM - Supply Chain Management
SELA - Southeast Louisiana Urban Flood Damage Reduction Project
SHS -Statewide Highway System
SHSP - Strategic Highway Safety Plan
SLCFP - Southeast Louisiana Clean Fuel Partnership
STB - Surface Transportation Board
STRACNET - Strategic Rail Corridor Network
TEU - Twenty Foot Equivalent Unit
Truck TTRI - Truck Travel Time Reliability Index
TSE - Truck Stop Electrification
ULCVs - Ultra Large Container Vessels
USACE - US Army Corps of Engineers
USDOE - U.S. Department of Energy
USDOT - The United States Department of Transportation
USGS - U.S. Geological Survey
V2V - Vehicle to Vehicle
VHT - Vehicle Hours Traveled
VMT - Vehicle Miles Traveled

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Introduction to Freight in the Region

The watershed that drains to the New Orleans region is the area of land between the Appalachian Mountains and the Rockies. The City of New Orleans is 100 river miles from the Gulf of Mexico on the largest U.S. waterway, the Mississippi River. It has given rise to an abundance of freight transportation that accumulate exports from across Louisiana and the American hinterland and accepts globally sourced imports for further distribution.

New Orleans' relationship with the Mississippi River is both as a beneficiary from the wealth and abundance of river transportation and as a victim of growing threats from more frequent high river levels, storm surges, and more intense hurricanes that have physical and economic impacts. All are suspected outcomes of worldwide climate change.[5]

Coastal land lost to rising ocean levels and blockage of the natural distribution of sediment by human intervention through construction of dams and the levee system is changing the land around the lower Mississippi River, which affects how business is done on it. In the years since Hurricane Katrina, disaster preparedness has become a major undertaking by local, State and national government, reflecting the growing threat of intense storms.

The New Orleans region is a robust activity center for freight. Louisiana has an active offshore petroleum industry served by over 20 heliports and vast, complex networks of pipeline. On shore chemical plants have access to pipeline, vessel, rail and truck services.

Detailed map of the Mississippi River tributary structure Image: Shannon1 Wikipedia

Due to its location on the lower Mississippi River, the region moves grain, coal, crude oil and other bulk products through five ports. The New Orleans region is home to the largest tonnage port in the nation, the Port of South Louisiana, and the largest container port in Louisiana, Port NOLA. There is significant barge and tow traffic, as well as foreign flag vessels, six Class I railroads and two Class III railroads. The National Highway System serves all the major modal terminals, warehouses and local businesses and the air freight market based out of the Louis Armstrong New Orleans International Airport.

Many agencies work together to provide for the safe movement of freight and the security of citizens that could be endangered by the import of dangerous goods. The work of the Customs Border Protection agency (CBP) ensures all freight entering the U.S. does not pose a threat. The CBP work has grown in importance as world tensions rise and more care is needed to check for illicit radiation, goods and pests. The Army Corps of Engineers and local flood authorities control and abate flood waters, a significant risk to freight movement. Safety on the waterways and the many vessels and facilities that serve the waterways is the job of the Coast Guard. State and local police enforce roadway regulations and laws.

Technology is embraced across the modes. Tech advances have enabled more data collection, rapid data exchange, improved communication and systems analysis that leads to collaboration on strategic changes within and across modes. All of these elements contribute to the dynamic freight environment in the New Orleans region.

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Infrastructure Advancements in the Region

In 2014, The Regional Planning Commission produced, "Freight Facts & Figures: An Overview of the New Orleans Regional Freight Transportation System", which provided the first basic overview of regional freight for Greater New Orleans. Since that publication, a number of significant projects were constructed and changes occurred in local operations and decision-making that respond and reflect global freight changes in advanced efficiencies, increased national security measures across borders and modes, and regional adjustments intended to keep up with the pace of technological change. The following sections summarize freight supportive planning and projects that are underway or have been completed since 2014.

TRUCKING

-Final design for the last of three phases of I-12 widening between LA 1077 and LA 59 in St. Tammany Parish was completed in November 2020 in an expedited process. The project widens 4 lanes to 6 lanes over 9 miles and rebuilds 4 bridges at an estimated cost of $138 million. Construction is underway.

-Widening of Interstate 10 is complete in Jefferson Parish, except for one section between Williams Boulevard and Veterans Boulevard.

-LADOTD installed ramp metering technology on seven ramps merging into US90B near the CBD to improve traffic flow on US90B and I-10, which improve last mile movements to and from the Port of New Orleans (Port NOLA). Meters are remotely controlled by the the DOTD District Traffic Section through a fiber optic network connected to the Regional Traffic Management Center.

-The Port of St. Bernard is working on an improved roadway entrance at LA 46 and Weinberger Rd. This modification will support expansion within the port site and improve port access.

-RPC staff and DOTD are conducting an Environmental Assessment to extend West 10th Street to a new interchange at I-10 in St. John the Baptist Parish to improve commercial truck access for industries operating at the Port of South Louisiana. In addition, RPC completed an Environmental Assessment for the widening of US 51 in LaPlace.

MARITIME

-Four 100 foot gauge container gantry cranes have been purchased for installation in spring 2022 at the Napoleon Avenue Container Terminal wharf C as part of a $100 million expansion at Port NOLA. These will service 8,000 to 9,500 TEU ships. Major improvements to the wharf substructure piles, fendering system and electrical are also being completed to bring the total capacity to 1 million TEU's.

-Port NOLA completed a strategic plan and will open a new satellite terminal in St. Bernard Parish in 2027 where mega size vessels can be accommodated, downriver of the air draft restricted Crescent City Connection (US90B) bridge, to meet the global transition to larger vessels.

-In early 2018, the City of New Orleans and Port NOLA created a mutually beneficial exchange. The city, which owned the New Orleans Public Belt Railroad since its establishment in 1904, agreed to trade that property in exchange for two Port NOLA-owned wharves located just downriver of the city's riverfront park.[6] The intention is to improve integration of maritime and rail assets that are key to a more effective and lucrative freight operation.

-The Inner Harbor Navigational Canal (IHNC) is a critical passageway for the freight industry traveling along the Gulf Inner Coastal Waterway (GIWW) but the closure of the Mississippi River Gulf Outlet in 2012 and the associated challenges of the 100 year old IHNC lock, linking vessel traffic to the Mississippi River, led to a subsequent decline in industry along the shores of the IHNC. To date, the U.S. Army Corps of Engineers (USACE) is still conducting an updated Environmental Impact Statement (EIS) regarding the replacement of the lock. As this study continues, the RPC partnered with Port NOLA and the Environmental Protection Agency (EPA) to conduct area-wide Brownfields environmental assessments of Port NOLA and privately owned properties along the IHNC. The intent is to help bring more vacant and underutilized property back into commerce.[7]

-The Ports of Baton Rouge and New Orleans were awarded Maritime Administration funding on behalf of Seacor AMH to start a Container-On-Barge service between Memphis and New Orleans in 2016. Empty forty-foot containers are barged to Baton Rouge, filled with plastic resin, then barged to Port NOLA for export. An additional $3.2

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Infrastructure Advancements in the Region

million was awarded in 2019 to continue the service. The America Marine Highway Program promotes the use of domestic waterways and ports to reduce emissions, highway congestion and roadway damage.[8]

RAILROAD

-The Canadian National (CN) Railroad has invested $80 million dollars in replacing the wooden rail bridge over the Bonnet Carre' Spillway with a durable precast concrete bridge. This represents one of the largest private transportation infrastructure investments in the region. The new structure will allow normal railroad operations during spillway openings. The CN route carries mainly grain and coal trains along with a daily roundtrip Amtrak train (the City of New Orleans) to Chicago.[9]

AIR

-The Louis Armstrong New Orleans International Airport opened a modern terminal north of the existing runways in November 2019. The new facility was built to match steady growth in passenger air traffic. Commercial air cargo is carried in the cargo hold of passenger planes and in dedicated air freight flights operating from the south terminal area where commercial air freight operations are located. It is a small but important component of regional freight volumes. In addition, the new terminal supports business interactions around freight. Currently, the RPC is working with the LADOTD and Jefferson Parish to build a new I-10 Interchange that will allow freight and vehicular traffic direct and speedy access to the new international terminal.

PIPELINE

-The rise of low-cost natural gas has prompted the Port of Plaquemines to embark upon land acquisition and attraction of a major liquefied natural gas (LNG) terminal. Of all the regional ports the Port of Plaquemines is closest to the Gulf of Mexico, and the proximity enhances business opportunities. In May 2019, Venture Global announced a proposal to build an interstate natural gas pipeline and terminal at the Port of Plaquemines on a 524-acre site for LNG export. The Plaquemines terminal site would include pretreatment facilities, a liquefaction plant, above ground full-containment LNG storage tanks, electric power generation facilities and three LNG carrier loading docks within a common LNG carrier berthing area. The project is currently in the environmental review stage regulated by the Federal Energy Regulatory Commission (FERC).

Total reconstruction of CN rail bridge across the Bonnet Carre' Spillway underway (May 2020) Photo: Canadian National Railroad

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Making Connections - Big Data

DATA

Today, technology allows large quantities of data to be captured and analyzed (big data), which contributes valuable information for every aspect of the freight industry. Transportation planners and businesses can now use cell phones or on-board tracking devices that collect geolocation data to better understand delay, speed, and commercial vehicle origins/destinations on freight roadways across the nation. On-board equipment tracks vessel and train location. Data informs travel reliability and helps set performance measures for infrastructure, allowing for continued assessment and improvement of the roadway network. It helps government work with and better utilize crash frequency and severity data, and understand why incidents occur to fix traffic related problems that impact freight movements. Background data informs security about international crews entering the U.S. and helps track the source of illicit goods.

Image: U.S. DOT

The use of big data helps regulate, stabilize and manage freight. The Bureau of Transportation Statistics track all U.S. commodities. This includes region to region as well as exports and imports to the country. The availability and rapidity of data are the basis of supply chain logistics to allow real time decision-making for flights, maritime shipping, rail and truck movements. In the private sector, data is used to estimate employment needs, anticipate and plan for vehicle maintenance, and to evaluate business performance to reduce costs and improve profitability.

The widespread collection and availability of data is the basis for load matching on truck job boards and the recent establishment of trading of trucking freight futures.[13]

The diverse application of big data is growing across all modes. Big data allows tracking of all freight more efficiently in today's global market, while improving safety, security and commerce.

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Making Connections - Managing the Supply Chain

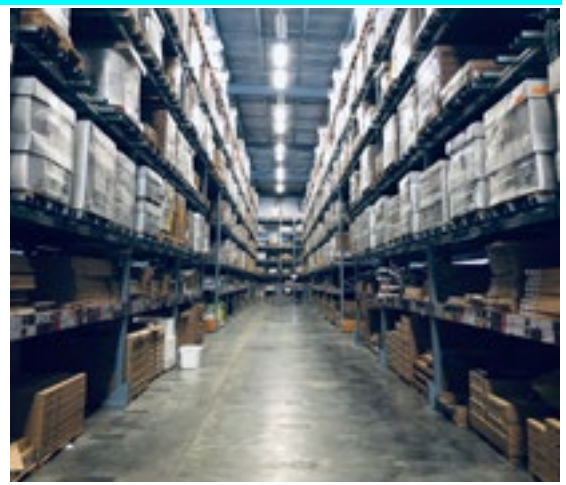
SUPPLY CHAIN MANAGEMENT

Supply Chain Management (SCM) professionals are essential personnel for all the steps of the supply chain process that may involve manufacturers, warehousing, retailers, transportation companies, third party logistics firms, government agencies and transportation service firms.[10] SCM's determine the best route and mode to carry goods. Overall, third party logistics is about managing the regulatory, logistics and compliance processes while meeting carrier deadlines and taking care of all documentation and coordination.

Container ship on the lower Mississippi River

There are two operating terms for international freight cargo: freight forwarding and customs brokerage. Freight forwarding works to export shipments and customs brokerage represents the import environment for cargo entering the United States. Imports require a greater magnitude of safety reviews, documentation and payment details than exports. Both imports and exports are filed electronically via a Customs Border Protection (CBP) agency hosted portal called the Automated Commercial Environment (ACE). This system acts as a single window for transmission of CBP required data as well as data for other government agencies with a regulatory role in freight like the U.S. Coast Guard (CG), U.S. Food and Drug Administration (FDA), the U.S. Fish and Wildlife Service (FWS) and the Environmental Protection Agency (EPA).[11]

Consumer behavior is extremely important to the flow of freight and is rapidly changing with emerging technology and emergency situations forcing all aspects of the freight industry to carefully track data and be able to respond quickly. The outbreak of the coronavirus in early 2020 created instant change in demand across all modes that is reflected in the freight data, as well as adjustments in the work of supply chain managers to accommodate the change in demand.



Warehouse Photo: Ruchindra-Gunasekara

Third party logistics agents in the New Orleans region include vessel agents which specifically support marine freight. Their role is to represent ship owners as the owner protective agent (OPA). Tasks include lining up all aspects of the vessel logistics so multi-agency work-flows are integrated and costly delays are not incurred. They sell space on a ship, book the cargo and supervise/assume responsibility for loading and discharge of the ships. Vessel agents are responsible for notifying the port of the ship arrival time so a berth is available. They set up tug docking and undocking, stevedoring (labor to load and unload vessels) and vessel cleaning so it is ready for the next load. Vessel agents are in charge of ordering a ship pilot to accompany a vessel and to notify them three hours in advance of the estimated rendezvous time on the Mississippi River.[12]

FREIGHT OVERVIEW

Making Connections - Institutional Relationships

FREIGHT INSTITUTIONS

Many instutitons play a part in freight transportation including the private sector, public sector and non-profit groups. A list of many of the main stakeholders can be found in Appendix A.

EMERGENCY PREPAREDNESS PUBLIC-PRIVATE PARTNERSHIP (PPP)

Each day millions of dollars and thousands of tons of freight move through the New Orleans region. Ensuring that the movement of these goods, in the face of an emergency event, whether a hurricane, terrorist incident or infrastructure failure, is important not only for the region's wellbeing, but also for national and international interests. The Regional Planning Commission has increased its focus on emergency preparedness in the last 15 years through all transportation sectors and works collaboratively with private and public stakeholders on continued resilience efforts.

The Emergency Preparedness Public-Private Partnership (PPP) was created at the RPC to leverage public and private sector resources to support emergency management in Southeast Louisiana and South Mississippi, while streamlining the flow of accurate information between the public and private sectors. This group shares best practices and lessons learned, while encouraging organizations and businesses to build resilience into their continuity plans. Participants include: emergency managers, Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), LA State Police, energy and communications sectors, transportation agencies including ports, roads and bridges, medical/health agencies, Federal Executive Board, National Weather Service, the Army Corps of Engineers, universities, professional trade associations including homebuilders, retailers, and grocery store chains, LA Mid-Continent Oil & Gas Association, Red Cross, chambers of commerce, economic development organizations, convention centers/sports arenas, local police and fire departments, and faith-based organizations.

New Orleans Emergency Services at work Photo: EMS World

Construction of improved access roadway for the Louis Armstrong New Orleans International Airport Photo: LADOTD

HOW RPC WORKS WITH LADOTD

The Regional Planning Commission works hand in hand with the Louisiana Department of Transportation and Development. Projects which the LADOTD undertakes within the region must be vetted and approved by the RPC Transportation Policy Committee. MPO Planning studies or projects that use federal transportation funds require a local matching share (usually 20%) and must be approved by the LADOTD. Both bodies adhere to Federal guidance issued by the Federal Highway Administration following transportation laws passed by Congress. This institutional relationship ensures constant communication and works to balance the needs and priorities of the urbanized area with statewide priorities.

FREIGHT OVERVIEW

Making Connections - Intermodal Connectors

INTERMODAL CONNECTORS

Intermodal connectors are relatively short, public roadways to connect major intermodal facilities to the National Highway System or the highway network, often referred to as "the last mile." Intermodal facilities are places to transfer goods from one mode of transportation to another such as a private rail yard or maritime dock. They are designated by the Federal Highway Administration (FHWA) in cooperation with State departments of transportation and Metropolitan Planning Organizations based on criteria developed by the U.S. Department of Transportation. The primary criteria for a designated freight intermodal connector is based on annual freight truck volumes on one or more principal routes that serve the intermodal facility.[14] The site must serve at least 100 trucks in each direction daily. Their relevance to the state economy is also a significant factor for a designation. The New Orleans 8-parish region has seven designated freight intermodal connectors and one that will be reassessed due to closure of the truck/rail intermodal yard (CSX) in 2017. Each are eligible for state NHS funding. (Table 1)

There are also two undesignated intermodal connectors that meet federal criteria (routes to the Norfolk Southern Railway and Union Pacific Railroad yards) but are connected by non-state roads. These roads are technically eligible for NHS funding but are more likely to be funded via the MPO's STP >200K program. The LADOTD programs all NHS funds. (The BNSF intermodal yard stopped intermodal moves in 2019.) (Figure 3)

Facility	Facility Type	Connector Description	Length (Miles)
Canadian National CN	Truck/Rail	same connector as Port of New Orleans -- Mississippi River Terminal (LA19P)	0
CSX	Truck/Rail	Alvar St, Almonaster Ave, and Jourdan Rd	1
Kansas City Southern KCS	Truck/Rail	Labarre Rd. (Terminal to US 61)	0.1
Port of New Orleans - France Road	Port Terminal	Served by an existing National Highway System route	0
Port of New Orleans - Jourdan Road	Port Terminal	Jourdan Rd. (Terminal to Almonaster Rd.)	0.8
Port of New Orleans - Mississippi River	Port Terminal	Felicity St (Terminal to Religious St), Religious St (Felicity to Euterpe), Tchoupitoulas St (Felecity to US 90)	1.4
New Orleans International Airport NOIA	Truck/Air	Crofton Rd. (Entrance to US 61)	0.5

Table 1. Designated New Orleans Intermodal Connectors Source: FHWA

ROADWAY CONSTRUCTION

Truck weight is a significant factor in the design of roadways. The Interstate system must be capable of handling all permitted truck weight. The LADOTD and local Departments of Public Works evaluate the intended use of a roadway and assess the potential damage to the pavement structure across the roadway network when permitting truck routes that may carry oversize and overweight trucks. Local roads are generally built with less stringent criteria because they handle less weight and volume of vehicles than Interstate and State routes. Thus, roadway engineering varies depending on the functionality of the roadway.

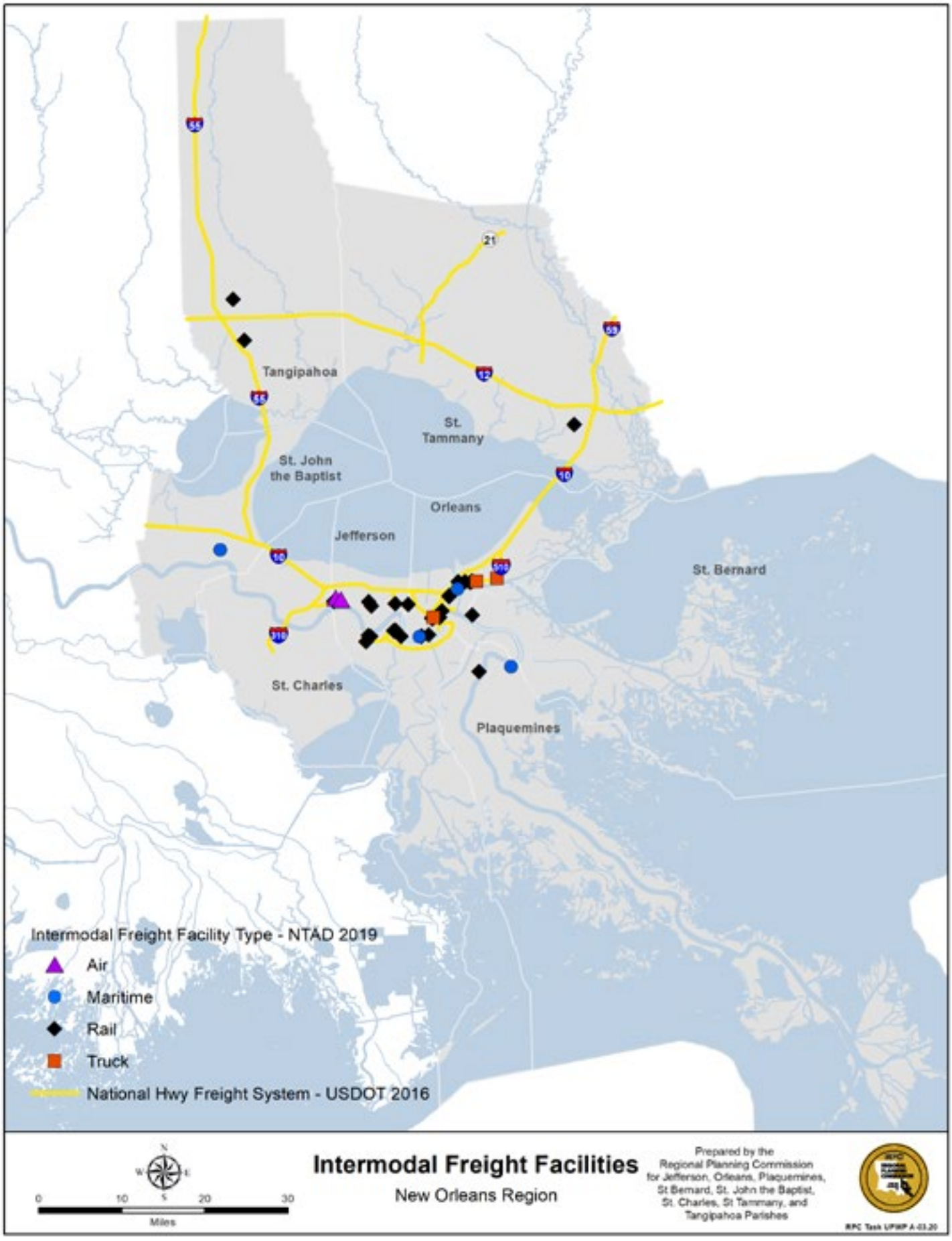


Figure 3. Designated and Undesignated Intermodal Freight Facilities

FREIGHT OVERVIEW

Regional Trends - Jobs

Jobs connected to the freight industry are more concentrated in Louisiana than the nation as a whole. These jobs are generally well paying and play a major role in the economic vitality of Greater New Orleans per EMSI labor analytics data.[15] The histogram below (Figure 4) illustrates the range of freight related jobs in the region. Inland water freight transportation comprises the most jobs, predominently in Jefferson and St. Tammany Parishes. General warehousing and storage has the third highest number of jobs, mainly in Jefferson and Tangipahoa Parishes. The US Postal Service hosts the 2nd highest number of freight jobs in the region, and Orleans Parish is home to most of them. Orleans also supports a significant number of marine cargo handling jobs. General freight trucking, long-distance, and truckload jobs exist across all parishes, but most are based in St. John Parish.

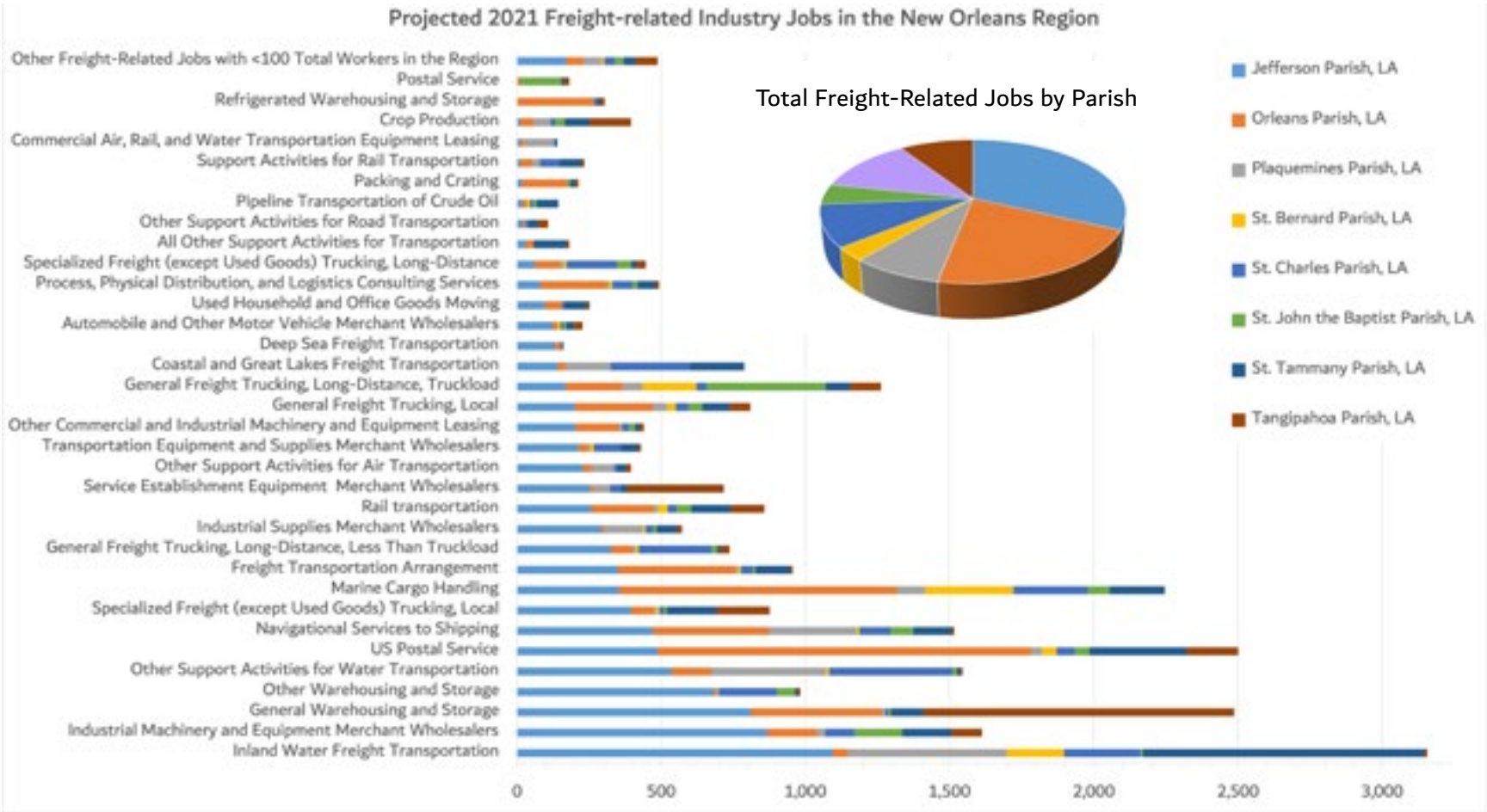


Figure 4. Projected 2021 Freight Jobs in the New Orleans Region Source: EMSI Q1 2020 Data Set

FREIGHT OVERVIEW

Regional Trends - Jobs

In the 8-parish region Freight and Warehousing jobs are estimated to increase by three percent (3%) in 2021 as compared to 2010. (Figure 5) EMSI data indicates there were 27,503 freight related jobs in the New Orleans region in 2010 and 28,319 freight related jobs in 2020.[16]

The average annual earnings in the freight and warehousing industries in 2019 was $78,615.[17] This is well above the regional average of $48,289 per year.[18]

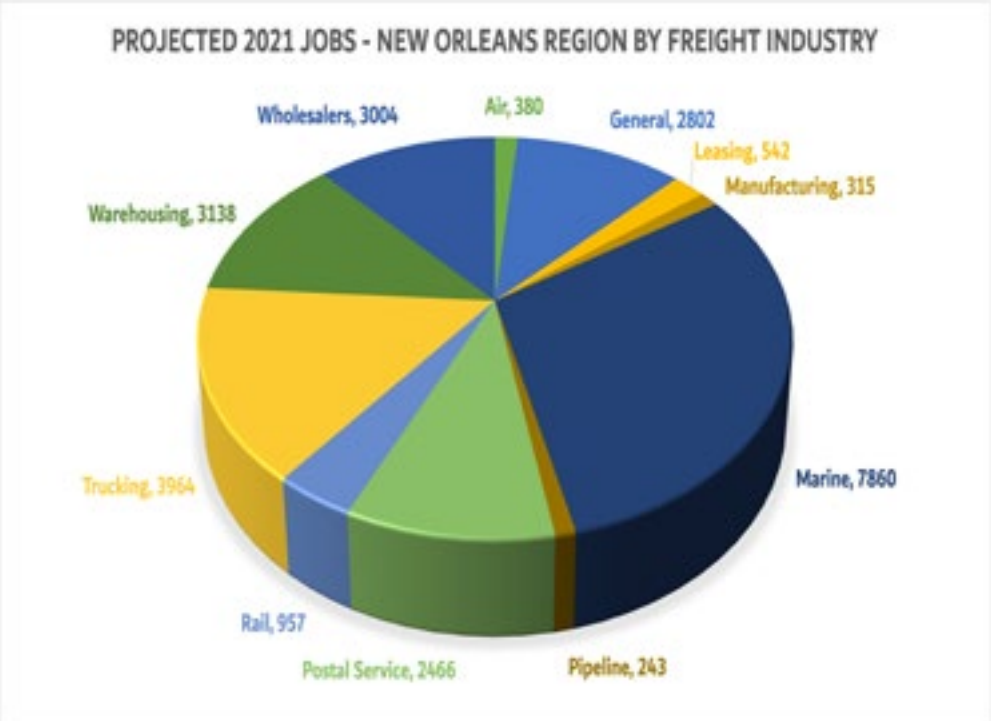


Figure 5. Projected 2021 Jobs by Freight Industry Source: EMSI

At-grade roadway improvements to access the new Airport at Loyola Drive in Kenner, LA Photo: LADOTD

FREIGHT OVERVIEW

Regional Trends - Jobs

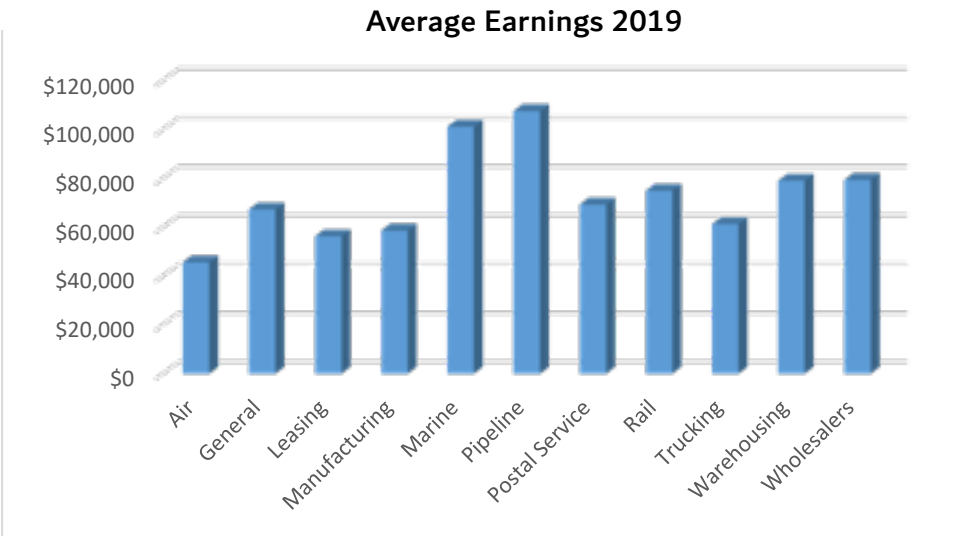


Figure 6. Average Freight-related Job Earnings, 2019 Source: RPC CEDS 2019-2023

Maritime workers on board a grain cargo ship, moving the ship's rope ladder

Valero Meraux Refinery in Chalmette, LA
Photo: Marin Tockman Stephens

The highest paying jobs are in the pipeline sector with an average annual earning of $107,736. This is followed by the marine sector with an average annual earning of $101,346. (Figure 6).

Warehousing capacity is largely located on the south shore. (Figure 7)

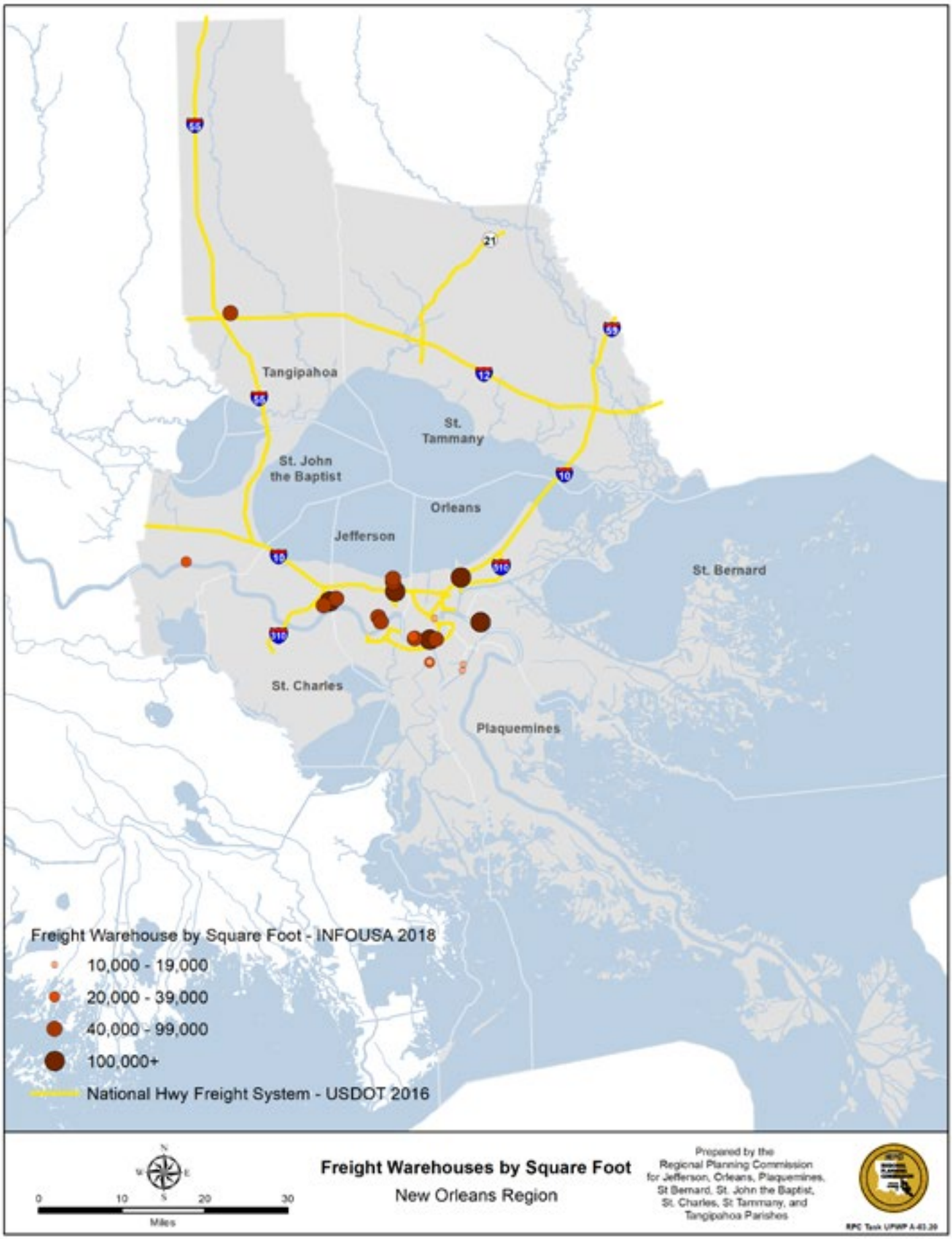


Figure 7. Freight Warehouses by Square Foot

FREIGHT OVERVIEW

Regional Trends - Freight Flows

DOMESTIC FREIGHT

The U.S. Bureau of Transportation Statistics (BTS) tracks the movement of commodities into and out of the United States and among states and major metropolitan areas based on a Commodity Flow Survey completed every 5 years and international trade data from the Census Bureau.[19]

The Freight Analysis Framework (FAF) is the public facing webtool designed to extract data to understand what commodities are being shipped by tonnage, by value and by ton-miles by regions of origin and destination, commodity type and mode domestically and internationally.[20]

Domestic commodities tracked in the Commodity Flow Survey are those moved between the 50 states and District of Columbia at the state and metropolitan area level. No foreign trade flows are included.

Import flows are commodities moving from foreign destinations to domestic destinations. Export flows are commodities moved from domestic origins to foreign destinations.

The following tables represent Commodity Flow Survey data completed in 2017 filtering for the New Orleans metropolitan area, which is described as New Orleans, LA-MS (LA Part). This designation is not coterminus with the 8-parish region.[21] Freight flows for the year 2018 and projected freight flows for 2045 were extracted from the FAF4 (fourth edition) to better understand expected trends.

Coal barges pushed by a tug boat near a series of anchored ships on the west bank of the lower Mississippi River

FREIGHT OVERVIEW

Domestic Commodities by Tonnage

Origin Commodities by Tonnage (K-Tons) 2018	
Gasoline	176,513
Coal-n.e.c.	49,195
Fuel Oils	34,653
Basic Chemicals	15,755
Gravel	9,742

Table 2. Origin Tonnage, 2018 Source: FAF

Destination Commodities by Tonnage (K-Tons) 2018	
Coal-n.e.c.	59,646
Crude Petroleum	50,585
Cereal Grains	21,424
Other Ag. Products	21,150
Gasoline	14,806

Table 3. Destination Tonnage, 2018 Source: FAF

Combined Origin & Destination Freight Tonnage (K-Tons) by Mode 2018 & 2045		
Mode	2018	2045
Air (include truck-air)	7	12
Multiple modes & mail	16,156	25,143
Pipeline	134,866	135,617
Rail	55,726	24,365
Truck	99,347	138,261
Water	147,170	187,542

Table 4. Combined Origin and Destination Tonnage, 2018 Source: FAF

K-Ton: thousand tons-unit of measure for weight (used by FAF)

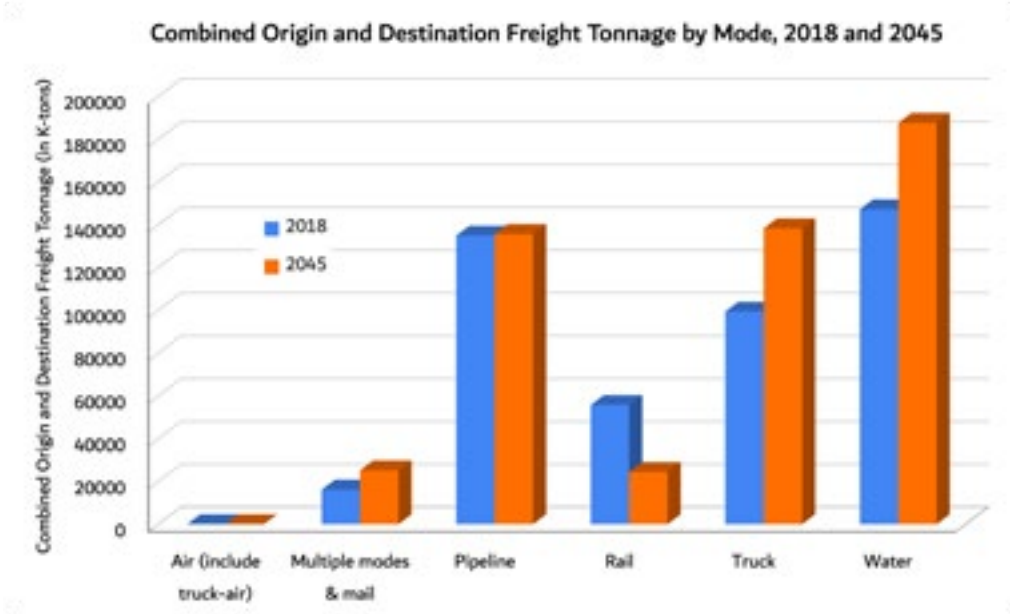


Figure 8. Combined Origin and Destination Tonnage by Mode, 2018 and 2045

The region's greatest tonnage product shipped within the 50 states and the District of Columbia was gasoline at 179,513 K-Tons followed by coal-n.e.c. (not otherwise classified) at 49,195 K-Tons. (Table 2) The region's greatest tonnage product received was coal-n.e.c. at 59,646 K-Tons followed by crude petroleum at 50,585 K-Tons. (Table 3)

Water carried the highest combined origin and destination tonnage in 2018 with 147,170 K-Tons. Pipeline carried the second highest origin and destination tonnage in 2018 at 134,866 K-Tons (Table 4) and is expected to remain level in 2045, whereas maritime and truck freight are expected to grow by 22% and 29% respectively. (Figure 8)

FREIGHT OVERVIEW

Domestic Commodities by Value

Origin Commodities by Value in Thousand Millions 2018	
Gasoline	$133,464
Fuel Oils	$45,955
Coal-n.e.c.	$18,758
Basic Chemicals	$9,314
Mixed Freight	$4,452

Table 5. Origin by Value, 2018 Source: FAF

Destination Commodities by Value in Thousand Millions 2018	
Crude Petroleum	$31,901
Coal-n.e.c.	$16,554
Gasoline	$14,484
Other ag products	$10,289
Fuel Oils	$8,258

Table 6. Destination by Value, 2018 Source: FAF

Combined Origin & Destination Freight Value by Mode in Thousand Millions 2018 and 2045		
Mode	2018	2045
Air (include truck-air)	$444.60	$1,427.89
Multiple modes & mail	$15,464.56	$29,872.25
Pipeline	$79,910.20	$74,105.20
Rail	$9,628.60	$15,535.38
Truck	$85,093.86	$119,436.60
Water	$79,678.57	$91,977.78

Table 7. Combined Origin and Destination by Value, 2018 Source: FAF

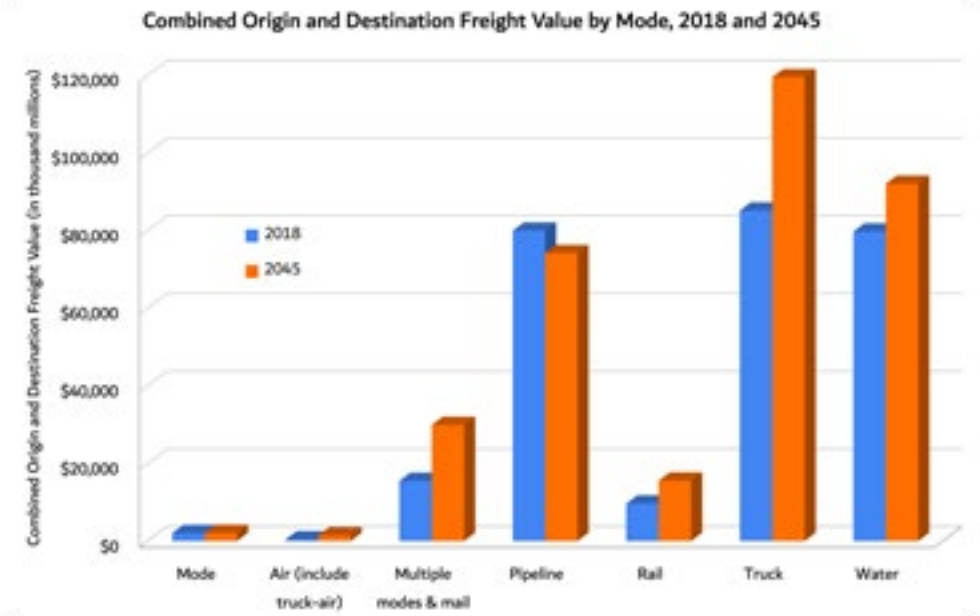


Figure 9. Combined Origin and Destination Value by Mode, 2018 and 2045

The region's highest value product shipped within the 50 states and the District of Columbia was gasoline, valued at $133,464 million. The second highest was fuel oils at $45,955 million. (Table 5) The region's highest value commodity received from domestic trade was crude petroleum, valued at $31,901 million. This was followed by coal-n.e.c. (not elsewhere classified) at $16,554. (Table 6)

In 2018, of all modes, trucks moved the highest value commodities domestically at $85,093 million, combining origin and destinations. Pipeline and marine shipping were a close second with $79,910 and $79,678 million respectively. (Table 7) Truck freight is expected to grow by an estimated 30% by 2045. (Figure 9)

FREIGHT OVERVIEW

International Commodities by Tonnage

Import Commodities by Tonnage (K-tons) 2018	
Crude Petroleum	12,746
Fuel Oils	3,046
Metallic Ores	1,996
Fertilizers	1,976
Base Metals	1,559

Table 8. Import by Tonnage, 2018 Source: FAF

Export Commodities by Tonnage (K-tons) 2018	
Cereal Grains	51,146
Coal-n.e.c.	23,051
Fuel Oils	16,558
Crude Petroleum	15,930
Coal	15,392

Table 9. Export by Tonnage, 2018 Source: FAF

Top Export Destinations by Tonnage (K-tons) 2018	
Rest of Americas	99,951
Africa	33,791
Mexico	28,068
Canada	16.4

Top Import Origins by Tonnage (K-tons) 2018	
Rest of Americas	16,680
Africa	6,089
Mexico	1,482
Eastern Asia	.0017

Table 10. Top Exports by Tonnage (above right), 2018 Source: FAF

Table 11. Top Imports by Tonnage (below right), 2018 Source: FAF

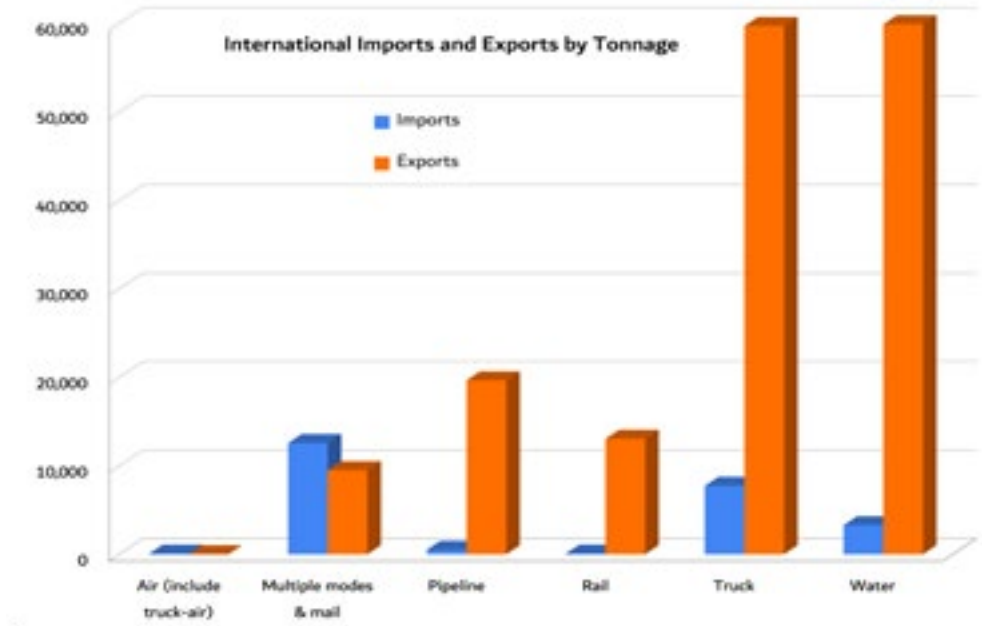


Figure 10. International Imports and Exports by Tonnage, 2018 and 2045

When moving freight between nations, the New Orleans region's highest tonnage import is crude petroleum. (Table 8) Its highest tonnage export is cereal grains followed by coal-n.e.c. (not elsewhere classified). (Table 9)

The New Orleans region exports the most freight by tonnage to the Rest of the Americas (Central and South American nations not including Mexico), which are grouped for purposes of tabulation. (Table 10) The region also imports the most commodities from the Rest of the Americas. Africa is New Orleans' second highest import and export nation by tonnage. (Table 11) The majority of tonnage is moved by water and truck for international imports and exports. (Figure 10)

FREIGHT OVERVIEW

International Commodities by Value

Import Commodities by Value in Thousand Millions 2018	
Crude Petroleum	$5,276
Fuel Oils	$485
Base Metals	$411
Fertilizers	$315
Base Chemicals	$147

Table 12. Imports by Value, 2018 Source: FAF

Export Commodities by Value in Thousand Millions 2018	
Cereal Grains	$8,353
Coal-n.e.c.	$8,220
Gasoline	$5,028
Other ag product	$2,305
Animal Feed	$1,859

Table 13. Exports by Value, 2018 Source: FAF

Top Export Destinations by Value in Thousand Millions 2018	
Rest of Americas	$20,560
Mexico	$7,388
Africa	$3,724
Canada	$44.1

Top Import Origins by Value in Thousand Millions 2018	
Rest of Americas	$5,517
Africa	$1,152
Mexico	$528
Eastern Asia	$1.3

Table 14. Top Export Destiinatins by Value (above right), 2018 Source: FAF

Table 15. Top Import Origins by Value (below right), 2018 Source: FAF

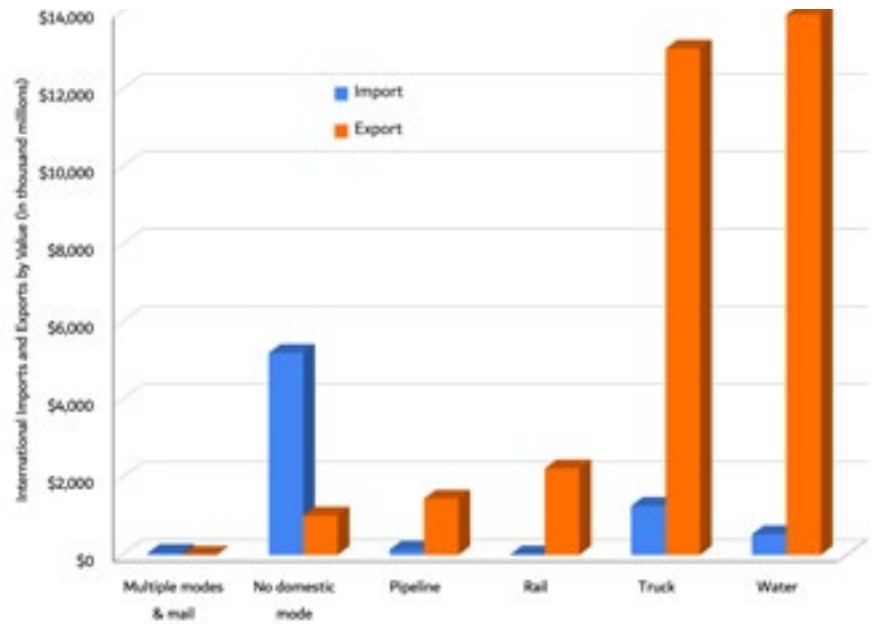


Figure 11. International Imports and Exports by Value

When moving freight between nations, the New Orleans region's highest value import is crude petroleum. (Table 12) Its highest value export is cereal grains followed by coal-n.e.c. (not elsewhere classified). (Table 13) The region exports the most freight by value to the Rest of the Americas (Central and South American nations not including Mexico), which are grouped as one for purposes of tabulation. (Table 14) It also imports the most commodities by value from the Rest of the Americas. Africa is our second highest import and export nation by value. (Table 15) The highest value exports travel by water, closely followed by truck. (Figure 11)

ROAD/TRUCK

Hammond, Louisiana Truck Stop

ROAD/TRUCK

Network

CLASSES OF ROADWAYS

The conditions of our roadways are critical to the flow of freight in and out of the region. State and local agencies are responsible for roadway maintenance. The LADOTD owns and maintains almost all of the access-controlled roadways in the state, and the different parishes and municipal governments own and maintain the local roads.[22] Roadways in Louisiana are classified into four groups[23]:

1. INTERSTATE HIGHWAY SYSTEM (IHS) – Federally defined rural and urban Interstates designed to provide the highest level of speed and capacity for non-local travel. It connects metropolitan areas across state lines and international borders, industrial centers and serves as access for the National Defense transportation.

2. NON-INTERSTATE NATIONAL HIGHWAY SYSTEM (NHS) – Developed by the U.S. Department of Transportation (USDOT) in cooperation with states, local officials and metropolitan planning organizations (MPOs) and consists of roadways important to the nation's economy, defense, borders and mobility. It includes the nation's interstate system, selected principal arterials, the Strategic Highway Network (STRANET), major strategic highway network connectors and intermodal connectors. These routes are eligible for federal-aid funds. The NHS carries 75 % of heavy truck traffic and has the advantage that it encourages states to focus on a limited number of high-priority routes.

3. STATEWIDE HIGHWAY SYSTEM (SHS) – Complements the NHS and comprises those highways not on the NHS and functions to move people and goods across regions and to international markets.

4. REGIONAL HIGHWAY SYSTEM (RHS) – provides access and mobility for local travel.

NATIONAL HIGHWAY FREIGHT SYSTEM

The most recent transportation bill (FAST Act - 2015) Fixing America's Surface Transportation Act, established the National Highway Freight System (NHFS), which may consist of roadways that meet certain criteria. Some may be determined significant to freight locally. In the New Orleans region the NHFS is a subset of roadways within the designated National Highway System that are deemed the most critical for freight. They are eligible for funding apportioned to the LADOTD for the National Highway Freight Program. A map of the NHS and the NHFS routes are shown on the next page. (Figure 12)

Per the FHWA FAST Act Fact Sheet for the NHFP, the overarching freight goals are to invest in freight related infrastructure and operations, improve safety, security, efficiency and resiliency of freight in urban and rural areas, improve the state of good repair, improve innovation and advanced technology for freight and support multi-modal planning for freight. The freight network is classified into the following categories:[24]

1. PRIMARY HIGHWAY FREIGHT SYSTEM (PHFS)
This is a network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measurable and objective national data. The U.S. network consists of 41,518 centerline miles, including 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads.

2. OTHER INTERSTATE PORTIONS NOT ON THE PHFS
These highways consist of the remaining portion of interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities. The portions amount to an estimated 9,511 centerline miles of Interstate, nationwide, and will fluctuate with additions and deletions to the Interstate Highway System.

3. CRITICAL RURAL FREIGHT CORRIDORS (CRFCs)
These are public roads not in an urbanized area which provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.

4. CRITICAL URBAN FREIGHT CORRIDORS (CUFCs)
These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.[25]

Figure 12. National Hwy and Freight Systems

ROAD/TRUCK

Network & Bridges

PARISH TRUCK ROUTES

Each parish designates routes for major truck movements by ordinance on roadways they own and maintain. Truck routes can be modified over time based on changes in land use, access needs and political considerations. Often parish truck routes act as an adjunct to the National Freight Highway System to move freight to and from endpoints over local roads. Local dedicated truck routes typically provide the first or last link in most freight movement. Maps of local truck routes by parish can be found in Appendix B. Maps of truck routes by north shore, south shore and river parishes can be found on pages 52, 53, and 54.

Note that in Tangipahoa Parish, trucks are allowed on most roadways and are specifically prohibited on particular routes rather than specifically allowed on specific routes. In Orleans Parish, a truck size restriction is in place in the French Quarter to protect the unique historic district.

BRIDGES

Southern Louisiana is characterized by wetlands, making surface road transportation difficult without elevated structures or bridges. A large majority of the State's interstate system is built on elevated structures and our region's bridges are key parts of that infrastructure that act as physical connections over water to ensure the successful flow of freight going in, out, and through the eight parishes of this region.[26]

Bridge engineering and construction is a significant legacy in Louisiana's transportation history after the early 20th Century, contributing to the establishment of the National Highway System in 1956.[27] Responsibility for bridge maintenance falls to the State or the local jurisdiction, depending upon ownership. Bridges are classified as on-system or off-system, reflecting ownership status. The LADOTD maintains all on-system bridges which include bridges on the National Highway System and the Interstate. The LADOTD budgets a small amount to support parish bridge replacement and repair.
There are 1,083 on-system bridges in the 8-parish region. These include 13.6 miles of bridge span and total 247 miles with the approach roadway abutments.[28] (see Appendix C) There is an additional 740 off-system bridges. This reflects the enormity of the water bodies in the region and the bridge network needed to cross them. They require ongoing maintenance which supports all truck classifications in the movement of freight.

The Causeway is made of two parallel bridges 24 miles in length. They connect the south and north shores of the New Orleans region over Lake Pontchartrain. It was created by the establishment of the Greater New Orleans Expressway Commission in 1969. It was paid for and has been continuously maintained through tolls.

The Lake Pontchartrain Causeway is the longest, continuous bridge over water in the world.
Photo: Greater New Orleans Expressway Commission

ROAD/TRUCK

Historic Bridges

HISTORIC BRIDGES

Today, Louisiana has approximately 150 designated historic bridges, a few of which were some of the first prototypes of movable, bascule, and swing vehicular bridges constructed in North America. There are 17 historically designated bridges in the 8-parish region, 10 of which are movable to accommodate road and maritime movement.[29]

Prior to 2015, a lengthy regulatory process was necessary before working on a historic bridge. In 2015, the LADOTD released the first "Management Plan for Historic Bridges Statewide", in coordination with the Louisiana State Historic Preservation Office (LASHPO) and FHWA. It was accompanied by a Programmatic Agreement among the organizations that outlines what work can take place and how it should be managed for bridges formally listed in or eligible for listing in the National Register of Historic Places. The plan inventoried historic bridges throughout the state and categorized their historic status. It developed a guidance procedure for bridge preservation treatments with the purpose of encouraging their continued use. This effectively expedites the regulatory process to reduce costs of repair to critical freight infrastructure.[30]

Truck traveling in a narrow travel lane on LA 46 over historic St. Claude Bridge

Historic St. Claude Bridge, a 1919 Strauss heel trunnion bascule bridge in operation over the IHNC lock
Photo: LA DOTD Louisiana Historic Bridge Inventory

ROAD/TRUCK

Data Collection

TRAFFIC DATA COLLECTION FOR HIGHWAYS

The FAST Act also required State's and MPO's to set performance targets related to improvements that support freight. Targets are largely based on traffic volume, speed and travel time of vehicles, travel time reliability and condition of infrastructure. A biennial monitoring process to assess if targets are met is mandated in the FAST Act. The RPC staff monitor activity on the region's roadways through a variety of data sources by compiling and analyzing the data. These provide a comprehensive view of vehicular passenger and freight travel. Data types and sources include:

Speed and Travel Time

Speed and travel time are available via the National Performance Management Research Dataset (NMPRDS). These are vehicle probe data, which are procured by FHWA on all NHS routes and provided to the RPC. The LADOTD has additionally purchased an expanded dataset that includes most other Federal-Aid routes. The data is collected via in-vehicle probes such as commercial vehicle GPS trackers or location service enabled cell phones, and it typically becomes available to the RPC one month after it is collected.

Reliability

Travel time reliability or consistency is available via the National Performance Management Research Dataset (NPMRDS), and is calculated based on average travel times. Travel time reliability is applicable to all vehicles using the roadway network, including trucks.

Condition

Road and bridge condition is collected by various agencies for their own purposes with various metrics. The data most frequently used by the RPC was collected by the LADOTD in 2017-2018 and provides pavement conditions on all roads and bridges. Updated data is not available yet but will be necessary to comply with federal performance measure requirements in the future.

Traffic Volume

The RPC staff maintain an annual traffic count program that collects traffic volumes, including vehicle classification counts, at 50-100 locations each year. Other volume counts collected by the LADOTD or local agencies are also incorporated into the traffic count database in an attempt to create a comprehensive regional dataset of traffic counts.

RPC Primary Contact for traffic data is Tom Haysley, Principal Planner

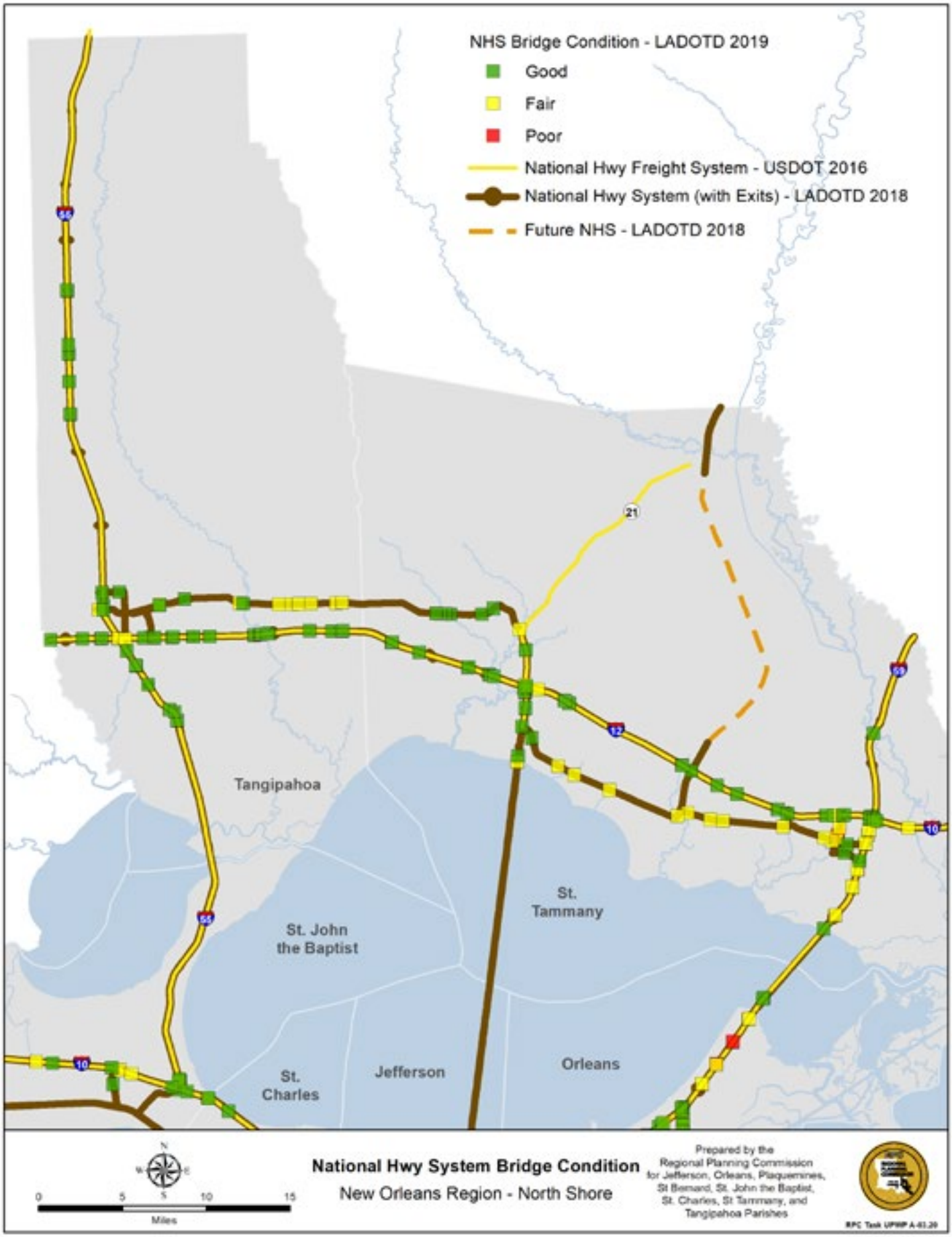


Figure 13. National Hwy System Bridge Condition North Shore

Figure 14. National Hwy System Bridge Condition South Shore

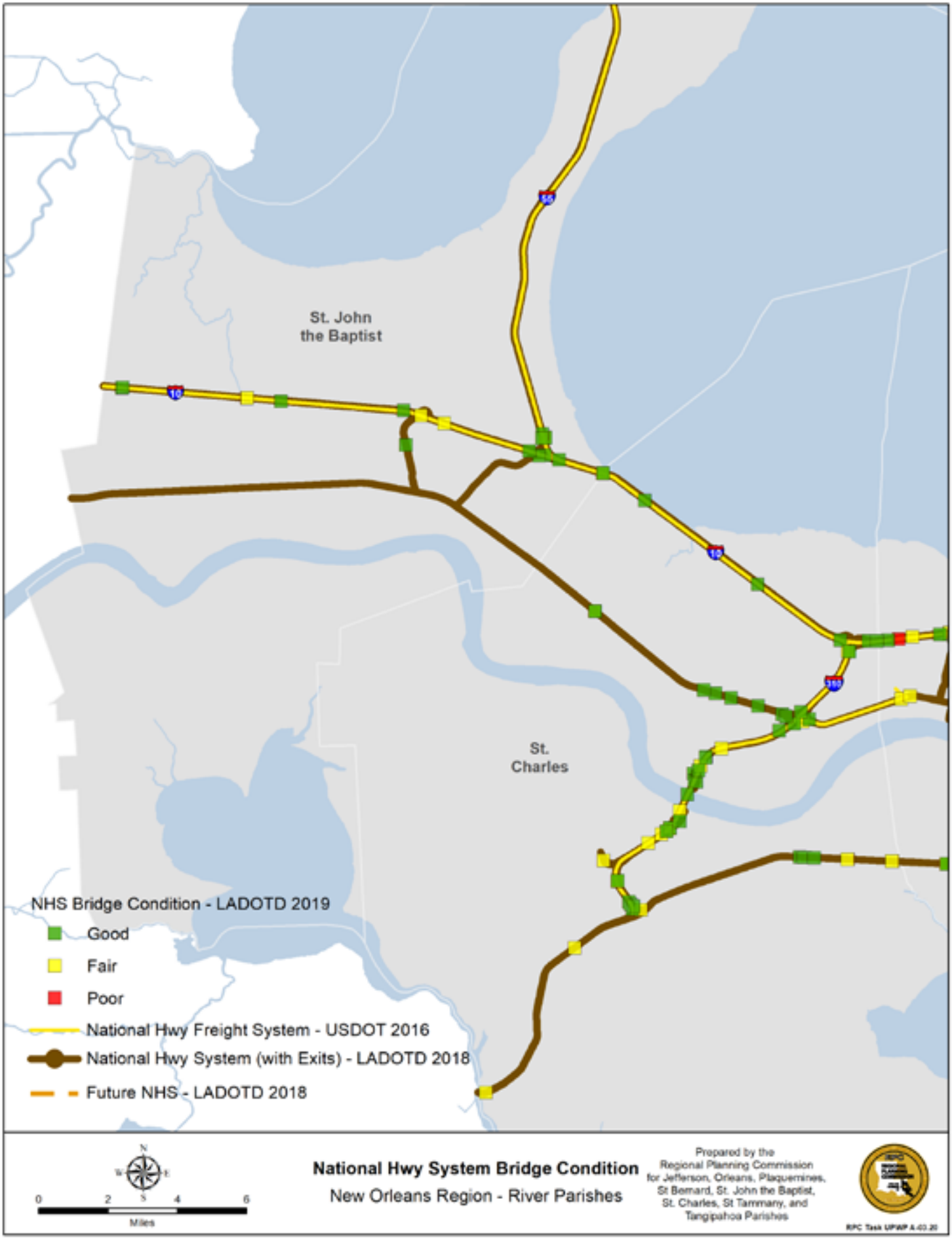


Figure 15. National Hwy System Bridge Condition River Parishes

ROAD/TRUCK

Condition and Performance Measures

ROAD AND BRIDGE CONDITION

Freight movement along the interconnected federal, State, and local roadways is dependent upon maintaining a state of good repair for the region's roadways and bridges. The FAST Act requires states and MPOs set 2- and 4-year targets[31] for the condition of Interstate pavement, Non-Interstate NHS pavement, and NHS bridges. MPOs may adopt their state's targets or set their own. For the reporting period 2018-2022, the Transportation Policy Committee of the RPC chose to set its own targets, but uses LADOTD targets, with some modifications, as the basis for regional calculations. (Table 16) Maps of existing bridge conditions are shown on the previous pages. (Figures 13-15).

Performance Measures Used to Track Condition of Roads and Bridges on the NHS

- Percentage of interstate lane miles in good or poor condition
- Percentage of NON-interstate lane miles in good or poor condition
- Percentage of interstate bridge deck in good or poor condition

Statewide Regional Pavement & Bridge Condition Targets, 2018-2022

	Interstate		Non-Interstate NHS		NHS Bridge	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
2018 Baseline	12.00%	1.90%	17.80%	9.90%	44.80%	6.70%
2-year Target (2020)	10.00%	3.00%	16.00%	10.00%	35.00	9.90%
4-year Target (2022)	--%	--%	--%	--%	--%	--%

Table 16. Statewide Condition Targets Source: NPMRDS 2020

The targets for each Metropolitan Planning Area (MPA) served by the RPC are listed on the following pages. (Figures 14-17 and Tables 17-20) Performance will be assessed when new road and bridge condition data are available. Note that the percentage of roadways in fair condition is not listed; the performance measures track good and poor ratings only. The majority of the region's NHS roads and bridges are currently in fair condition. The new performance measuring system will be deployed as performance measures are finalized.

ROAD/TRUCK

Performance Measures New Orleans MPA

Causeway Interchange, Jefferson Parish Photo: LADOTD

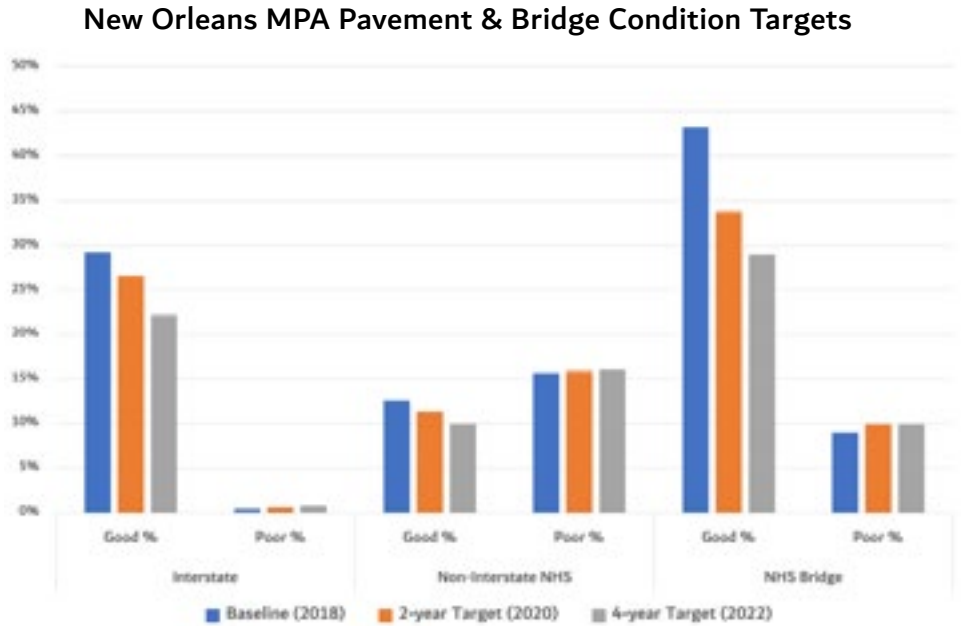


Figure 16. New Orleans MPA Condition Targets Source: NPMRDS 2020

New Orleans MPA Pavement & Bridge Condition Targets, 2018-2022						
	Interstate		Non-Interstate NHS		NHS Bridge	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
2018 Baseline	29.20%	0.37%	12.61%	15.71%	43.20%	9.00%
2-year Target (2020)	26.55%	0.58%	11.33%	15.87%	33.75%	9.90%
4-year Target (2022)	22.12%	0.77%	9.92%	16.03%	28.93%	9.90%

Table 17. New Orleans MPA Condition Targets Source: NPMRDS 2020

ROAD/TRUCK

Performance Measures Mandeville/Covington MPA

US 190 near LA 22, Mandeville, Louisiana

LA 21 at I-12, Covington, Louisiana

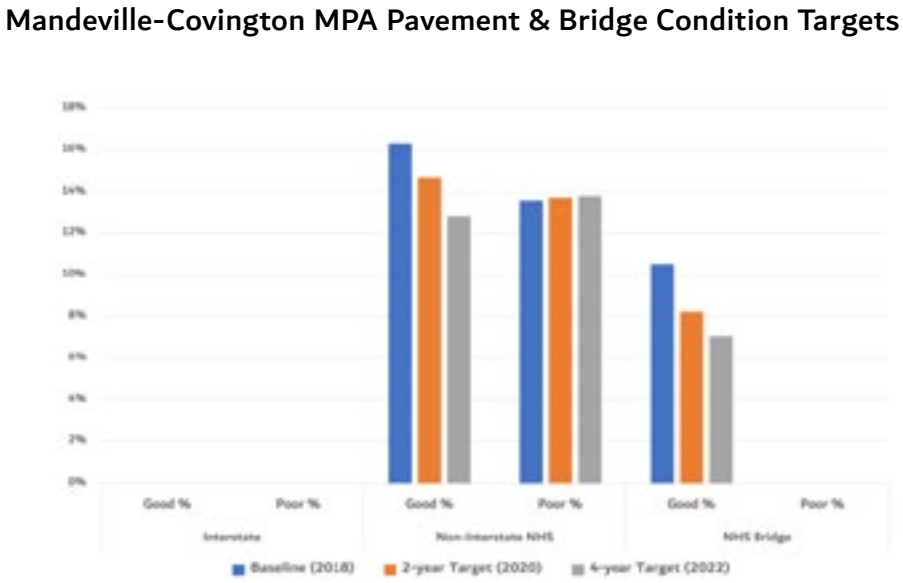


Figure 17. Mandeville-Covington MPA Condition Targets Source: NPMRDS 2020

Mandeville-Covington Pavement & Bridge Condition Targets, 2018-2022						
	Interstate		Non-Interstate NHS		NHS Bridge	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
Baseline	0.00%	0.00%	16.31%	13.54%	10.51%	0.00%
2-year Target (2020)	0.00%	0.00%	14.66%	13.68%	8.21%	0.00%
4-year Target (2022)	0.00%	0.00%	12.83%	13.81%	7.04%	0.00%

Table 18. Mandeville-Covington MPA Condition Targets Source: NPMRDS 2020

ROAD/TRUCK

Performance Measures Slidell MPA

US 190 at US 11, Slidell, Louisiana

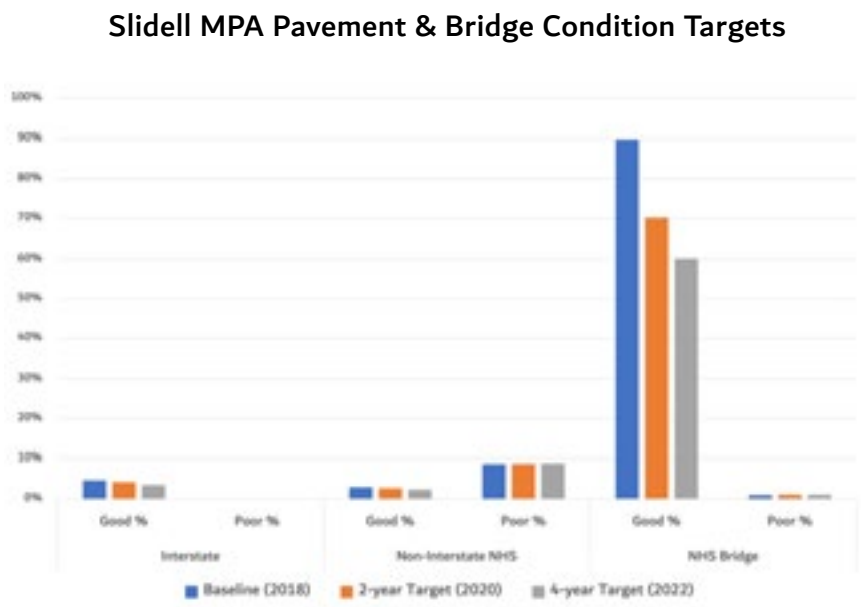


Figure 18. Slidell MPA Condition Targets Source: NPMRDS 2020

Slidell Pavement & Bridge Condition Targets, 2018-2022						
	Interstate		Non-Interstate NHS		NHS Bridge	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
Baseline	4.66%	0.00%	2.98%	8.76%	89.85%	0.97%
2-year Target (2020)	4.23%	0.00%	2.68%	8.84%	70.20%	1.07%
4-year Target (2022)	3.53%	0.00%	2.34%	8.93%	60.17%	1.07%

Table 19. Slidell MPA Condition Targets Source: NPMRDS 2020

ROAD/TRUCK

Performance Measures South Tangipahoa MPA

I-12 at US 51 Roundabout, Hammond, Louisiana

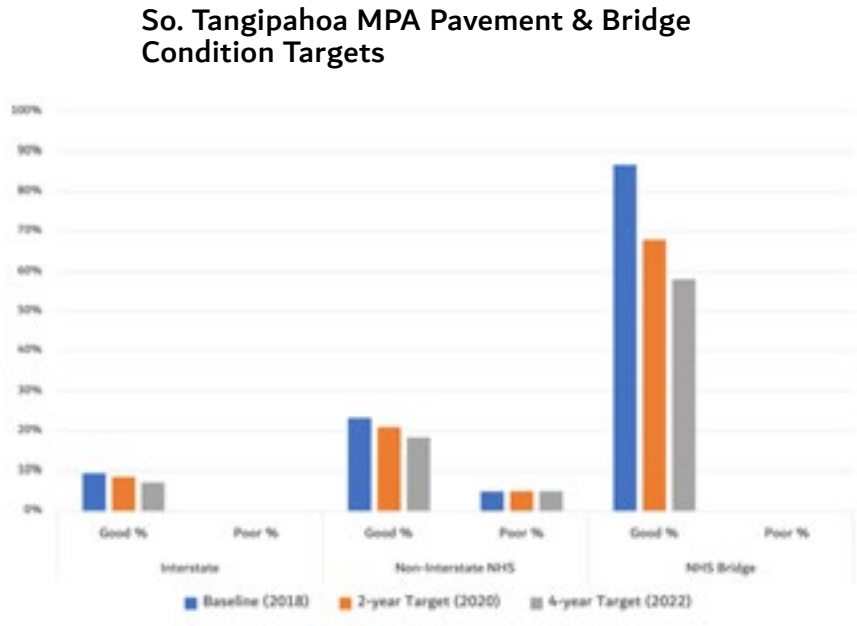


Figure 19. So. Tangipahoa MPA Condition Targets Source: NPMRDS 2020

South Tangipahoa Pavement & Bridge Condition Targets, 2018-2022						
	Interstate		Non-Interstate NHS		NHS Bridge	
	Good %	Poor %	Good %	Poor %	Good %	Poor %
Baseline	9.56%	0.00%	23.33%	4.97%	86.83%	0.00%
2-year Target (2020)	8.69%	0.00%	20.97%	5.02%	67.84%	0.00%
4-year Target (2022)	7.25%	0.00%	18.35%	5.07%	58.15%	0.00%

Table 20. So. Tangipahoa Condition Targets Source: NPMRDS 2020

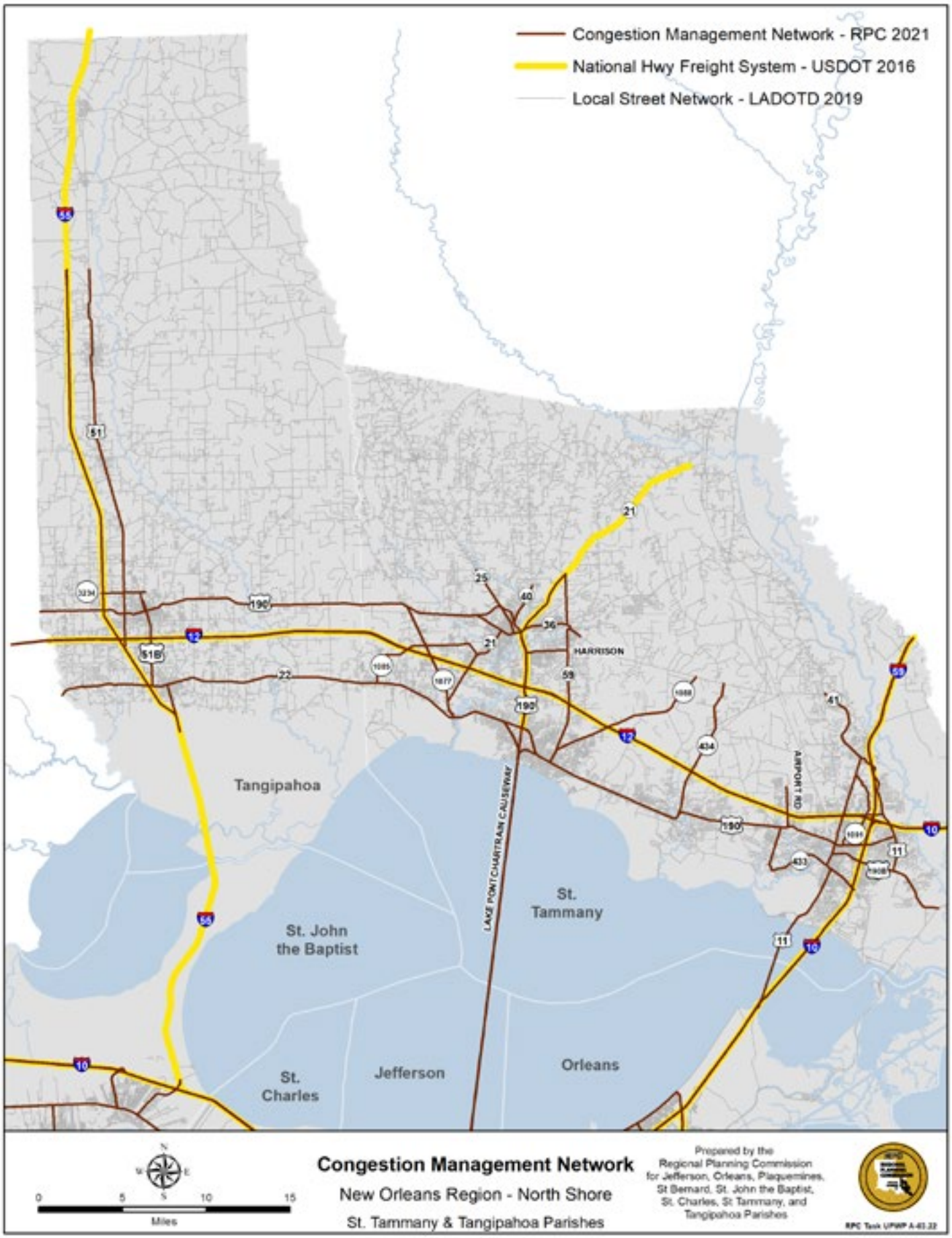


Figure 20. Congestion Management Network - North Shore

Figure 21. Congestion Management Network - South Shore

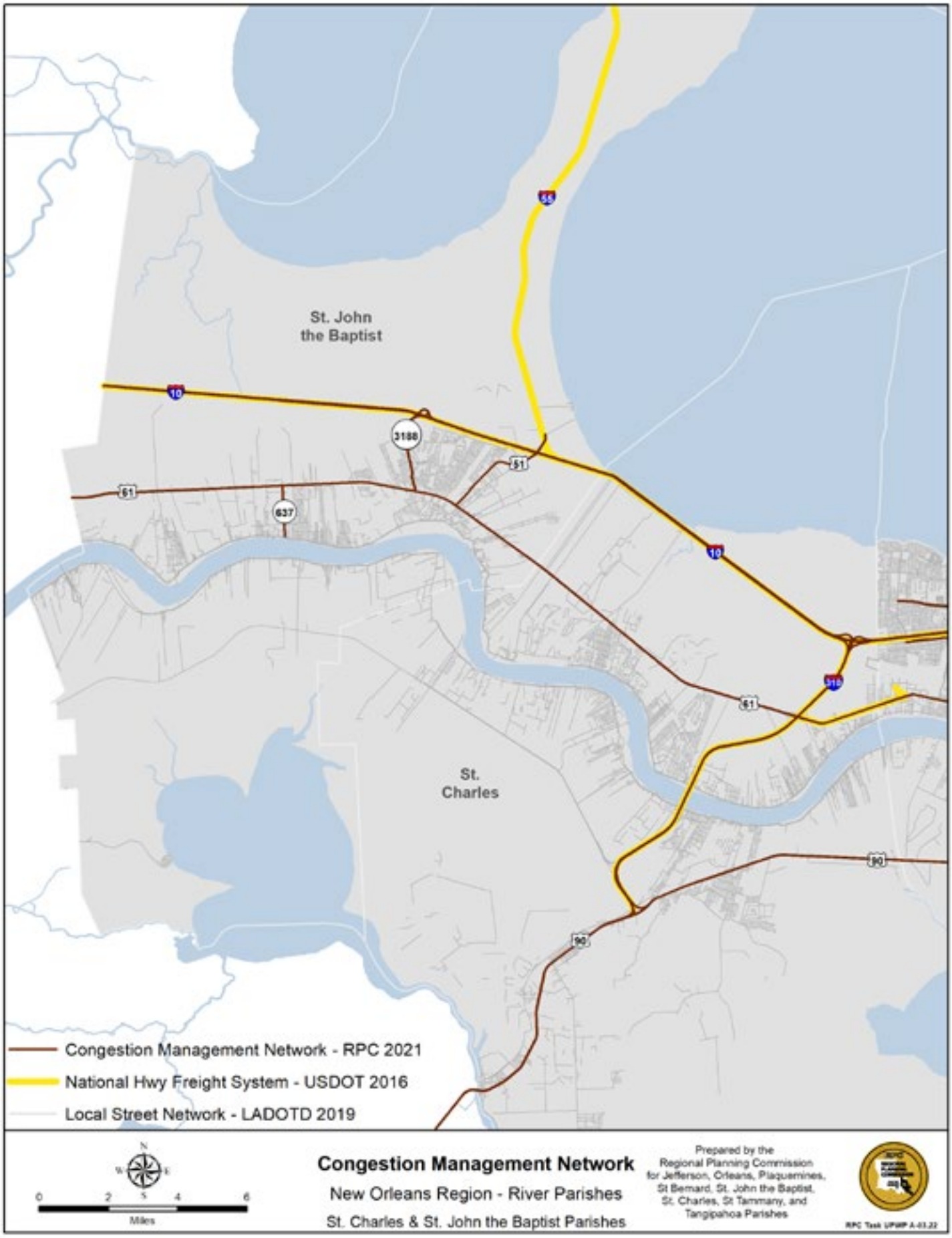


Figure 22. Congestion Management Network - River Parishes

ROAD/TRUCK

Congestion Management

Federal legislation requires the New Orleans MPO maintain a Congestion Management Process (CMP) to identify and mitigate regional traffic congestion through projects and policies. Special emphasis is given to the Congestion Management Network. These are selected routes designated as the most significant to regional mobility and accessibility. The process was updated concurrently with the most recent Metropolitan Transportation Plans (MTP, released in 2019) to comply with changes in federal guidance, to take advantage of new data-sets, and respond to the implementation experience of the prior CMP.

In concert with the CMP, the MPO uses three federally required performance measures to track the reliability of passenger and freight travel on the NHS. Congestion measures that focus on reliability attempt to convey how predictable travel times are on a given segment of roadway. Segments that are highly reliable can be expected to have consistently similar travel times across defined time periods such as peak traffic periods between 7:00 a.m. and 9:00 a.m. or non-peak periods. Such measures are therefore valuable to freight providers who must accurately predict the shipment travel time. The three reliability measures tracked by the RPC are below:

Photo: Federal Highway Administration

CONGESTION MANAGEMENT NETWORK

While the CMP is intended to address congestion across the entire transportation system it focuses on a subset of Federal-Aid routes that carry the majority of regional travel and experience the most severe congestion. (Figures 20-22) The Congestion Management Network serves as the core basis for analyzing and measuringcongestion in the region, and consists of routes with the highest traffic volumes, regional connectivity, and significance as defined by stakeholders. Congestion observed on these routes serves as an indicator of overall regional congestion. Correspondingly, alleviating congestion on these routes can be expected to have a considerable impact on regional travel delay.

1. Interstate Level of Travel Time Reliability (Interstate LOTTR)
The percentage of person-miles traveled on the Interstate system that are considered reliable (i.e., 100% is ideal). A person-mile is defined as one person transported one mile.

2. Non-Interstate NHS Level of Travel Time Reliability (Non-Interstate NHS LOTTR)
The percentage of person-miles traveled on the non-Interstate NHS that are considered reliable (i.e., 100% is ideal)

3. Truck Travel Time Reliability Index (Truck TTRI)
A ratio indicating the reliability of truck travel times on the Interstate system (i.e., 1.0 is ideal). The ratio is actual travel time over free flow travel time.

ROAD/TRUCK

Travel Time Reliability

The Interstate Level of Travel Time Reliability (Interstate LOTTR) and Truck Travel Time Reliability (Truck TTRI) measures data for all four of the MPAs represented by the RPC (South Tangipahoa, Slidell, Mandeville-Covington, and New Orleans). They are aggregated here to provide regional measures and targets. The State of Louisiana is required to set 2-year and 4-year travel reliability performance targets. MPOs may use the State targets or set their own. The RPC's TPC has chosen to set its own regional system performance targets for the reporting period of 2018-2022. Overall, the targets reflect an expectation that system reliability will change minimally over the next four years. This assumption is based on (1) prior year trends; (2) relatively slow regional growth; and (3) relatively few projects that will have a significant impact on reliability measures. Travel in the 8-parish region tends to be less reliable than in the state as a whole. The region and State have seen similar year-to-year rates of change, however. Truck travel on the Interstates is notably less reliable in areas near the New Orleans Central Business District (CBD), in East Jefferson, near both I-1 0/I-610 interchanges and approaching the Mississippi River crossing. There are also significant reductions in reliability on I-12 near Covington and on I-310 near Boutte. The Interstate locations with the worst travel time reliability are listed below. These locations have reliability measurements worse than 90 percent of all other measurements in the region. (Figure 23)

Interstate Locations With Truck Travel Reliability Measures That Indicate the Worst Reliability

I-10 near Canal Street
I-10 near Elysian Fields Avenue
I-10 near Lafitte Street
I-10 near Loyola Drive
I-10 near Mayo Boulevard
I-10 near Williams Boulevard
I-10 near Carrollton Avenue
I-12 near LA 21
I-310 near US 90
I-610 near Canal Boulevard
I-610 near Elysian Fields Avenue
US 90 B / Westbank Expressway near Terry Parkway

Figure 23. Interstate Locations with Truck Travel Reliability Measures that Indicate the Worst Reliability
Source: National Performance Management Research Dataset 2020

RPC System Reliability Targets and Measures for 2018 and 2019

Year	Interstate LOTTR		NHS LOTTR		Truck TTRI	
	Target	Actual	Target	Actual	Target	Actual
2018	81.68%	81.3%	86.8%	85.8%	1.51%	1.57%
2019	81.65%	79.8%	86.8%	85.6%	1.51%	1.59%

Table 21. RPC System Reliability Targets and Measures for 2018 and 2019 Source: National Performance Management Research Dataset 2020

RPC system reliability targets and measures for 2018 and 2019 are listed in Table 21. In both 2018 and 2019, actual performance was below targeted performance for all three reliability measures.

ROAD/TRUCK

Travel Time Reliability

The 2018-2022 system reliability targets were derived from prior year performance and based on an assumption that measurements would not significantly change from year to year. As illustrated in Figure 24 and Figure 25, the targets followed a general trend seen in data through 2017, which was the latest available at the time targets were set.

Reliability decreased between 2017 and 2018, and again between 2018 and 2019, suggesting several courses of action for the RPC. First, measures will continue to be monitored to establish trends. To date, targets were set on a limited dataset from a relatively short period of time, and a longer period of analysis will allow for more accurate target-setting. Second, the RPC will consult with stakeholders to determine if the current targets should be adjusted. Targets will be considered and adjusted concurrently with the next Metropolitan Transportation Plan (long range plan) in 2021-2022. Third, and most importantly, the RPC will continue to identify strategies and projects that will improve system reliability on the Interstate and Non-Interstate NHS.

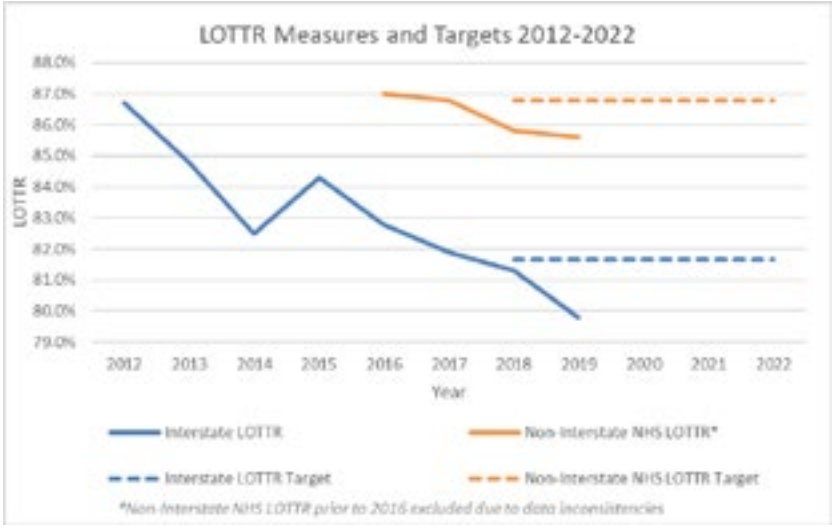


Figure 24. Source: National Performance Management Research Dataset (NPMRDS) 2020

Figure 25. Source: National Performance Management Research Dataset (NPMRDS) 2020

SPEED AND RELIABILITY

The data that is used to produce reliability measures also allows the RPC to monitor travel speed and travel time on major roadways. While reliability measures are based on travel time, it is important to note that the most unreliable road segments are not necessarily those with the slowest speed. Some roadways may have consistently high congestion with very low speeds but may be considered reliable because the congestion occurs at predictable intervals. In fact, some of the region's interstate segments with the lowest average speeds are not on the list of most unreliable segments (Figure 26). These segments are reliably slow and congested. These include critical locations such as US 90 in the New Orleans Central Business District and the Crescent City Connection Bridge. You can find more information about how LOTTR and TTRI are calculated in Appendix E.

ROAD/TRUCK

Hauls

TRUCKING TONNAGE & VALUE

Trucking plays a large role in the movement of freight and represents one of the quickest, most readily available, and flexible parts of intermodal freight movement. The growth in e-commerce sales over the last decade - and particularly over the last year during the coronavirus pandemic - clarifies the value and essential role that trucks play in delivering goods to local stores and homes.

View of I-610 road traffic from the Wisner Bridge overpass in New Orleans

The third quarter 2020 e-commerce estimate increased 36.7% ±2.1% from the third quarter of 2019 while total retail sales increased 7.0 ± 0.4% in the same period.[32]

As of 2018, trucks moved a combined total of approximately 99,347 K-Tons in and out of the New Orleans region.[33] This was ~22% of all freight tonnage moving through the region and worth approximately 85 billion dollars.[34] Top commodities originating in the region departing on a truck were gravel, gasoline, basic chemicals, fuel oils, and natural sands.[35] Top commodities arriving to the region by truck were gravel, gasoline, crude petroleum, basic chemicals, nonmetal mineral products, and other foodstuffs.

Per the Freight Analysis Framework's estimates, by 2045 the amount of tonnage moving by truck in and out of the New Orleans region will generate over an estimated 119 billion dollars annually.[36] This increase in freight trucking tonnage and value will have impacts on the entire flow of freight and the condition of the region's surface roadways, including along our highways, freight access roads, and urban centers shared by all road users.

Figure 26. Truck Travel Time Reliability

ROAD/TRUCK

Regulation

I-10 Weight Station near LaPlace, Louisiana

TRUCK SIZE AND WEIGHT LIMITS

Although trucking performance and capacity is affected by congestion and other physical infrastructure conditions, it is also affected by the regulatory environment.

Permitting for truck size and weight limits not only are required to meet federal safety standards, but also have implications for the movement of freight through the region. Both size limits and weight restrictions help ensure the safety of trucks along our roadways. Restrictions on size ensure safety and the ability of trucks to maneuver alongside other vehicles, pedestrians, and bicycles, while ensuring they can turn and park safely. Load restrictions protect the integrity of pavement, bridges, and structures within a community, like homes, businesses, and other buildings.[37]

The LADOTD is the regulatory agency that approves oversize and overweight truck permits through an on-line application process. A maximum weight limit is set by axle for regular operations and for exemptions and special operations, as detailed in Appendix D. Vehicle classifications are standardized into 13 classes as shown in Figure 27.

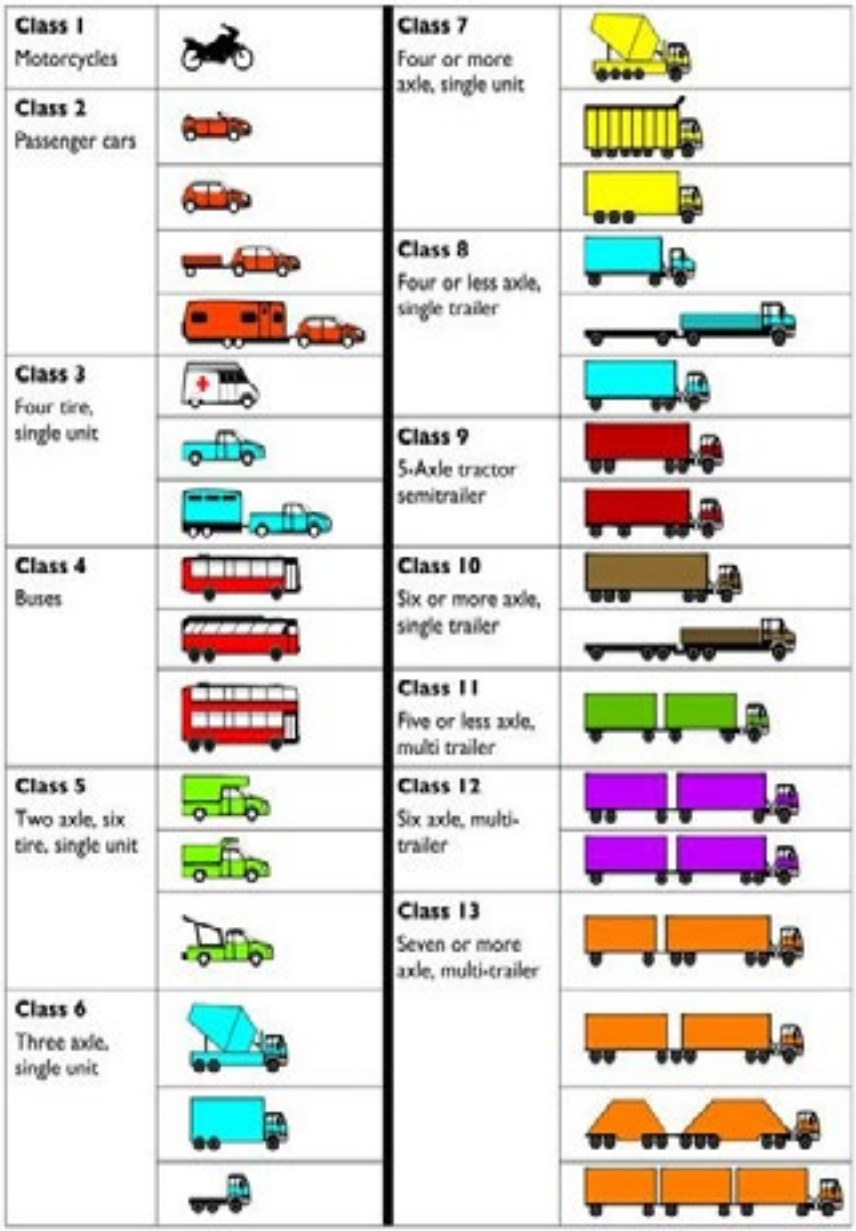


Figure 27. Federal Highway Administration Vehicle Classifications

ROAD/TRUCK

Regulation

Statewide permit data was obtained for the years 2016, 2017 and 2018. (Data was not available at the parish level.) The number of statewide approved overweight permits rose each year, rising 6.7% from 2016 to 2017 (105,524 to 113,112, respectively) and 4.7% from 2017 to 2018 (118,778 overweight permits).[38] (Figure 28)

Monthly oversize load permits ranged from 4,944 in December 2018 to 7,724 in August 2018.[39] (Figure 29) Monthly overweight load permits ranged from 8,933 in December 2018 to 11,510 in August 2018.[40]

A breakdown of the total number of oversize and overweight permits attributable to the 8-parish New Orleans region is not available, but a proportionate share would be reasonably credited to the SE Louisiana river parishes, where large and heavy loads are transferred at the Port of St. Bernard, the Port of South Louisiana and Port NOLA, as well as the Class I railroad intermodal yards in the region.

State Police conduct enforcement activities on Interstate and State routes, a select subset of all roads, which indicates the total number of unpermitted overweight trucks on all Louisiana roadways is underestimated, including those operating in the New Orleans region. They ancedotally report that 4 out of 5 trucks stopped by a State trooper each day are overweight and driving without an overweight permit.[41]

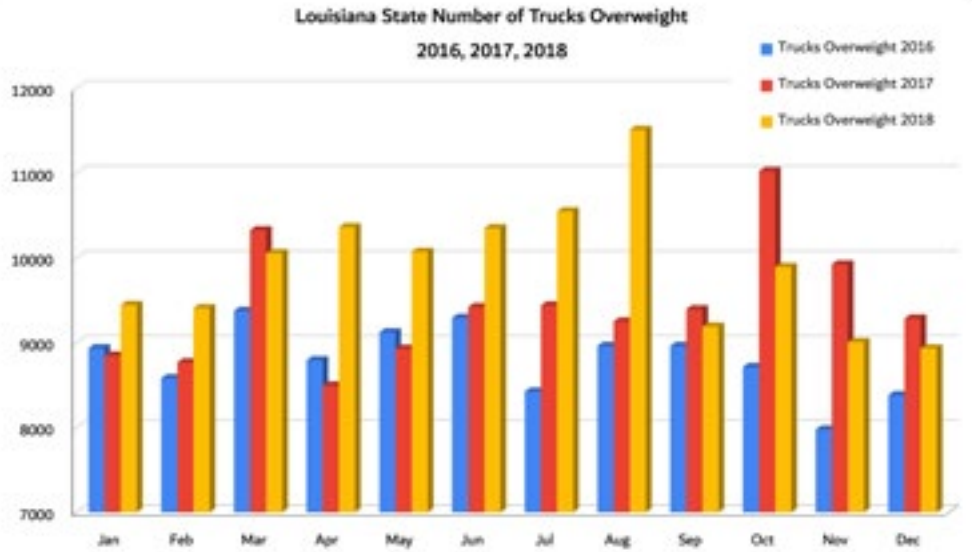


Figure 28. Overweight trucks permitted 2016-2018

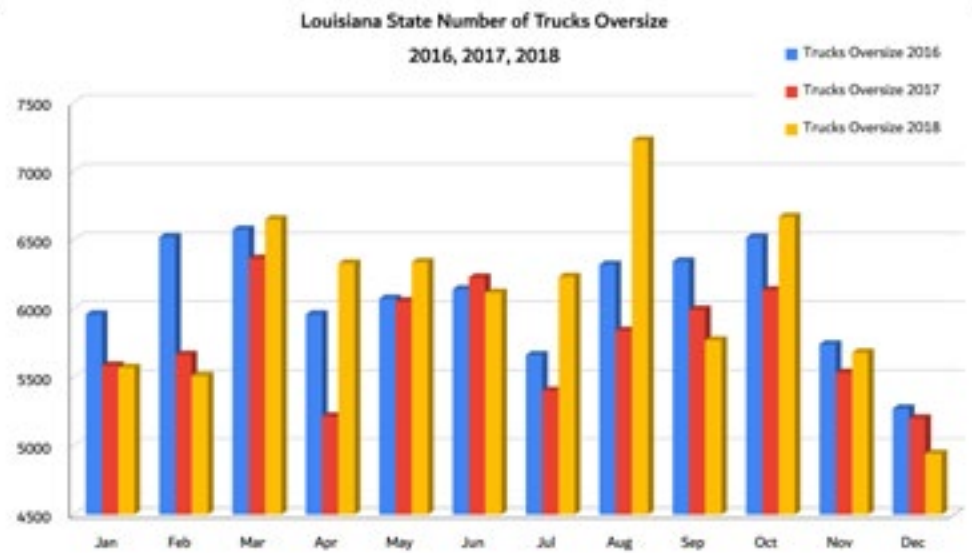


Figure 29. Oversize trucks permitted 2016-2018

ROAD/TRUCK

Regulation

FEES

In 2019 the Louisiana legislature modified fees and issuance of special permits for oversize and overweight vehicles and created the dedication of a certain portion of the fees to roadway infrastructure to help repair damage to roadways.[42] Special permit fees for oversize and overweight vehicles uniformly increased by 50% for all classes of vehicles and all categories of weight and distance. The legislature removed a fifty-mile radius limit from a port or harbor district. In addition, the legislative modifications allow the Louisiana Secretary of Transportation to establish routes for any owner or operator who receives an oversize/overweight permit and may revoke the permit of any owner or operator that fails to adhere to the route designated by the Secretary.

Annual commercial vehicle permit issuance and fees were also changed. Now, a biannual permit (2 times per year) is necessary and the cost has effectively been increased 50% for a year. (previously $500 annually-now $375 biannually or $750 total annual cost).

Multiple entities are focused on public safety and work together to assure that freight and freight movements adhere to local, State and federal laws. Disabled vehicles and crashes can congest a roadway, creating unsafe conditions. Crash incidents are often preventable if all laws are followed.

LOUISIANA STATE POLICE

The Louisiana State Police, operating under the auspices of the Louisiana Department of Public Safety and Corrections, plays a large role in enforcement on Louisiana highways. The Louisiana State Police have a Commercial Vehicle Enforcement Division (CVED) to conduct roadside and station safety inspections and gain compliance on all FMCSA rules including commercial vehicle towing and storage, hazmat and mobile weight enforcement.

State Police Troop B vehicle

They issue tickets for unsafe operation of a vehicle, unsafe vehicle conditions and are responsible for completing crash reports at the scene of an incident on roadways. In addition to helping drivers negotiate road closures and enforcing weight and oversize limits for trucks, they have a hazmat hotline to quickly respond to roadway incidents involving hazardous materials. The State Police work with local and parish emergency preparedness offices on hurricane evacuation and re-entry protocols.[43] Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles and St. John the Baptist parishes are served by State Troop B. Within the 8-parish region represented by the Regional Planning Commission St. Tammany and Tangipahoa Parishes are served by State Troop L which also serve Washington and St. Helena parishes.

Operations and maintenance of the stationary weight enforcement scale locations will be transferred from the Department of Public Safety and Corrections to LADOTD effective July 1, 2022. This will help integrate weight station maintenance with the work of the LADOTD Truck Permit office and LADOTD engineering tasks. State Police will continue mobile enforcement duties.

ROAD/TRUCK

Safety

DRIVER HOURS OF SERVICE (HOS)

Long periods of time behind the wheel cause fatigue and impact driving behavior of commercial vehicle drivers. The FMSCA established hours of service (HOS) regulations to limit when and how long a driver may operate a commercial motor vehicle. This helps to ensure the safety of drivers and the driving public.

Restrictions ensure drivers get the rest they need but it limits the number of hours available to move freight from origins to destinations. The HOS provisions, enacted on December 16, 2014, are summarized here.[50]

Drowsy driving is a safety concern

SUMMARY OF HOURS OF SERVICE FOR PROPERTY-CARRYING DRIVERS

11-Hour Driving Limit: May drive a maximum of 11 hours after 10 consecutive hours off duty

14-Hour Limit: May not drive beyond the 14th consecutive hour after coming on duty, following 10 consecutive hours off duty. Off-duty time does not extend the 14-hour period

Rest Breaks: May drive only if 8 hours or less have passed since end of driver's last off-duty or sleeper berth period of at least 30 minutes (short-haul exceptions apply)

Sleeper Berth Provisions: Drivers using the sleeper berth provision must take at least 8 consecutive hours in the sleeper berth, plus a separate 2 consecutive hours either in the sleeper berth, off duty, or any combination of the two.

As of September 29, 2020 FMCSA approved changes to the hours of service regulations:

Short Haul Exception: Expands the short-haul exception to 150 air-miles and allows a 14 hour work shift to take place as part of the exception.

Adverse Driving Exception: Expands the driving window during adverse driving conditions by up to an additional 2 hours.

30-Minute break requirement: Requires a 30-minute break after 8 hours of driving time (instead of on-duty time) and allows an on-duty or not driving period to qualify as the required break.

Sleeper berth provision: Modifies the sleeper berth exception to allow a driver to meet the 10-hour minimum off-duty requirement by spending at least 7, rather than at least 8 hours of that period in the berth and a minimum off-duty period of at least 2 hours spent inside or outside the bierth, provided the two periods total at least 10 hours, and that neither qualify period counts against the 14-hour driving window.

ROAD/TRUCK

Regulation

ELECTRONIC LOGGING DEVICES (ELD)

As of December 16th, 2019, the Federal Motor Carrier Safety Administration (FMCSA) required all commercial vehicle truck drivers to have electronic logging devices (ELDs) installed in their vehicles to record their hours of service (HOS).[44] Some on-board devices sync with the vehicle's engine and record the driving time automatically. Many fleets are using Electronic Record of Duty Systems (eRODS). (Figure 30) It is a satellite based tracking software system to document the route, the time on and off duty or in the sleeping berth and a complete trip history. These are often accompanied by in-cab cameras to oversee driver behavior and provide credible documentation when crashes occur for court defense. Company's must save this data to comply with FMSCA regulations and for a possible audit.

The FMCSA estimates that with full compliance of ELDs and mandatory HOS the trucking industry will save money by reducing time spent on self-reporting hours while increasing productivity and improving safety by dramatically reducing the number of crashes nationwide caused by fatigued commercial vehicle drivers.[45]

TRUCK STOP PARKING

There is a limited number of designated truck stop parking areas in the region; only 7 public and 35 private lots exist. (Figure 31, Figure 32 and Figure 33) With Hours of Service rules in place truckers must carefully align

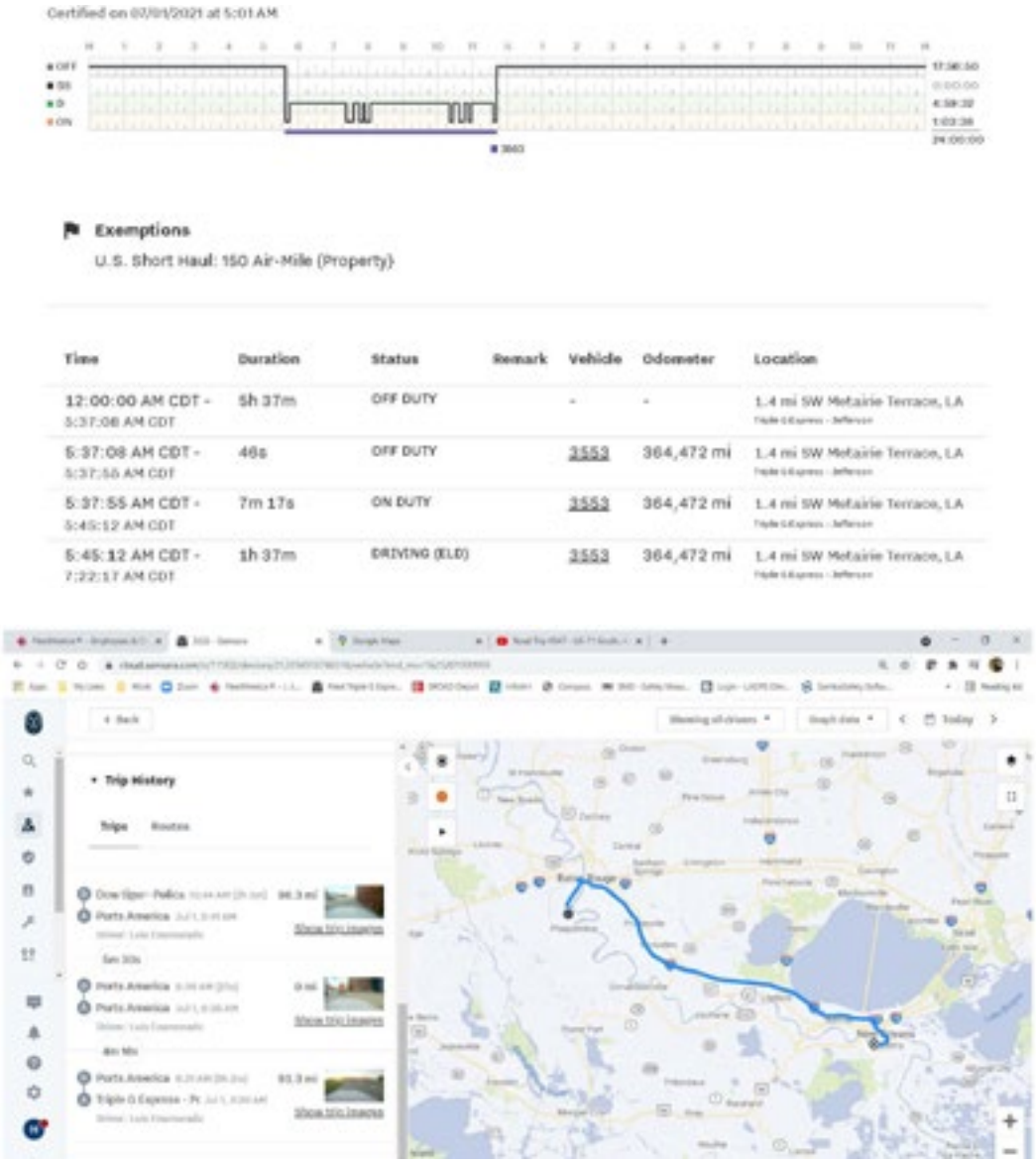


Figure 30. Example of one driver's Electronic Record of Duty Status (eRODS) used to track a driver's Hours of Service and Trip History through a Global Positioning System (GPS) Source: Triple G Express

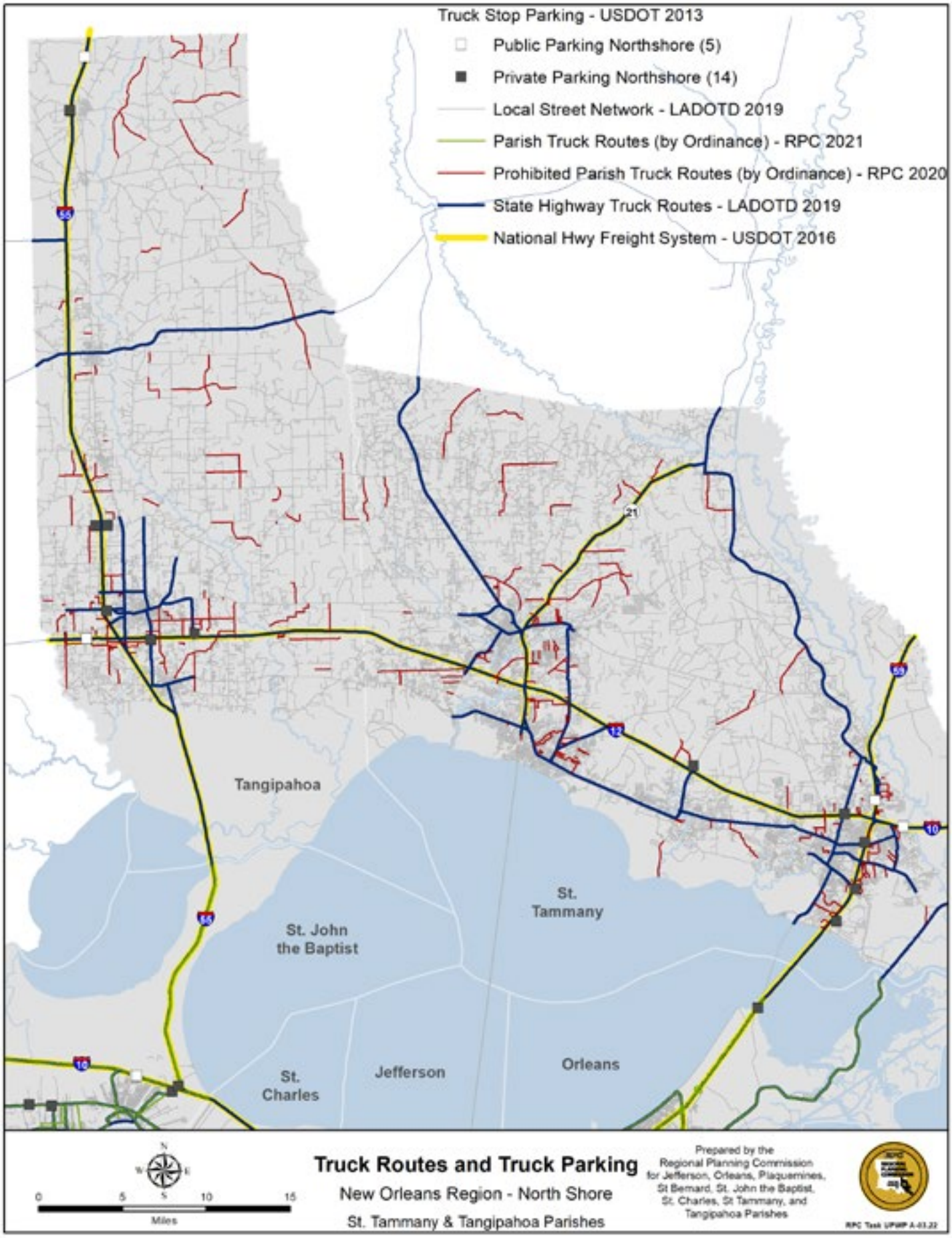


Figure 31. North Shore Truck Routes and Truck Parking

Figure 32. South Shore Truck Routes and Truck Parking

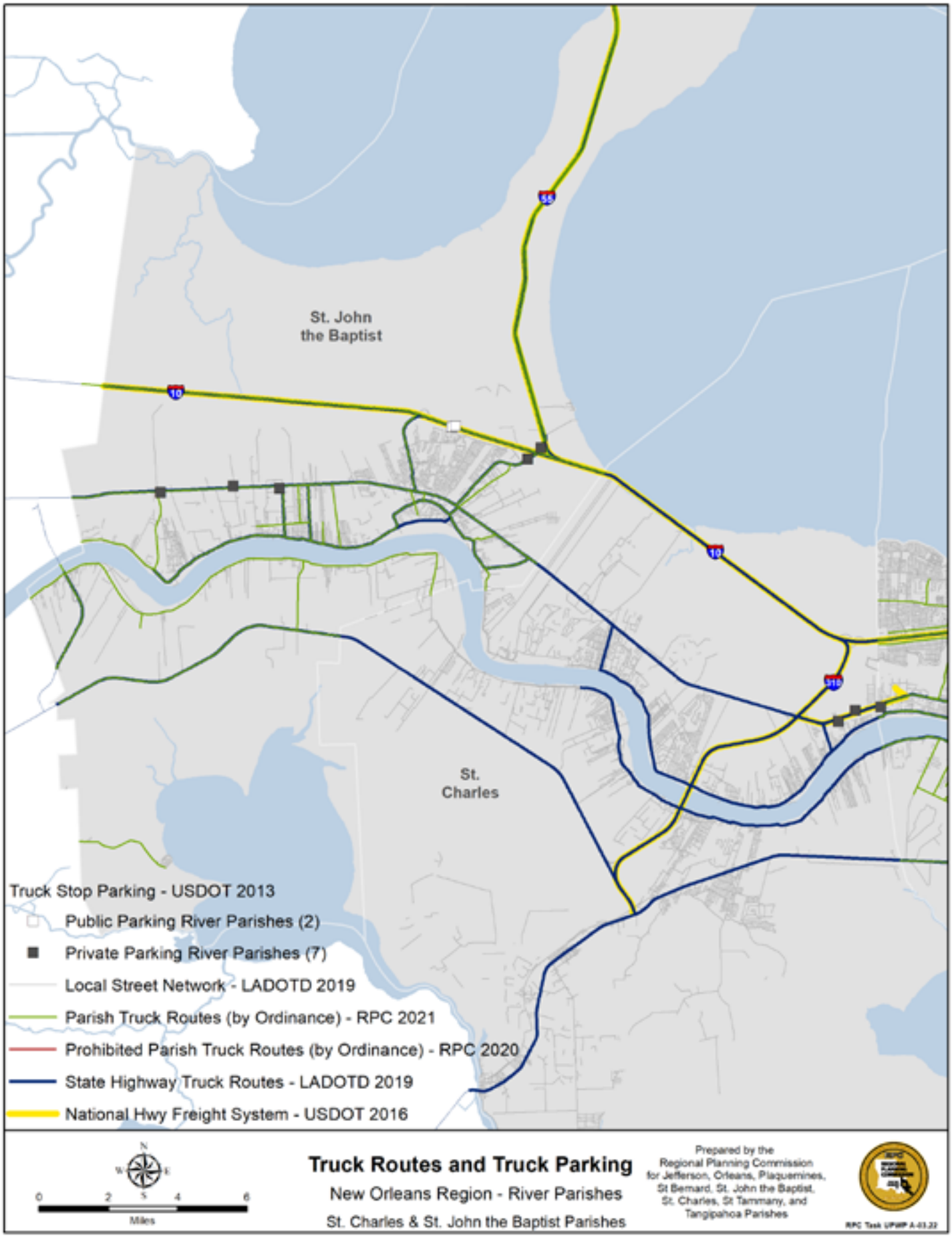


Figure 33. South Shore Truck Routes and Truck Parking

ROAD/TRUCK

Safety

Motorist Assistance Patrol tow truck

their routes and schedules with places to stay overnight, take rest breaks or stage for delivery. The low number of available parking areas is a major issue for business economics and safety. Parking is generally a local land use issue and most cities lack effective codes and regulations to accommodate and manage commercial truck parking needs.

MOTORIST ASSISTANCE PATROL (MAP)

MAP Patrol 2019		
Types Of Incident	New Orleans Region	Statewide
Accidents	5,539	8,214
Multi-Vehicle Crash	2,950	5,115
Overturned Vehicles	115	176
Vehicle Fires	312	396
Debris	1,783	7,965
Disabled Vehicles	21,676	47,869
Abandoned Vehicles	2,923	8,839
Other Incidents	3,491	10,494
Total Incidents	38,789	89,068
Miles Driven	77,578	178,136

Table 22. MAP Patrol Incidents 2019 Source: Louisiana Motorist Assistance Patrol

The Regional Planning Commission, in partnership with the LADOTD and local parishes, established a Motorist Assistance Patrol (MAP) in 1997. The MAP continues to steadily expand to include more mileage. The MAP oversees the I-10 and I-12 to provide rapid response to motorists needing assistance. Benefits accrue to all traffic, including truck traffic, because rapid removal of a roadway blockage facilitates the smooth flow of traffic, preserves intended roadway capacity, and removes distractions that can lead to crashes. Due to its initial success along I-10 in Jefferson Parish, MAP was expanded to include Orleans Parish in 2004. In 2017, MAP was extended upriver to cover St. Charles, St. John the Baptist, and St. James Parishes as well as the I-12 corridor in St. Tammany, and Tangipahoa Parishes, terminating at US 61 in Ascension Parish. MAP personnel assisted at 38,789 incidents in the region, with disabled vehicles being the highest category of vehicles in need (21,676) in 2019. Regional MAP drivers logged 77,578 miles in 2019 and 178,136 miles statewide by all MAP services.[46] (Table 22)

ROAD/TRUCK

Safety

COMMERCIAL VEHICLE CRASH DATA

Ensuring the safety of road users of the region's transportation system is the first priority of planning efforts at the Regional Planning Commission. The RPC is the lead agency coordinating the New Orleans Regional Transportation Safety coalitions, which implement and maintain Louisiana's Strategic Highway Safety Plan (SHSP). Louisiana's Strategic Highway Safety Plan is a data-driven approach intended to reduce transportation related fatalities and serious injuries 50% by 2030. In 2018, Louisiana ranked 7th in the number of fatalities per 100,000 in population among states. It was tied for 2nd for the highest number of fatalities per 100 million miles traveled.[47] Traffic fatalities and injury rates in Louisiana are higher than the national average, and the New Orleans region unfortunately has some of the highest fatality and injury rates in the state.

Multidisciplinary regional coalitions working on the North Shore and South Shore of Lake Pontchartrain, joined with State Police Troop B and L jurisdictions, respectively, develop local strategic highway safety plans that identify strategies in engineering, education, enforcement and emergency services targeted on five emphasis areas: distracted driving, impaired driving, infrastructure and operations, occupant protection, and young drivers. This mission extends to protecting people and freight assets across all modes.

In coordination with LADOTD, the RPC closely monitors vehicular crash data using the Center for Analytics and Research in Transportation Safety (CARTS) database at Louisiana State University. This includes tracking injuries and fatalities involving commercial vehicle truck (CMV) crashes. (Figure 34) The data is then used to identify locations and behaviors that need improvement. In 2018, the 8-parish region saw the first decrease in fatalities, injuries, and property damage only (PDO) crashes reported since 2014. Specifically, CMV related fatality crashes decreased 56.5% from 23 deaths in 2017 to 13 deaths in 2018.[48] These most recent data indicate gains from the efforts of law enforcement, roadway engineering, and education through the work of the RPC Safety Coalitions and the continued investment in safety.

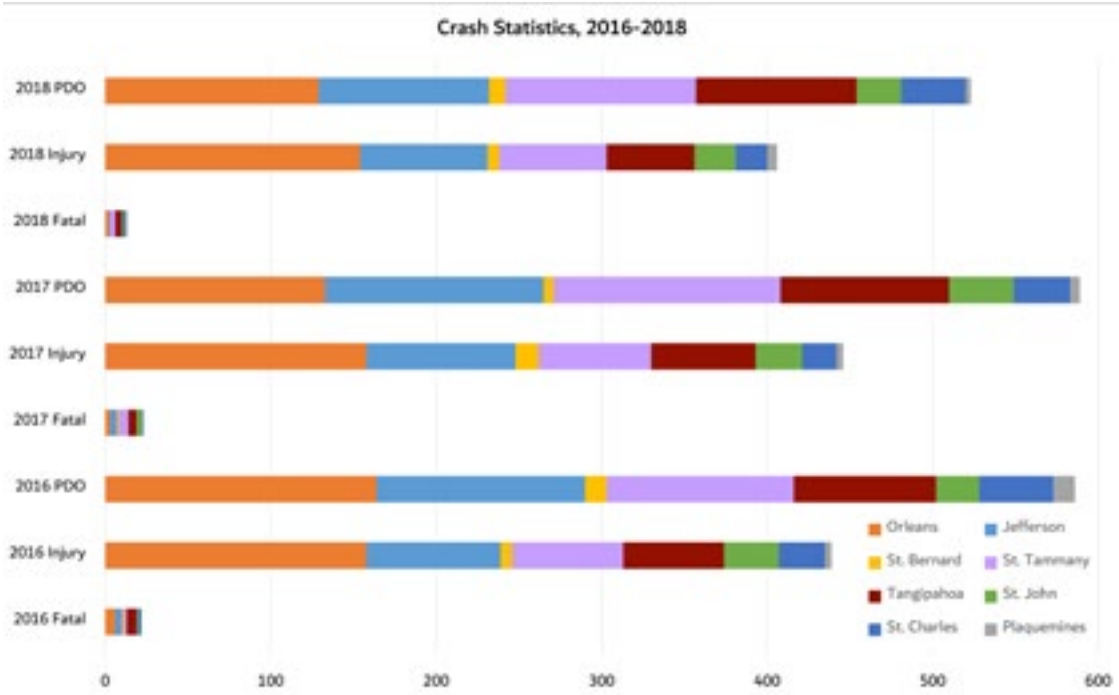


Figure 34. Commercial Vehicle Crashes, 2016-2018. Source: Louisiana Center for Analytics and Research in Transportation (CARTS)

Despite gains, commercial motor vehicle fleets note there is an inordinately high number of lawsuits and costly awards brought against them for crashes, which raise the cost of insurance across Louisiana and increase business risk.[49]

ROAD/TRUCK

Identified Challenges

Economic Competitiveness

·Insurance liability coverage premiums and litigation costs dramatically increasing

·Increased number of lawsuits and unusually high jury awards against commercial trucking companies

State of Good Repair

·Need more transparency over previously damaged containers and chassis to determine responsibility

Performance and Accountability

·Condition of infrastructure inconsistent

·Infrastructure maintenance under funded

·No new funding to invest in/accelerate port(s) highway access improvements

Advanced Technology

·Low awareness and slow adaptation to Connected and Automated Technology (state and local government, business, non-profits)

·Rapid technology change outpacing driver education

·Cost of autonomous vehicle technology and imperfect image recognition and interpretation by sensing devices thus far

·Optimatization through autonomous technology threatens future job market for truck drivers

Safety, Security and Resilience

·Too few drivers/growing demand

·Lower motor carrier wages compared to maritime, rail and pipeline jobs

·Too few designated and secure rest areas to help truckers meet HOS regulations

-Little attention is given to parking for urban truck deliveries

Environmental

-Truck diesel emissions cause air pollution which increase air and ocean temperature

-Truck GHG emissions contribute the highest GHG among all modes (84.4% in 2018 per BTS)

·Costly conversion of high emission diesel engines to alternative fuel

·Low distribution and frequency of alternative fuel sites

·Unknown future access and availability of alternative fuels

Economic Efficiency

·Federal and State fuel tax insufficient

-Federal and State fuel tax is not indexed so dollar value has diminished over time

·Most chassis and containers are manufactured in China

· There is a need for an interoperable chassis pool

The categories of challenges are based on FHWA goals. Identified challenges in each category are created from RPC interviews, observations, and general information for the purpose of regional freight planning going forward. This list is to be updated with stakeholder input.

Photo: US DOT

MARITIME

View of downtown New Orleans from the Mississippi River

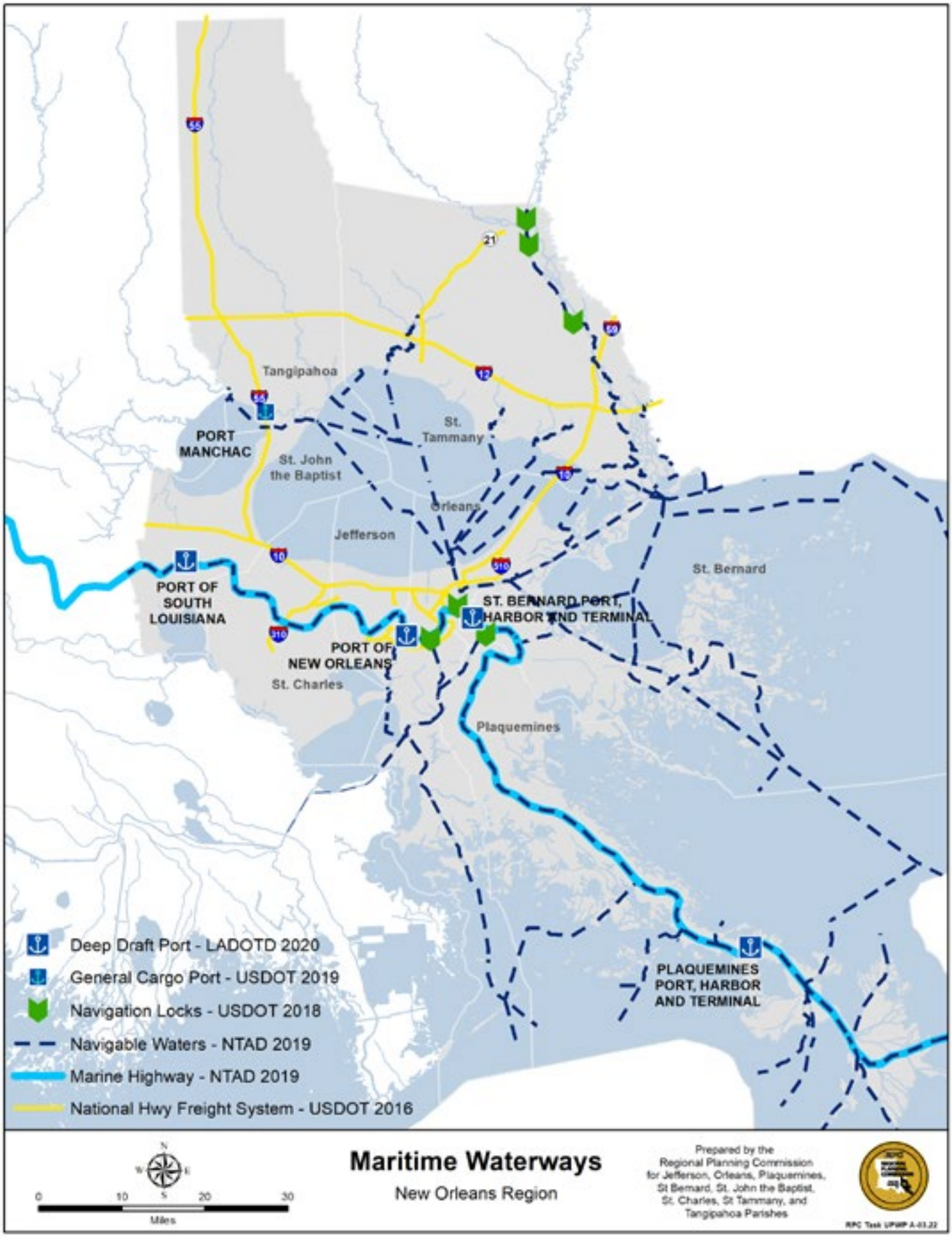


Figure 35. Maritime Waterways and Regional Ports

MARITIME

Tonnage and Commodities

The delta of Southeast Louisiana was created by the naturally changing course of Mississippi River waters over thousands of years. The Mississippi River is the heartbeat of the region, the reason for the establishment of the City of New Orleans and for its robust freight activity. It is a unique asset for trade and transportation both domestically and internationally, securing the New Orleans region as a significant component of the global freight network. (Figure 35)

OVERVIEW

Waterborne freight in the New Orleans region can be divided into two categories: domestic barge service on an expansive inland waterway network and international shipping through coastal ports.[51] In total, the Freight Analysis Framework reports the maritime industry moved 147,170 K-tons of cargo in and out of Greater New Orleans in 2018.[52] This is the largest percentage (32% of total tonnage) moving by mode in the region. By 2045, it is estimated that the maritime industry will be responsible for 37% of all the freight flowing through the region, handling ~187,542 K-tons of freight cargo, which is about 10% more tonnage than any other mode estimate.[53] Per the Freight Analysis Framework in 2018, the top commodities by tonnage originating in the region were coal-n.e.c (a standard industrial classification code for Not Elsewhere Classified), fuel oils, gasoline, basic chemicals, and fertilizers.[54] Top commodities coming to the region by maritime vessels were cereal grains, other agriculture products, coal-n.e.c. , crude petroleum, fuel oils, gasoline, goals, and gravel.[55] (Figure 37)

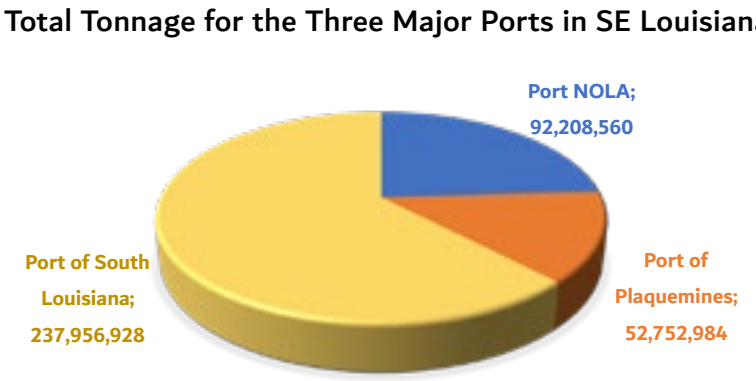


Figure 36. Total Tonnage Port of So LA, Port NOLA and Port of Plaquemines, 2019
Source: Bureau of Transportation Statistics, Port Profiles

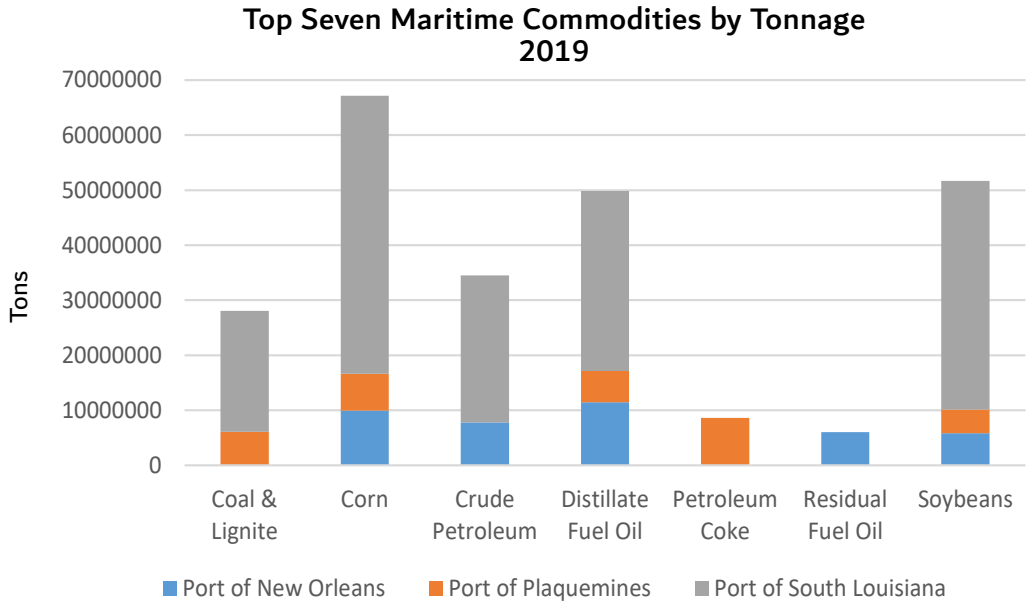


Figure 37. Top Maritime Commodities by Tonnage for Port of So LA, Port NOLA and Port of Plaquemines, 2019 Source: Bureau of Transportation Statistics, Port Profiles

MARITIME

Ports

Crescent Pilot directing a cargo ship transiting the MS River

MARITIME COMMUNITY

The regional Maritime community is comprised of numerous players, each with a vital role to plan, move, and oversee freight movements. This section seeks to list and clarify those entities and explain their significance and responsibilities in the New Orleans region. The unique characteristics of the length and meandering path of the Mississippi River necessitates long transit times for vessels and careful coordination among agencies that are each critical to the well-being of safety, security, and commerce on the river. Their work is often unseen and unheralded although undoubtedly an essential part of an integrated and complex network that helps sustain the U.S. economy.

The RPC's region is home to five quasi-public ports, all of which are essential job hubs and critical intersections for freight flows for imports and exports across six continents. Port commissioners are typically seasoned business men and women involved in some aspect of the freight industry who volunteer their time to guide decision-making.

Note: The FAF4 regional data encompasses data for a larger region than is reflected in the Port Profile data. Both datasets are provided by the Bureau of Transportation Statistics.

PORT OF SOUTH LOUISIANA

The Port of South Louisiana encompasses 54 miles of Mississippi River frontage, serving large industrial complexes in St. Charles, St. John and St. James Parishes. It is the largest tonnage port in the Western Hemisphere.[56] The Globalplex Intermodal Terminal is the heart of the Port of South Louisiana's freight activities, utilizing a 335-acre maritime industrial park operated by Associated Terminals. Globalplex provides handling and storage for bulk, breakbulk, and is working to accommodate containerized cargos.[57]

In 2018 the Port of South Louisiana had 46,856 vessel calls, predominately dry bulk barge vessels.[58] In 2019 the Port of South Louisiana had 237,956,928 short tons of total throughput (down from 275,557,702 short tonsin 2018).[59] This is the highest volume of the three regional ports tracked by the Bureau of Transportation Statistics. (Figure 28). The Port of South Louisiana is quickly becoming a key location for manufacturing, distribution, and logistics companies. The Port of South Louisiana is governed by a board of nine unpaid commissioners appointed by the Governor of Louisiana.[60]

Noranda Plant within the jurisdiction of the Port of South Louisiana. The plant converts Jamaican bauxite into alumina, the raw material for making aluminum.

Large Cargill grain elevator with grain chutes to load cargo vessels at the Port of South Louisiana

MARITIME

Ports

Port NOLA Intermodal activity at uptown Napoleon Avenue wharf

PORT NOLA

Port NOLA has a diverse profile with four lines of business – cargo, rail, industrial real estate and cruise terminal operations. The Port is the vital link between the Gulf of Mexico and major U.S. inland hubs like Memphis, St. Louis, and Minneapolis via the Mississippi River and through landside rail connections linking the New Orleans Public Belt Railroad (NOPB) to all six Class 1 railroads that fan out from New Orleans. The Board of Commissioners of the Port of New Orleans consist of seven unpaid individuals, appointed by the Governor of Louisiana.[61]

In early 2018, the City of New Orleans and Port NOLA created a mutually beneficial exchange. The City, which owned the New Orleans Public Belt Railroad since its establishment in 1904, agreed to exchange the NOPB assets for two Port NOLA-owned wharves, the Governor Nicholls and Esplanade Avenue wharves in the French Quarter and Marigny neighborhoods.[62] (The City intends to redevelop the waterfront wharves as the final section of a 3-mile riverfront park beginning at the Spanish Plaza and ending at Crescent Park.)

The change in ownership, along with a 2012 federal grant which helped reconfigure the dockside NOPB rail intermodal track, has improved integration of multi-modal operations. The NOPB is now a non-profit subsidiary of the Board of Commissioners of Port NOLA.

Port NOLA is a leader in green marine policies. They have reduced local drayage tailgate emissions through a truck replacement program and work to reduce trash in the waterways. In addition, Port NOLA is improving truck throughput time on site, reducing emissions.[63]

PORT NOLA
THE PORT OF NEW ORLEANS
CLEAN TRIP
CLEAN TRUCK REPLACEMENT INCENTIVE PROGRAM

Port NOLA Clean Trip logo

Strategic Planning

As a result of a major strategic planning process, Port NOLA identified the need to berth newer, mega sized vessels that can not be accommodated at existing wharves. The Crescent City Connection Bridge with a clear height of 170' is a deterrent for vessels larger than 10,000 TEU's. The ship MSC Pusan C at

MARITIME

Ports

9,572 TEU's, is the largest container ship to sail into Port NOLA, arriving October 2019.[64] The other major deterrent to accommodating mega ships at the existing port wharves is provision of a consistent river depth (through dredging) of up to 55 feet. However, Port NOLA can deepen harbors within its jurisdiction, using a port owned dredge.

Multiple satellite downriver locations were explored within the Port's 3-parish jurisdiction (Orleans, Jefferson and St. Bernard) that could provide a berth for three mega ships of 18,000 to 20,000 TEU's. As a result of the investigation a 1100-acre site was purchased near Violet, LA in St. Bernard Parish in December 2020 with plans to open in 2027. The location will support value added manufacturing and warehousing.[65]

Port NOLA had 25,585 vessel calls in 2018 and 24,078 in 2019. This reflects a modest drop in traffic across the region in 2019. There were 527 container vessels and 690 dry bulk cargo vessels in 2019. The port hosted significant barge vessels including dry bulk barge and other freight barge, totalling 22,072 vessels. (Figure 38) During 2019 a total tonnage of 92,208,560 short tons throughput were moved.[66] (Figure 36)

The Port NOLA suffered a severe drop in cruise vessel traffic and lost revenue during the COVID pandemic. There were 270 calls in 2019 (pre-covid) and only 77 calls through March 2020. Cruise traffic is set to restart in late September 2021. Freight loads servicing the cruise vessels were similarly reduced.

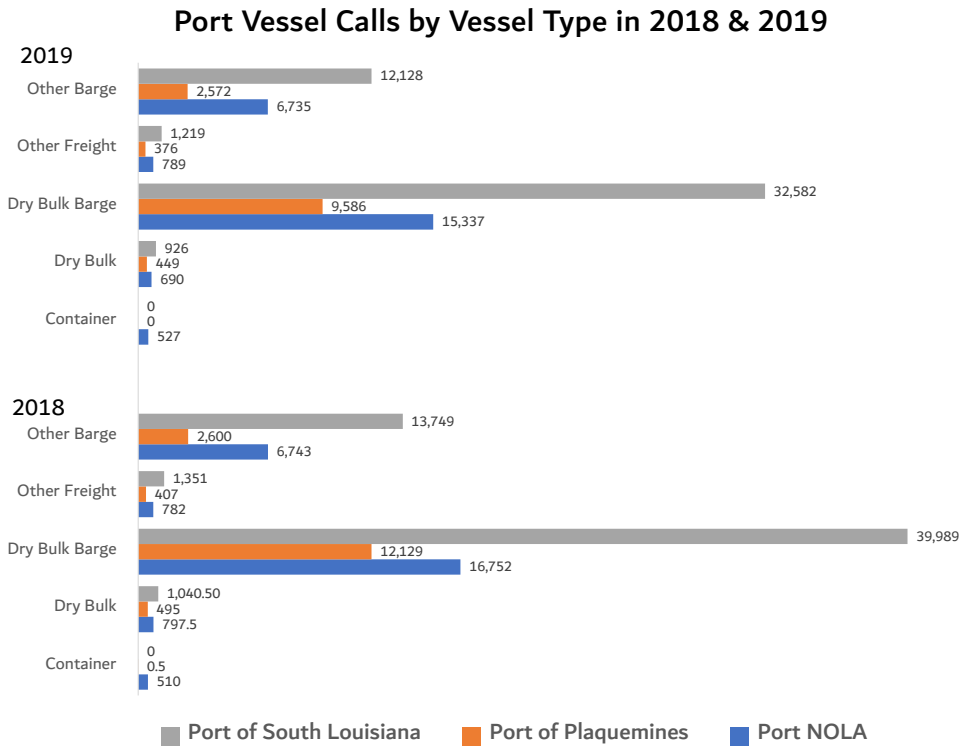


Figure 38. Port Vessel Calls by Vessel Type 2018 & 2019. Source: Bureau of Transportation Statistics, Port Profiles

ST. BERNARD PORT, HARBOR, & TERMINAL DISTRICT

Located 5 miles south of New Orleans between LA 46 and the MS River, St. Bernard Port, Harbor, & Terminal operates 430 acres of intermodal facilities along the Lower Mississippi River. In 2017, St. Bernard loaded and/or unloaded over 7.6 million tons of cargo including essential raw materials like metallic ores and minerals, coke, coal, and fertilizer.[67] In 2018 and 2019 the port had 365 and 372 total ship calls, respectively and 5,291 and 5,371 barge calls. Total Cargo Tonnage was similar for both years at 8.6M short tons, the majority being dry bulk. The St. Bernard Port, Harbor, & Terminal District is made up of eight unpaid commissioners who are appointed by the Governor of Louisiana.[68] The Norfolk Southern Railroad serves the facility.

PLAQUEMINES PORT HARBOR AND TERMINAL DISTRICT

MARITIME

Ports

Chalmette Slip at the Port of St. Bernard Photo: Port of St. Bernard

The Plaquemines Port has increased its port owned land around milepost (MP) 45 on the Mississippi River but represents more than 100 miles of deep draft bulk and break bulk operations scattered along the Plaquemines Parish shores, which function as the doorway between the Mississippi River and the Gulf of Mexico. The Port of Plaquemines moved 56,850,137 short tons in 2018 and 52,752,984 short tons in 2019 (Figure 36), with a total of 15,631 vessel calls in 2018 and 12,983 vessel calls in 2019 (Figure 38), mainly consisting of dry bulk barge vessels.[69] Primary cargoes include petroleum products, heavy minerals, coal, and grains.[70]

The Board of Commissioners is made up of the nine elected council members of Plaquemines Parish and can serve only 2-four year terms. No compensation, above Council salaries, is paid for Port commission duties.

The Port of Plaquemines is advancing large scale plans to develop two thousand acres purchased in 2019, to include container sites and ship wharves that accommodate Liquid Natural Gas (LNG) carrying ships and container vessels.[71] The port is working on using fast, shallow draft vessels to move containers to sister ports along the MS river.[72] In July 2021 the Port Authority voted to extend the rail track (currently ending around MP 58) approximately 10 miles to a 1000 acre site in order to begin the Container Port project.[73]

In addition, the Port of Plaquemines is attracting liquid and gas energy operations, particularly two new Liquid Natural Gas (LNG) facilities, in response to global demand for LNG. The port is served landside by state route LA 23 and the New Orleans Gulf Coast Railroad on the west bank to approximately river milepost 58. The Norfolk Southern Railroad serves the Braithwaite area in Plaquemines Parish on the east bank.[74]

Lower Mississippi River vessel traffic in Plaquemines Parish

MARITIME

Ports

Plaquemines Port is the closest energy port to deep water, in relation to the Panama Canal and other Latin American ports, making it an advantageous location for LNG transport.[75]

Ship pllot and crew direct ship from the bridge deck on lower Mississippi River

PORT MANCHAC

Port Manchac operates as a shallow-draft port on the northwestern shore of Lake Pontchartrain in Tangipahoa Parish. This 140 acre facility is served by the Canadian National Railroad and Interstate 55. It is an intermodal terminal that is capable of transloading bulk, break bulk, neo bulk (subcategory of general cargo such as cars, lumber and heavy machinery) and containers. In the past it has facilitated

Barge traffic on the IntraCoastal Waterway
Photo: Louisiana Encyclopedia Britannica

View of container ship at berth at the Port NOLA Photo: Port NOLA

MARITIME

Waterway Management

barge activity across Lake Pontchartrain and through the Inner Harbor Navigational Canal. It is presently used a storage facility for bulk truck and rail traffic predominantly for chemical transport. The South Tangipahoa Port Commission has a seven member, unpaid board appointed by the Governor.[76]

WATERWAYS

Marine traffic is the dominant mode moving freight in the region. The region's waterways and ports connect major domestic markets in the Midwest with international origins and destinations across the world.[77] There are approximately 987.41 miles of navigable waterways throughout the eight parishes. This consists of several major marine corridors.

MISSISSIPPI RIVER

The Maritime Administration designated the National Marine Highway for the purpose of bringing attention to the significance of the Mississippi River. Up to 168.13 miles of the Mississippi River in the greater New Orleans region are part of the National Marine Highway.

GULF INTRACOASTAL WATERWAY

In addition to the Mississippi River, the Gulf IntraCoastal Waterway (GIWW) runs through the region. It is a protected marine waterway for vessel traffic between Carabelle, Florida and Brownsville, TX. It is created from segments of inland (brown water) and coastal (blue water) to serve east-west traffic lanes within or near the coastline for small commercial movements and pleasure craft.[78]

Inner Harbor Navigational Canal lock

INNER HARBOR NAVIGATIONAL CANAL

The Inner Harbor Navigational Canal (IHNC) was built in 1923 as a maritime connection between Lake Pontchartrain and the Mississippi River. It is 7 miles long and represents a short segment of the GIWW.

MISSISSIPPI RIVER GULF OUTLET

The 36 foot deep Mississippi River Gulf Outlet (MRGO) channel was built in the 1960's east of St. Bernard Parish as a shortcut for sea shipping between the Gulf of Mexico and the GIWW.[79] Over time saltwater intrusion degraded the surrounding wetlands. After community pushback and scientific studies detailing the environmental impacts the MRGO had on coastal erosion and storm surge risks in the area, the MRGO was ordered to be permanently closed in 2006.[80]

LOCKS

The 8-parish region has six navigation locks; three are overseen by the US Army Corps of Engineers New Orleans District- located on the Inner Harbor Navigation Canal, the Harvey Canal, and the Gulf Intracoastal Waterway. The other three are overseen by the US Army Corps of Engineers Vicksburg District - all on the West Pearl River in St. Tammany Parish (lock #1 at mile 29.7, lock #2 at mile 40.8 and lock #3 at mile 43.9).

These locks were an integral part of South Louisiana's ability to grow and maintain freight commerce over the last century. In 2019, during high water events on the Mississippi River, the locks had to close temporarily, which negatively impacted commerce.[81]

Lock size, age, and condition are concerns for all locks. The Army Corps of Engineers estimates the average vessel time through the IHNC lock is 16 hours because the barge tow configurations in use today exceed the locks dimensions, requiring "tripping" (disassembling tows and reassembling) on either side of the lock.[82]

Due to the MRGO closure, freight commerce along the IHNC declined, leading Port NOLA to create the Port Inner Harbor Economic Revitalization Plan or PIER Plan to evaluate redevelopment of properties they own along the canal to bring back freight commerce as well as recreational facilities with access to Lake Pontchartrain.[83] Community resistance, however, remains strong to considering a replacement to the IHNC Lock. The area is highly urbanized, and there are concerns about the environmental impacts, traffic, noise, and eminent domain impacts of replacing the older

MARITIME

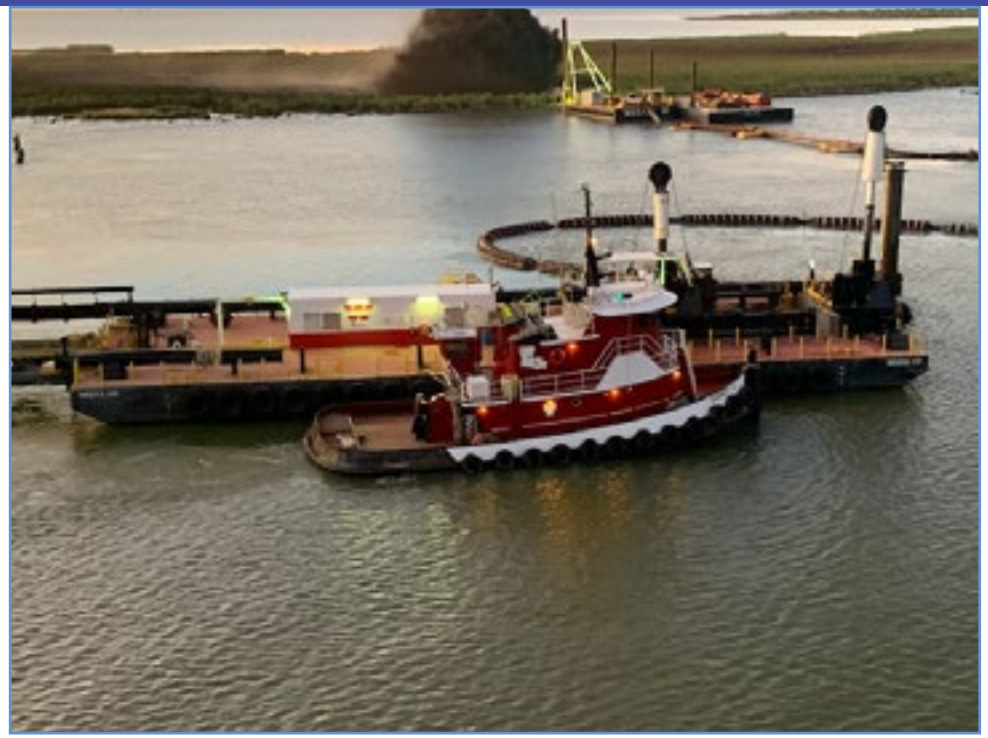
Waterway Management

lock.

WATERWAY MAINTENANCE

It is estimated that 16,792 cubic meters or 593,003 cubic feet of water per second are discharged from the Mississippi River into the Gulf of Mexico at the end of its 2,350 mile journey from Lake Itasca, Minnesota.[84] This water carries a significant amount of sediment as the river current scours the river bottom in some places and drops the scoured, sandy material in other locations depending on the complex natural characteristics of the river corridor. The river is fed by rainfall accumulated in tributaries from multiple basins located between the Appalachian and Rocky Mountains.[85]

Changes within the channel are highly impacted by short and intense or long duration rainfall events upriver, causing rising water levels and increased water volume and speed as it passes through New Orleans.[86] Infrequently, major hurricanes out of the Gulf of Mexico push sea water back into the river channel (storm surge), resulting in sedimentation inside the Mississippi River channel, ultimately degrading navigation until additional dredging can occur.[87]



Dredging operation with flume of sand as beneficial use /land creation near SW Pass

DREDGING

To facilitate commerce, the U.S. Army Corps of Engineers (USACE) works to stabilize the river banks and maintain a channel depth that provides safe clearance for ship passage on the Mississippi River by dredging the river to remove shoal material. The authorized depth and funding for dredging to maintain a consistent depth must be approved by Congress. The USACE dredging activity is paid from the Harbor Maintenance Trust Fund (HMTF), a tax imposed on import cargo owners based on the value of the cargo.[88]

U.S. Capitol Photo: Pinterest

A 55 foot deep channel was authorized by the Supplemental Appropriations Act of 1985 and by the Water Resources Reform Act (WRRDA) of 1986. However, as a political body, Congress has not appropriated all the HMTF available, leaving the USACE to make hard decisions about where to use limited funds.

The Big River Coalition was established in 2011 by a group of local maritime businesses and organizations. This delegation partnered with ten World Trade Centers along the Mississippi River to advocate for coastal restoration and for deepening the Mississippi River channel from 45 feet to a 50 foot depth. The concerted effort resulted in Section 2101 of WRRDA of 2014 defining increases in HMTF funding targets between 2015 and 2025, ending with 100% expenditure by 2025.[89] This authorizing legislation allowed Congress to

MARITIME

Waterway Management

U.S. Army Corps of Engineers Operations and Maintenance Budget, Mississippi River, Baton Rouge to Gulf of Mexico				
Year	President's Budget	Work Plan Add	Supplemental/ Additional	Total
2017	$82,884,900	$20,250,000	$10,000,000	$113,134,900
2018	$83,846,000	$15,000,000	$75,000,000	$173,846,000
2019	$89,169,000	$58,660,000	$96,300,000	$244,129,000
2020	$91,970,000	$154,088,500	$111,509,810	$357,568,310
2021	$64,000,000	0	0	$64,000,000
5-Yr Av	$82,373,980	$49,599,700	$58,561,962	$190,535,642

Table 23. Source: Army Corps of Engineers

increase funding for USACE dredging.[90]

In September 2020 the USACE, with LADOTD providing matching cost share funds, began deepening the channel to 50 feet between the Gulf of Mexico and MP 13 Above Head of Passes. Phase I is underway from the Gulf of Mexico to New Orleans. A dozen river crossings between New Orleans and Baton Rouge, where shoaling regularly occurs, will be dredged in Phase II.[91]

Supplemental appropriations are typically provided following major flood events and hurricanes to assist in recovery of waterways and

Cutter head dredge operating near SW Pass on the Mississippi River

MARITIME

Waterway Management

infrastructure. Funding is sometimes provided for other reasons, such as the 2009 American Recovery and Reinvestment Act intended for job preservation and creation, infrastructure investment, energy efficiency and science.

From FY 2017 to FY 2021 the annual President's Budget for the Mississippi River - Baton Rouge to the Gulf of Mexico Operations and Maintenance project - averaged $82 million. The previous 16 years (FY 2000 to FY 2016) averaged $65 million. Additional funding has also been increasing over the last 5 years years evidenced by the total annual average of $190 million whereas the previous 16 years was $94 million. (Table 23)

Bonnet Carre' Spillway opening Photo: Army Corps of Engineers

FLOOD MANAGEMENT

The USACE manages the Hurricane and Storm Damage Risk Reduction System (HSDRRS) to minimize the risk of flooding in the New Orleans region. It was completed in May 2018. The system consists of building and maintaining approximately 350 miles of levees, floodwalls, floodgates, and pump stations. Other flood control projects include: the Bonnet Carré Spillway that diverts Mississippi River flood waters into Lake Pontchartrain to the Gulf of Mexico, master drainage projects in four parishes called Southeast Louisiana Urban Flood Damage Reduction Project (SELA), and the ultimate control of the Mississippi River, the Old River Control Complex that prevents the river from changing course into the Atchafalaya Basin, located north of Baton Rouge.[92]

In addition, the USACE uses water height data collected by the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Geological Society (USGS) from gages affixed at target locations across American waterways to monitor and anticipate the flow and magnitude of water moving into the Mississippi River Basin. In the New Orleans 8-parish region, there are multiple streamgages on the Mississippi River and on interconnected river systems.[93] The information helps the Corps model and forecast dredging requirements,

Bonnet Carre' Spillway opening
Photo: Army Corps of Engineers

informing their Regional Sediment Management program. It also informs flood control and engineering projects by estimating water discharge and river velocity. As water levels rise on the Mississippi River, the water speed increases, creating more risk, and greater difficulty for vessels to navigate.

The river flood stage in the New Orleans region is 17 feet, and it was reached twice in 2019 requiring the Bonnet Carré Spillway to open each time to discharge excess water into Lake Pontchartrain to help manage the river flow and reduce risks to the levees and the community. The Bonnet Carre' Spillway was completed in 1931 and has been opened only 15 times.[94] Concerns are that climate change is creating more intense rainfall events over the tributaries of the Mississippi River resulting in more frequent higher mean river eleva-

MARITIME

Regulation, Safety and Security

Number of Ship Pilots and Jurisdictions on Lower MS River

Pilot's Association	Number of Pilots	River Mile Post
New Orleans-Baton Rouge Steamship Pilots Association	118	AHP 234 to AHP 100
Crescent River Port Pilots Association	118	AHP 105 to AHP 0
Associated Branch Pilots (Bar Pilots)	45	AHP 4.1 to BHP 21.8

Table 24. Number of Ship Pilots by Jurisdiction Source: Pilots Assoc.'s

tions. Throughout six months of 2019, the mean river height exceeded 16 feet at the Carrollton gage in New Orleans.[95]

SHIP PILOTS

There are three distinct regions of the River between Baton Rouge and the Gulf of Mexico that require additional pilotage to navigate ships traversing the dominating, and changeable Mississippi River. Local ship pilots with immense knowledge of the river are associated with three respective organizations that cover the length of this jurisdiction with some overlap.[96] (Table 24)

The New Orleans-Baton Rouge Steamship Pilots Association ranges the furthest north, beginning their jurisdiction approximately one mile above the Interstate 10 roadway bridge crossing of the Mississippi River in Baton Rouge and ending near the Algiers Lock in New Orleans.[97] The Crescent River Port Pilots Association overlaps with the New Orleans-Baton Rouge Steamship Pilots. Their territory begins at milepost 105 near the Huey P Long Bridge in Jefferson Parish and ends where three distinct channels of the Mississippi River branch out into the Gulf of Mexico at the point known as, "Head of Passes".[98] River mileage is noted as Above Head of Passes (AHP) or Below Head of Passes (BHP). The Associated Branch Pilots or Bar Pilots overlap for 4.1 miles with the Crescent Pilots between Venice, LA and Head of Passes. Their jurisdiction continues through the westernmost channel of the birds foot of the Mississippi River delta, known as the Southwest Pass, into the Gulf of Mexico - ending 21.8 miles Below Head of Passes.[99]

Ship pilots are trained and experienced mariners with US Coast Guard certification and typically have spent a portion of their career commanding vessels around the world.[100] Their occupation was established by the Louisiana State Legislature in 1837 to avoid loss of life from vessel collisions, ship groundings and other mishaps of unregulated navigation typical in early New Orleans history. Local ship pilots accompany and navigate foreign flags vessels unfamiliar with the channel through the fluctuating river dimensions and negotiate the increasingly busy vessel traffic from the Gulf of Mexico to Baton Rouge. Tariffs are set by the Louisiana State Legislature and are paid by the vessel owners.[101] Ship assignments rotate through the list of ship pilots. The work requires three-hour on-call avail-

Crescent River Port Pilot Associations' residence above Head of Passes

MARITIME

Regulation, Safety and Security

Monitoring stations at the Vessel Traffic Service Lower Mississippi River at Coast Guard Sector New Orleans

ability, lengthy hours, and often intermittent overnight work schedules due to 24-hour-a-day vessel traffic.

Three hurricane resistant multi-apartment residences (pilot towns) near the mouth of the river are in operation to house the overnight and extended workday needs of pilots. The Associated Branch Pilots have two residences. One is located at the end of Southwest Pass at the Gulf of Mexico and the other is located near Venice, Louisiana near the end of LA 23 highway. The Crescent Pilots' residence is just above the Head of Passes on the east bank of the River and can only be reached by water. These ease logistics by co-locating pilots near the mouth of the river for incoming vessels and provides a place of rest between assignments. Pilot residences further aid in resuming operations on the river after storms.

U.S. COAST GUARD

There are nine U.S. Coast Guard districts, with the largest being the 8th District, which encompasses 26 states that cover the Mississippi River and its tributaries. The U.S. Coast Guard Sector New Orleans is a significant maritime subarea within the 8th District. Over 300 Coast Guard personnel monitor and support U.S. and foreign vessel movements, facilities, and crews in Sector New Orleans. Each day, 90 to 125 foreign vessels transit through the Coast Guard area of responsibility (AOR), which includes over 100,000 nautical miles of water. Their jurisdiction on the Mississippi River begins at milepost 303 Above Head of Passes and reaches the U.S. Exclusive Economic Zone or EEZ boundary in the Gulf of Mexico, no more

U.S. Coast Guard inspection team
Source: U.S. Coast Guard website

Typical Aid to Navigation equipment on the Mississippi River

US Coast Guard cutter
Source: U.S. Coast Guard website

MARITIME

Regulation, Safety and Security

than 200 miles out.[102] While not all inclusive, their extensive AOR also includes 64 miles of Gulf IntraCoastal Waterway, the Atchafalaya River from mile marker 0 to 45, and 3980 miles of coastline between the Mississippi State line and Lake Charles, Louisiana.[103] All vessel types are tracked from cargo and tankers to cruise and other excursion craft. (Figure 39) Ferries, transiting multiple times a day, have the highest number of movements followed by tug and tow vessels reflecting the large number of barge movements on the lower Mississippi River.

The headquarters of the U.S. Coast Guard Sector New Orleans is located within Federal City in Algiers on the West Bank of New Orleans. There is an embedded active Vessel Traffic Service (VTS) which uses video technology to remotely observe activity on the river. The VTS monitors movements from the Govenor Nicholl Light, Gretna, Canal Street, Westwego and at river mile post 178, at 81 Mile Point. The movements at Wilkinson Point in Baton Rouge between MP 232 and 237 upriver, 81 Mile Point and Algiers Point are managed by the VTS. These are areas where vessel traffic is at highest risk due to congestion or difficult turning locations. Crescent and Baton Rouge pilots help man stations to provide local knowledge at the request of the Coast Guard 24 hours per day, 365 days a year.

The U.S. Coast Guard coordinates operations with Customs and Border Protection to assess threat risks and regularly boards and inspects various types of vessels, equipment and operations. They can stop and detain any that are deemed high risk, e.g. such as for operating unsafe equipment, carrying crew who are not

U.S. Coast Guard Annual Maritime Transit Counts 2018 Sector New Orleans

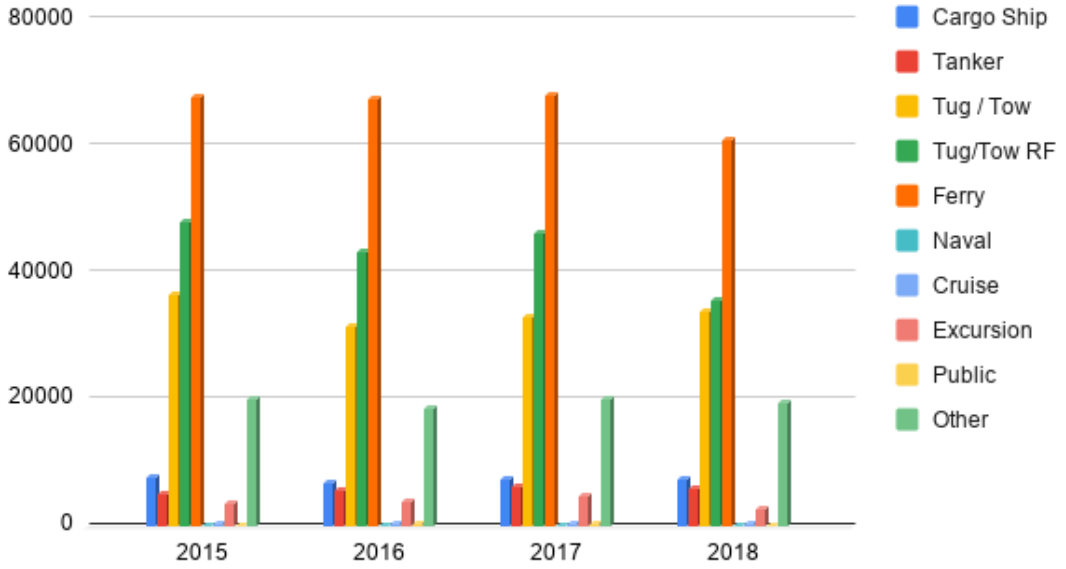
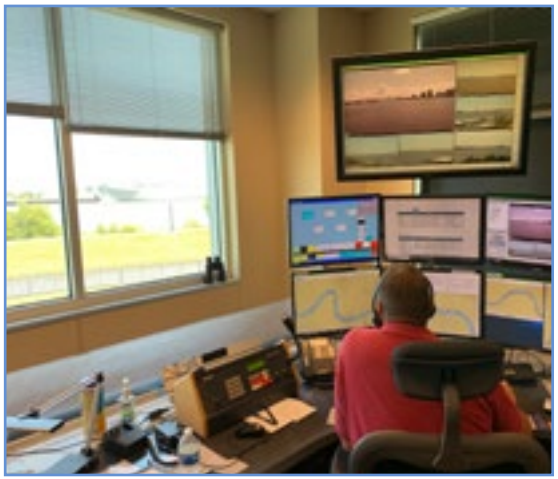


Figure 39. Source: U.S. Coast Guard Sector New Orleans



A monitoring station at the Coast Guard Sector New Orleans Vessel Traffic Service

cleared for travel to the U.S., or for potentially carrying pests that would endanger U.S. crops.[104]

Sector New Orleans tracks and maintains the condition of over 1,200 aids to navigation in its jurisdiction, inspects facilities along the river and conducts an average of 400 to 500 search and rescue missions annually. Given the importance of maritime activity in the Sector New Orleans Sector, the U.S. Coast Guard is an essential agency in the success of freight commerce.[105]

The U.S. Coast Guard Sector New Orleans reports that in 2018, the total annual transits

MARITIME

Regulation, Safety and Security

U.S. Customs House in New Orleans

Marine Interdiction Agents for U.S. Customs and Border Patrol Source: CBP media

on the Mississippi River numbered 167,156. This is down from a high of 190,469 in 2015.

U.S. CUSTOMS AND BORDER PROTECTION (CBP)

The U.S. Customs and Border Protection (CBP) agency is one of the nation's leading law enforcement agencies for freight. The agency became a part of the newly established U.S. Department of Homeland Security in 2003. Its function is to protect the nation's borders by stopping inadmissible people and the importation of illicit goods including narcotics, bulk cash, criminals and plants or pests that might harm the environment or food supply.[106] The goal of the organization is to secure legitimate trade and travel to help the U.S. compete economically on the global stage and prosper at home.[107]

There are three arms of Customs and Border Protection that work to integrate data using advanced analytics and good staff communication across the divisions to assess threats in a layered review process. They are the Office of Field Operations which review passengers and goods entering the U.S. via airport, port and cruise ship locations using advanced technology to scan and inspect persons and cargo; the U.S. Border Patrol, which is responsible for securing US. borders between ports of entry; and Air and Marine Operations (AMO) which focus on monitoring air and water entry from offices in Hammond (air) and Houma, LA and Gulfport, MS (marine).[108]

Illicit Radiation Detector

Office of Field Operations (OFO) is the central division headquartered in New Orleans at the Customs House on Canal Street along with the U.S. Border Patrol New Orleans sector headquarters. They are responsible for operations at the ports of New Orleans, Louisiana, Memphis, Tennessee, and Mobile, Alabama.

Important tasks of the Office of Field Operations are to protect international property rights by identifying and stopping counterfeit goods from entering the country. Customs Agricultural Specialists work with USDA to search vessels for pests, diseases, and contaminants that infest grains, wood boring

MARITIME

Regulation, Safety and Security

pests, noxious weeds, and animal diseases. The CBP scans all inbound containers and smaller packages for illicit radiation that may indicate malicious materials and intent. The Border Patrol arm of the CBP New Orleans Sector is responsible for monitoring approximately 28,000 square miles of land in 7 states. They protect the southern border from Panama City, Florida into Texas and cover over 200 miles of the Mississippi River.[109]

MARITIME EMISSIONS REGULATION

The International Maritime Organization (IMO) is a specialized agency of the United Nations responsible for establishing international legal regimes for maritime safety, security, and stewardship. Only countries can be members and there are currently 174 member states including the United States. The U.S. Coast Guard is the lead federal agency to the IMO. A new IMO emissions regulation to cut ship sulfur emissions limits from 3.5% to 0.5% went into effect January 1, 2020.[110] Carriers will install scrubbers, a device to remove pollutants from smoke produced by burning high-sulfur fuels, or switch to a low sulfur fuel option. Ports must prepare by ensuring compliant fuel oil is made available, as well as inspection tools and scrubber waste receivers. The nation where the vessel is registered is responsible for enforcement. Likely outcomes are that costs will be passed on to shippers. Experimentation with drones is in the works to measure and analyze ship fumes without boarding a vessel in order to enforce new standards.

GULF INTRACOASTAL CANAL ASSOCIATION (GICA)

Active 2004 and 2005 hurricane seasons brought together the inland barge industry with the US Army Corp of Engineers (USACE), US Coast Guard (USCG) and the National Oceanic and Atmospheric Administration (NOAA) to restore maritime commerce on the Lower Mississippi River south of Baton Rouge, the Intracoastal Waterway and its tributaries. The GICA is a working group that represents a broad range of participants with a vested interest in ensuring commercially navigable waterways are safely and efficiently closed and reopened near a storm event. The group formalized a response protocol for pre- and post-storm events and designated team members from federal safety, security, and flood control agencies, private sector operators and owners and non-profits.[111]

The tow and barge industry is uniquely positioned to solicit information or goods from customers and then supply critical cargo or vessel operation information that could bear on prioritization of shutdown and startup of the waterways, supply status reports of vessels secured along the waterway, expedite waterway restoration and begin vessel relocations as necessary. It also acts as a clearinghouse of information to help expedite the location of items for use by USACE and USCG after a hazardous event.[112]

Ship/Barge transfer of raw material at Port of St. Bernard Photo: Port of St. Bernard

MARITIME

Identified Challenges

Performance and Accountability

·Rapidly changing tariffs create challenges for 3rd party logistics across modes

·Port NOLA truck turns limited by congestion on US90B

·Port NOLA gate hours restricted due to labor costs

Advanced Technology

·There are two different and uncoordinated gate technology systems to access Port NOLA

Safety, Security and Resiliency

·Increased security threats increase CBP responsibilities for illicit goods, arms or biological threats at Ports of Entry

·Rapidly changing tariffs create market uncertainty

·Hurricane emergency response halts maritime movements

Economic Efficiency

·Mega ship efficiency decisions are independent of landside transport needs and operations

·Urbanization negatively impacts port landside expansion

·Labor is both unionized and non-unionized within the region creating uneven labor pricing

The categories of challenges are based on FHWA goals. Identified challenges in each category are created from RPC interviews, observations, and general information for the purpose of regional freight planning going forward. This list is to be updated with stakeholder input.

State of Good Repair

·Competition for limited State Port funding

·Dredging and Harbor Maintenance is underfunded

·High water and hurricane emergency preparedness increases maintenance costs

Environmental

·Ship diesel emissions cause air and water pollution which increase air and ocean temperatures

·Warmer ocean temperatures are instrumental in hurricane development and coastal flooding

·Costly conversion of high emission diesel engines to alternative fuel

Economic Competitiveness

·Air draft of Crescent City Connection bridge limits ship size traveling upriver to Port NOLA or Port of So Louisiana

·Port NOLA/truck moves have no western relief valve from Port; all traffic is funneled to US 90B

·No new funding to invest in/accelerate improvements for port access

·Fewer drivers delay box movements

·Hours for Union labor at Ports are not guaranteed and health insurance is dependent on number of annual hours

RAILROADS

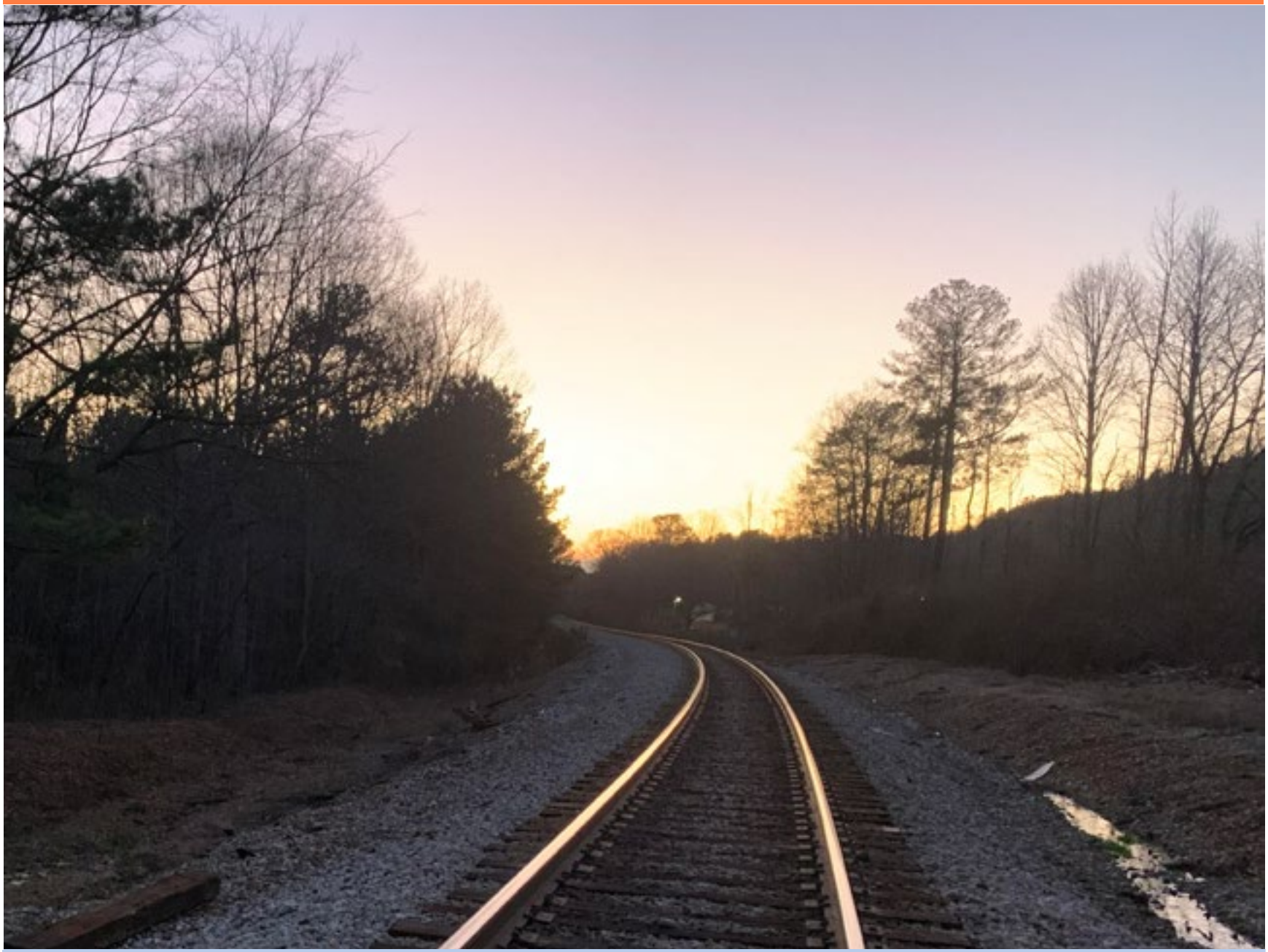


Photo: Dr. Rebecca Totten

RAILROAD

Overview

The New Orleans region has highly integrated rail activities due to its location as the southern most U.S. rail gateway crossing the Mississippi River. The railroads service local ports moving international and national freight and major industries. They connect across the U.S. to fairly defined service areas for each railroad but there are substantial overlaps that induce competition. Shortline railroads typically serve local customers and hand off carloads to Class I railroads for cross country delivery.

The CSX Transportation Railroad (CSX) and Norfolk Southern Railway (NS) operate mainly east of the Mississippi River. The Union Pacific Railroad (UP) and the Burlington Northern Santa Fe Railway (BNSF) operate mainly west of the Mississippi River. In the central U.S. there are three operators. The Kansas City Southern Railway (KCS) provides service between Kansas City and Mexico City. The Canadian National Railway (CN) operates throughout Canada and south through Chicago to Baton Rouge and New Orleans. The Canadian Pacific Railway (CP) provides service across Canada and south to Kansas City. The first tri-national railroad may be established in 2021 as the CP is working to purchase the KCS, extending their reach into Mexico. (Figure 40)

The Association of American Railroads (AAR) representing all classes of railroads supports a regulatory framework that encourages market-based competition and public-private research to enhance rail.

The private nature of most rail operations mean they reinvest revenues disproportionately to tax supported modes to build, maintain and operate infrastructure and equipment on their networks, averaging an estimated $25 billion per year between 1980 and 2020.[113] Unlike trucking, very little public funding is invested in the 140,000-mile network.

Figure 40. National Rail Network Map by J. Wayland (2021), NTAD (2021), https://www.arcgis.com/home/item.html?id=96ec03e4fc8546bd8a864e39a2c3fc41 (23 Sept 2021)

America's freight railroads are embracing technology to improve performance, safety and efficiency that help them compete in a fast changing environment. The growing awareness of harm from carbon emissions is triggering research into battery electric locomotives to potentially implement use on shorter, regional routes and supplement the existing fuel savings per ton-mile. Today freight trains can move a ton of freight around 470 to 490 miles on a gallon of diesel fuel, beating out their closest competitor, trucks.

Trains are best utilized moving large volumes long distances. The Association of American Railroads reports that moving freight by train instead of truck reduces greenhouse gas emissions by up to 75%.

Other energy saving systems are becoming more mainstream. These include the increased use of train idling technology that shuts locomotive engines off when stopped. The industry has steadily been improving tank and container equipment design to improve safety and reduce potential derailments.

Ongoing coordination with law enforcement/ intelligence agencies also plays an important role in responding to threats and addressing security concerns as a nationwide network.

RAILROAD

Networks

Of the 19 railroads that operate in the state, nine are located in the New Orleans region. The 8-parish region hosts six of the seven Class I freight railroads operating in North America, along with two Class III switching and terminal rail operators and one passenger service. Classifications are based on annual operating revenue with Class I being the highest revenue.[114] All are privately owned except the the New Orleans Public Belt (NOPB) and the National Railroad Passenger Corporation, better known as Amtrak.

The rail industry services 12% of the combined freight tonnage entering and exiting Greater New Orleans, and amounts to 4% of the region's economic gross impact.[115] In 2018, the top commodities by tonnage leaving and entering this region by rail were basic chemicals, chemical products, and plastics/ rubber.[116] Both tonnage and gross income from rail freight are expected to increase slightly over the next 25 years.[117]

There are 2,940 miles of freight railroad track in the State of Louisiana and the network of railroad track in the Regional Planning Commission 8-parish area totals 374.33 miles.[118] (Figure 41 and Figure 42) The CN has the most track with 125.19 miles followed by the NS with 71.4 miles of track. Railroads are predominately private corporations, traded publicly, and are a major actor in the freight transportation network.

Through contractual agreements railroads can provide: trackage rights (the owner allows another railroad use of their track), haulage rights (the owner uses their locomotives to move the other railroad's cars), or may lease

Track Mileage by Railroad in the New Orleans 8-Parish Region

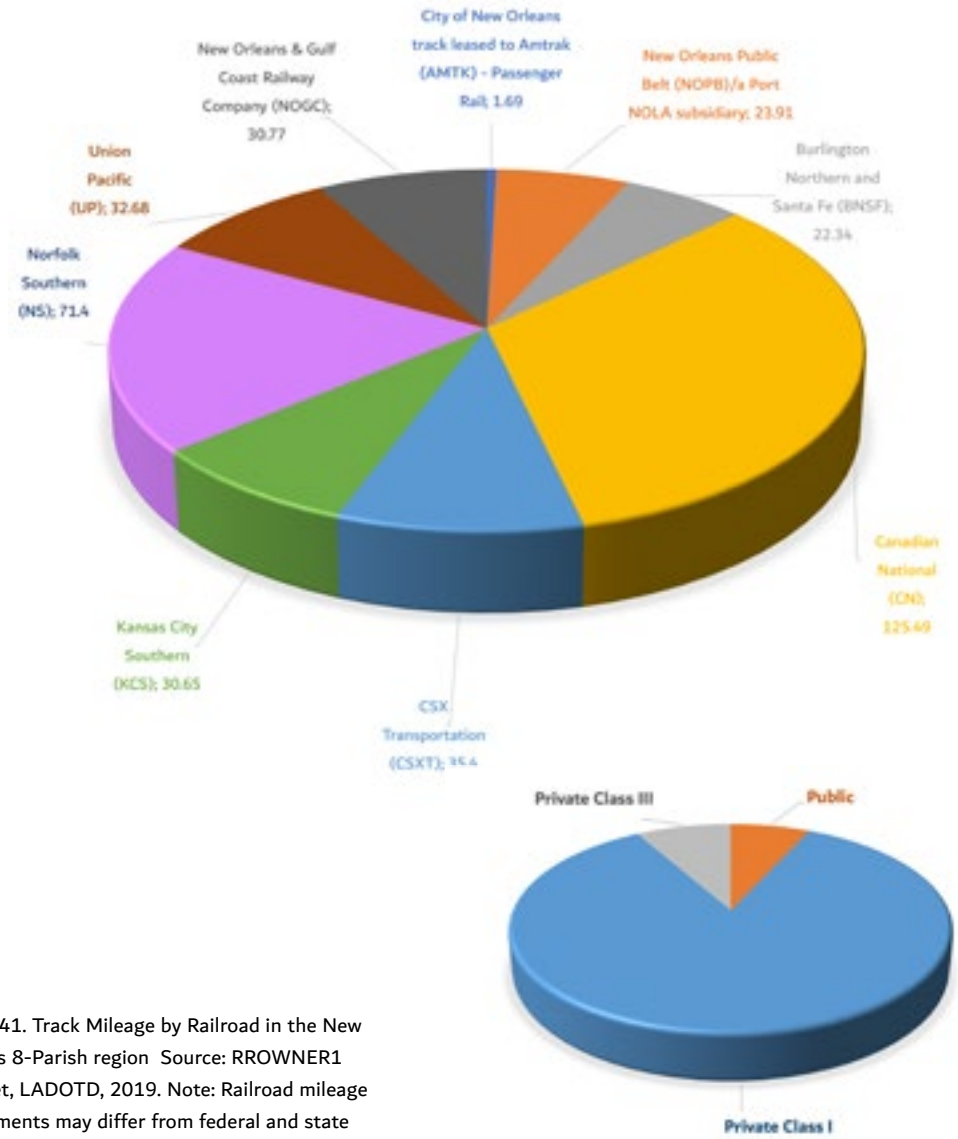


Figure 41. Track Mileage by Railroad in the New Orleans 8-Parish region Source: RROWNER1 data set, LADOTD, 2019. Note: Railroad mileage assessments may differ from federal and state totals and depending on ownership, haulage and trackage rights.)

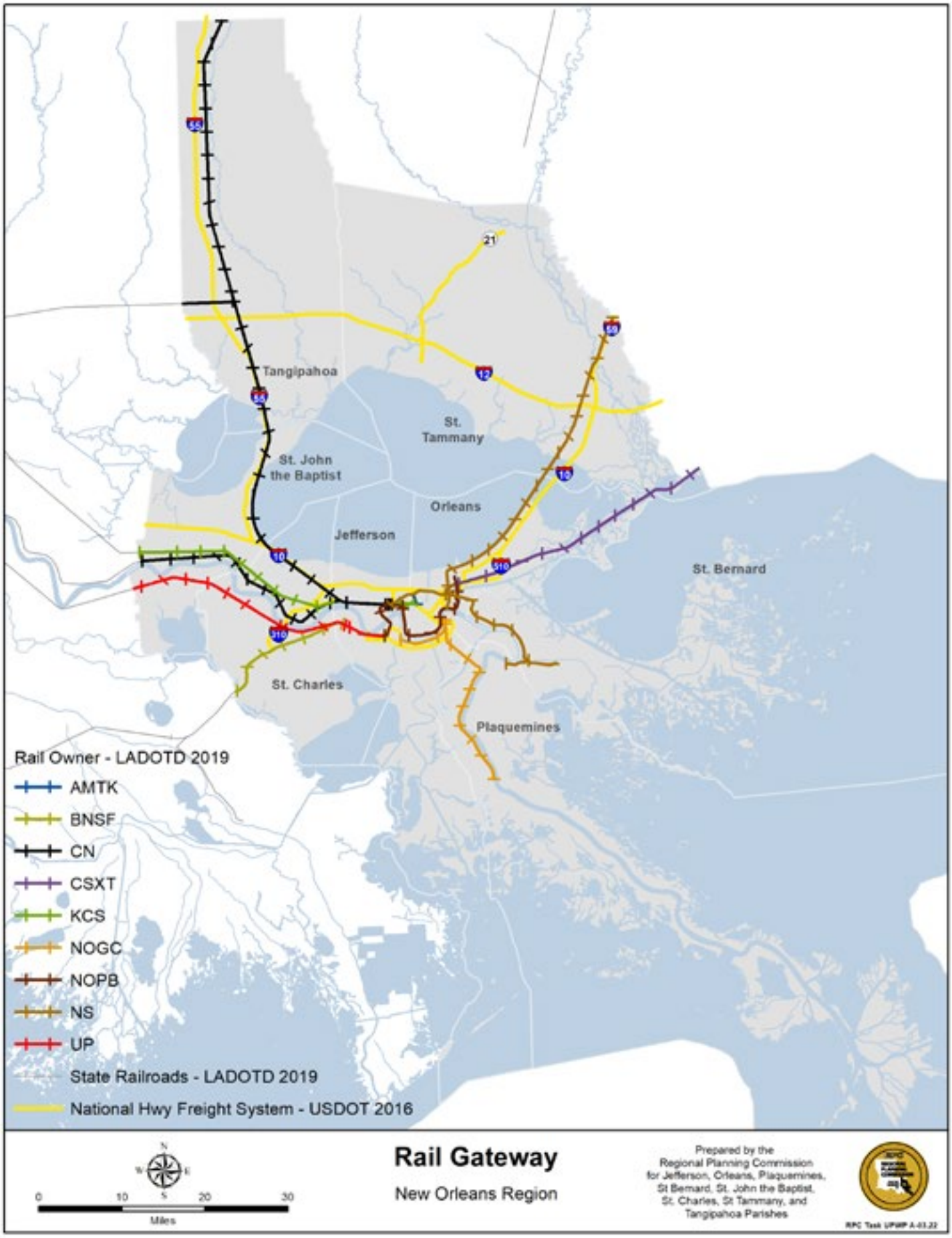


Figure 42. Rail Gateway

RAILROAD

Crossings

Photo: Stock

track (give over full control while retaining ownership of the track).

Maintenance and improvement projects of freight rail lines are the rail owners' resonsibility.[119] Improvements at rail and highway (publicly owned) crossings are a joint effort between LADOTD or local jurisdictions and railroads requiring coordination to maintain, modify or close rail-highway crossings.

There are 1,279 public and privately owned rail/highway crossings in the 8-parish area that are not closed crossings.[120] (Table 25)

There are 578 crossings of public roads and 701 crossings of private roads over rail track.

The New Orleans Gulf Coast Railroad has the highest number of private roadways crossing its tracks with 119 in Jefferson Parish and 171 in Plaquemines Parish. The high number of privately owned roads reflects a large number of driveways due to early plantation settlements along the Mississippi River, which were later divided into smaller, narrow plots of land with riverfront access, as ownership was divided among family members over time.

Number of Public and Privately Owned Roadways with Open Railroad Crossings in the 8-Parish Area

PARISH	Open Private	Open Public	Open Total
Jefferson	155	133	288
Orleans	138	176	314
Plaquemines	181	21	202
St Bernard	75	39	114
St Charles	66	56	122
St John The Baptist	36	50	86
St Tammany	5	20	25
Tangipahoa	45	83	128
GRAND TOTAL	701	578	1279

Table 25. Number of Public and Private Open Railroad Crossings by Parish Source: LADOTD, 2019

RAILROAD

Railroads - Optimization

PRECISION SCHEDULED RAILROADING

Most railroads are private businesses and look for competitive advantages. Over the last decade, the Class I railroads instituted strategic changes and tools to improve performance and reduce costs. Precision Scheduled Railroading (PSR), an approach to make railroading leaner, was adopted across much of the industry. This was accomplished by reducing personnel, balancing train crews when rail traffic is uneven, selling off less profitable routes, and closing some facilities for maximum asset utilization.

By optimizing train logistics, crew usage, maintenance, and train lengths railroads have lowered costs. These changes can have some negative impacts on communities as train lengths may increase to as long as 16,000 feet or 3 miles in length, causing longer duration blockages at some highway/rail intersections. However, it also results in fewer trains which reduces the frequency of blockages. In the New Orleans region most trains crossing the Huey P Long Bridge are one-half to three quarters of a mile in length.[121] A maximum train length is 10,000 feet to avoid blockages on either side of the bridge.[122]

New technology has decreased rail manpower requirements triggering layoffs which have created hardships in local economies.[123] Railcar volumes decreased nationwide between 2018 and 2019, overall while operational streamlining and optimization produced gains for the Class I share prices during the same period - indicating the shift in managing assets stablized earnings.[124]

INSPECTION AND PREVENTION TECHNOLOGY

In addition, railroads actively deployed innovative technologies that aid in track and locomotive inspection and continuous rail monitoring to support predictive analytics to find defects before they become major problems.[125] This reduces maintenance costs and improves safety. Rail diagnostic techniques include placing a range of monitoring instrumentation on board a rail car that scans track while moving or by distributing instrumentation throughout the rail network.[126] The data can be used to understand the health of the track and premptively replace track in poor condition. Drones are used to inspect rail bridges and review damage after flooding or other disasters.[127]

POSITIVE TRAIN CONTROL

Due to some high profile crashes across the country, Positive Train Control (PTC) was mandated by Congress in 2008 to produce interoperability among tenant and host railroads through major investments in communications equipment installed in towers, locomotives and rail track to avoid collisions.[128] This investment will help stop over-speed derailments and incursions into established work zone limits on main lines that transport poison or toxic-by-inhalation hazardous materials over routes with regularly scheduled intercity or commuter rail passenger service.[129] This undertaking required billions of dollars in investment by the railroads to conduct research, develop and install hardware and software to create a seamless network across multiple railroads for a wide range and age of equipment. Radio technology was selected and a set of frequencies or spectrum was acquired specifically for rail communication.[130] Alternatively, railroads may operate without PTC at speeds less than 10 mph.

New Orleans Public Belt Railroad traversing track along the Mississippi riverfront near iconic St. Louis Cathedral, New Orleans, Louisiana Photo: New Orleans Public Belt Railroad

RAILROAD

Railroads - Optimization

After multiple federal extensions, scheduled completion of PTC was achieved on all 57,536 required freight and passenger railroad route miles in the U.S. by the statutory deadline of December 2020.[131]

NEW ORLEANS PUBLIC BELT (NOPB)

The New Orleans Public Belt Railroad was built between 1904 and 1908 to provide neutral pricing and competitive switching for Port NOLA. It acts as an intermediary railroad connecting to all six Class I railroads in the region. In 2018 ownership of NOPB was transferred from the City of New Orleans to Port NOLA improving collaboration and synergistic planning. The shortline owns the rail track over the Huey P. Long Bridge (HPL).[132]

At this writing several projects are moving forward at the NOPB with funding from a Federal Railroad Administration (FRA) discretionary grant program called the Consolidated Rail Infrastructure and Safety Improvements Program (CRISI). The grant will help expand the Claiborne and France Rd. yards near the IHNC and the Kingfish rail yard located under the HPL Rail Bridge in Jefferson Parish.[133] The NOPB provides tri-weekly service to the CN railroad connecting to all CN locations nationwide and provides weekly intermodal service to the KCS to support movements to Wylie, TX. As a Class III switching railroad, it serves local industry on Port NOLA property and moves both export and import commodities for domestic and international customers. There is an on-dock intermodal facility providing ship/rail interchange with the use of yard movers.[134]

THE HUEY P LONG BRIDGE (HPL)

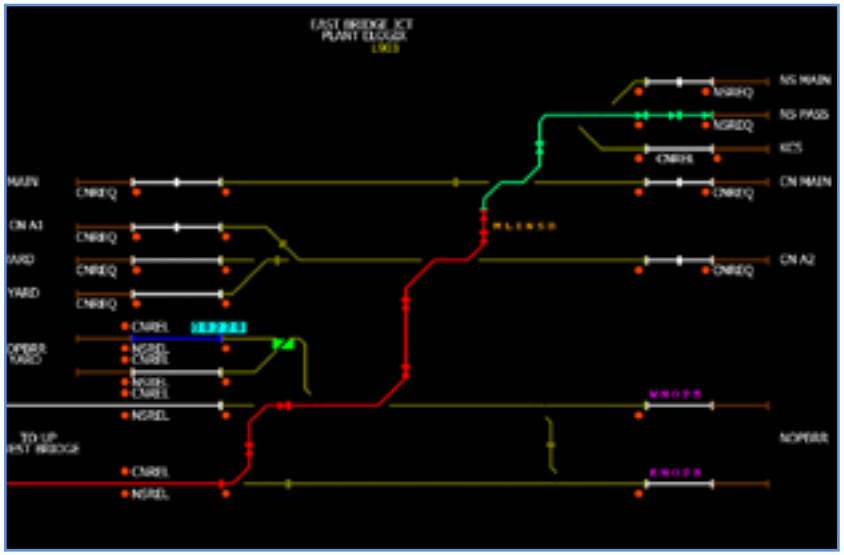
The Huey P Long Bridge (HPL) is a critical link in regional rail movement. It is considered a "no dwell" bridge per the Office of Homeland Security. In 1935 the bridge was constructed to create a southern rail gateway to connect the Mississippi River's east and west bank for coast to coast throughput. Competition between railroads made for uneasy management of this important crossing due to manual handoffs and individual yard master control of each railroad's track between UP's Avondale Yard (West Bridge), CN track (East Bridge) and the NS Back Belt (controlled from Birmingham, AL). This caused delays radiating outward to Mobile, Birmingham, Memphis and Houston. However, the combination of recent industry-wide investments in Positive Train Control (PTC) and additional investment of $20M in Centralized Traffic Control (CTC) (signalization and controls) enabled a joint dispatching agreement among all the Class I railroads. CTC upgrades occurred on the NS Back Belt in Old Metairie and on CN's East Belt track between Central Avenue and Live Oak St. near the Jefferson/Orleans Parish line.

Today the Union Pacific dispatches an estimated 18 to 23 trains per day (typically slightly more traveling eastbound than westbound) over the HPL Bridge from their Spring, Texas office. Central Avenue is the last signal UP controls on the east side of the bridge. Previously dispatching for the bridge was controlled mechanically from towers at each end of the bridge. (see photos on previous page) UP reports that train travel time through New Orleans has reduced from

Union Pacific train on Norfolk Southern (Back Belt) track in Old Metairie, Louisiana
Photo: Brad Kindschy

RAILROAD

Optimization



Top left: 1935 East Bridge Junction light panel of track and signals
Bottom left: 1935 East Bridge Junction mechanical switches and operator.
Photos circa 1999.

Top right: 2020 East Bridge Junction computerized light panel
Bottom right: Union Pacific control center in Spring, TX replacing New Orleans
Huey P Long Bridge East and West Bridge Junction dispatching and switching
Photos: Union Pacific Railroad

RAILROAD

Planning

GM-EMD SD60 locomotive number 6695 crosses Lake Pontchartrain Photo: Norfolk Southern Railway

14 to 16 hours down to 9 to 12 hours under the new dispatching system and through a concerted effort to to operate the gateway as a network.[135]

RAIL STUDIES

Due to the importance of freight rail to the local economy, and because of the overlap with highway/rail intersection safety, as well as Amtrak passenger movements, the Regional Planning Commission facilitates or contributes to rail planning for freight and passenger rail. Two significant freight rail evaluations are the New Orleans Rail Gateway Infrastructure Improvement Program and the LA 23 Rail Relocation Study.

NEW ORLEANS RAIL GATEWAY STUDY[136]

Working in partnership with the LADOTD, the New Orleans Gateway evaluation brought all rail stakeholders to the table. It sought to mitigate rail choke points, highway congestion at rail crossings, improve safety and the

KCS train crosses Hoey's Canal Photo: Brad Kindschy

throughput of freight trains by identifying alternate routes. The favored alignment did not end in a preferred alternative alignment due to concerns about capacity for future passenger trains and impacts to surrounding City of New Orleans neighborhoods.[137] The public/private study effort reflected the railroad industry's interest in addressing gateway congestion. The study is still underway looking at selected crossings.

CSX train Photo: CSX

LA 23 RAIL RELOCATION STUDY [138]

Working with the Federal Railroad Administration (FRA), the RPC facilitated an evaluation of alternative rail alignments to potentially reroute the New Orleans Gulf Coast Railroad (NOGC) out of the City of Gretna where the train runs within the street right-of-way for approximately 1/2 mile. Using the National Environmental Policy Act (NEPA) Environmental Assessment process, a preferred alternative alignment was identified to improve highway/rail crossing safety, reduce congestion and provide for a more direct link to serve business in Plaquemines Parish. This study resulted in approval of a new alignment within the Peters Rd. corridor. FRA issued a Finding of No Significant Impact (FONSI) in 2017, the official document providing environmental clearance. The new alignment track mileage is 6.7 miles shorter and the number

New Orleans Gulf Coast Railway train under Crescent City Connection Bridge in Gretna, Louisiana Photo: NOGC

RAILROAD

Regulation and Defense

Canadian National Railroad locomotive Photo: CN

of public railroad crossings are reduced from 73 to 6.

RAIL REGULATION

The FRA is one of the ten agencies within the U.S. Department of Transportation and its mission is to enable safe, reliable, and efficient movement of people and goods across the country. The agency is primarily involved in implementing and regulating rail safety regulations, making selective investment in rail corridors, and conducting research and technology development.[139]

SURFACE TRANSPORTATION BOARD (STB)

The Surface Transportation Board (STB) was created in 1995 and assumed the regulatory role of the Interstate Commerce Commission.[140] While it regulates various modes, its primary focus is freight rail. The agency has jurisdiction over railroad rate, practice, service issues, and rail restructuring transactions, including mergers, line sales, line construction, and line abandonments. When local industry challenges rates or single access, the STB reviews and makes determinations.

The STB also has jurisdiction over certain passenger rail matters, the intercity bus industry, non-energy pipelines, household goods carriers' tariffs, and rate regulation of non-contiguous domestic water transportation (marine freight shipping involving the mainland United States, Hawaii, Alaska, Puerto Rico, and other U.S. territories and possessions).[141]

QUIET ZONES

As part of the Federal Railroad Administration's Train Horn Rule (49 CFR Part 222), locomotive engineers must begin to sound train horns at least 15 seconds, and no more than 20 seconds, in advance of all public grade crossings.[142] Train horns may still be used in emergency situations or to comply with other federal regulations or railroad operating rules. To initiate a Quiet Zone, the FRA prescribes evaluation steps that communities must take. It involves an inventory of crossing equipment, assessment of risk using a Nationwide Significant Risk Threshold (NSRT) and determining what range of capital investments satisfy FRA's requirements to achieve safe crossings.[143] Local communities, not railroads, must pay for the evaluation and capital investments. The Old Metairie neighborhood (Norfolk Southern Railroad Back Belt track) in Jefferson Parish is the only area with an active Quiet Zone in the region today.

STRATEGIC RAIL CORRIDOR NETWORK (STRACNET)

The Strategic Rail Corridor Network (STRACNET) comprises 36,000 miles of interconnected rail networks across the U.S. that are most important to our nation's national defense. The STRACNET was developed to meet the the Department of Defense minimum rail needs serving over 120 defense installations. The U.S. Military Surface Deployment and Distribution Command's Transportation Engineering Agency has identified the KCS, CN, NS, CXST, BNSF, and UP railroads entering the Greater New Orleans region as part of this network.[144]

BNSF locomotive Photo: Erik Lindqren

RAILROAD

Incidents

RAIL CROSSING INCIDENTS

Rail crossings remain some of the most dangerous locations on America's highways. The public has few interactions with freight railroads except at highway rail crossings where the weight differential between a train and highway vehicles leads to a high percentage of fatalities when they collide. According to the CARTS database, between 2016 and 2018, there were 54 total crashes; 14 injury crashes and 5 fatalities (10 percent) were reported on all rail lines within the RPC region.[145] (Figure 43)

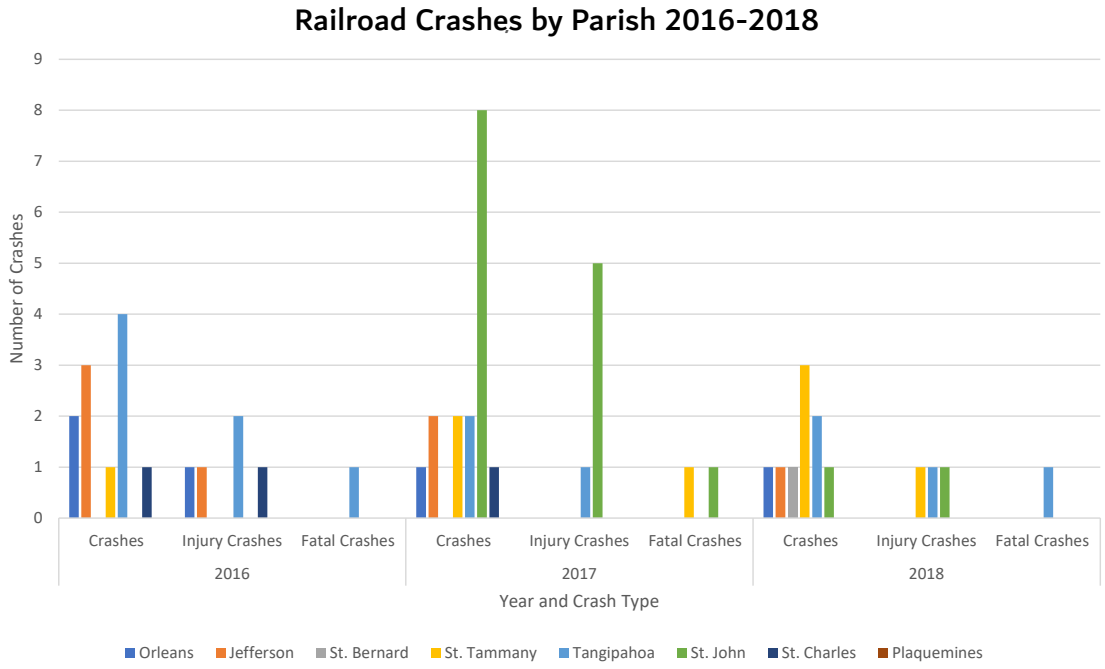


Figure 43. Railroad crashes by Parish. Source: Louisiana Center for Analytics and Research in Transportation (CARTS), 2020

Trains transport heavy materials, large loads and often hazardous chemicals - making safety a top priority of the industry and the FRA. The Federal Government provides support to states to upgrade signals and educate the public on rail crossing safety. Louisiana has about 2,800 public highway-rail at-grade crossings, and 1,450 have active signaling devices. The LADOTD Highway Safety Program undertakes 30 to 50 rail crossing improvement projects each year.[146]

Funding for grade crossing improvements is provided as a set aside from the Highway Safety Improvement Program (HSIP) apportionment in the FAST Act for the Railway-Highway Crossing (Section 130) Program.[147] Funds are allocated to states by formula. FRA utilizes research and modeling to conduct risk analysis of crossing hazards and best-fitting countermeasures.

An Emergency Notification System (ENS) has been established so the public can report dangers to the railroad using information posted at each crossing and data is reported monthly to FRA. For incidents happening away from crossings, the FRA developed trespassing safety guides for communities. The FRA supports Operation Lifesaver, Inc. (OLI), a national nonprofit that proactively educates people about safe driving behavior at highway railroad crossings. In addition to these life saving programs, the public is now able to access all highway-rail grade crossing records submitted by states and railroads and view accident history based on the USDOT Crossing ID, address or geo-location via a mobile device called Rail Crossing Locator. The ap is free and made available by FRA.

RAILROAD

Identified Challenges

State of Good Repair

·High percentage of railroad profits must be reinvested into maintenance and infrastructure

Economic Competitiveness

·Freight capacity is at cross purposes with growing desire for passenger rail

·Federal requirements for high cost PTC delayed other railroad investments

·Railroads fiercely compete for customers

Advanced Technology

·Federal requirements for high cost PTC delayed other railroad investments

·Optimatization through technology may impact labor

Safety, Security and Resiliency

·Frequent hurricane emergency response reroutes rail traffic away from the region, disrupting normal rail movements

·Hazardous material loads are vulnerable targets at highway crossings

·Rail/Highway incidents threaten lives of train personnel and vehicle passengers

-Distracted drivers bring about rail/highway collisions

Performance and Accountability

·Major railroad/railroad and highway/railroad crosss-ings (many are private driveways) reduce speed and capacity of trains within the region and through the New Orleans Southern Rail Gateway

Economic Efficiency

·Public funding for privately owned railroads is limited and competitive

·Conversion of train engines to alterna-tive fuel is costly

·Single access rail service frustrates lo-cal industry and their ability to compete

Environmental

·Rail diesel emissions cause air pollution which increase air and ocean temperature

·Horn blowing at rail/highway intersections cause local noise pollution

The categories of challenges are based on FHWA goals. Identified challenges in each category are created from RPC interviews, observations, and general information for the purpose of regional freight planning going forward. This list is to be updated with stakeholder input.

Huey P Long Bridge, the Southern Rail Gateway over the Mississippi River Photo: New Orleans Public Belt Railroad

AVIATION

Air cargo loading Photo: Stock

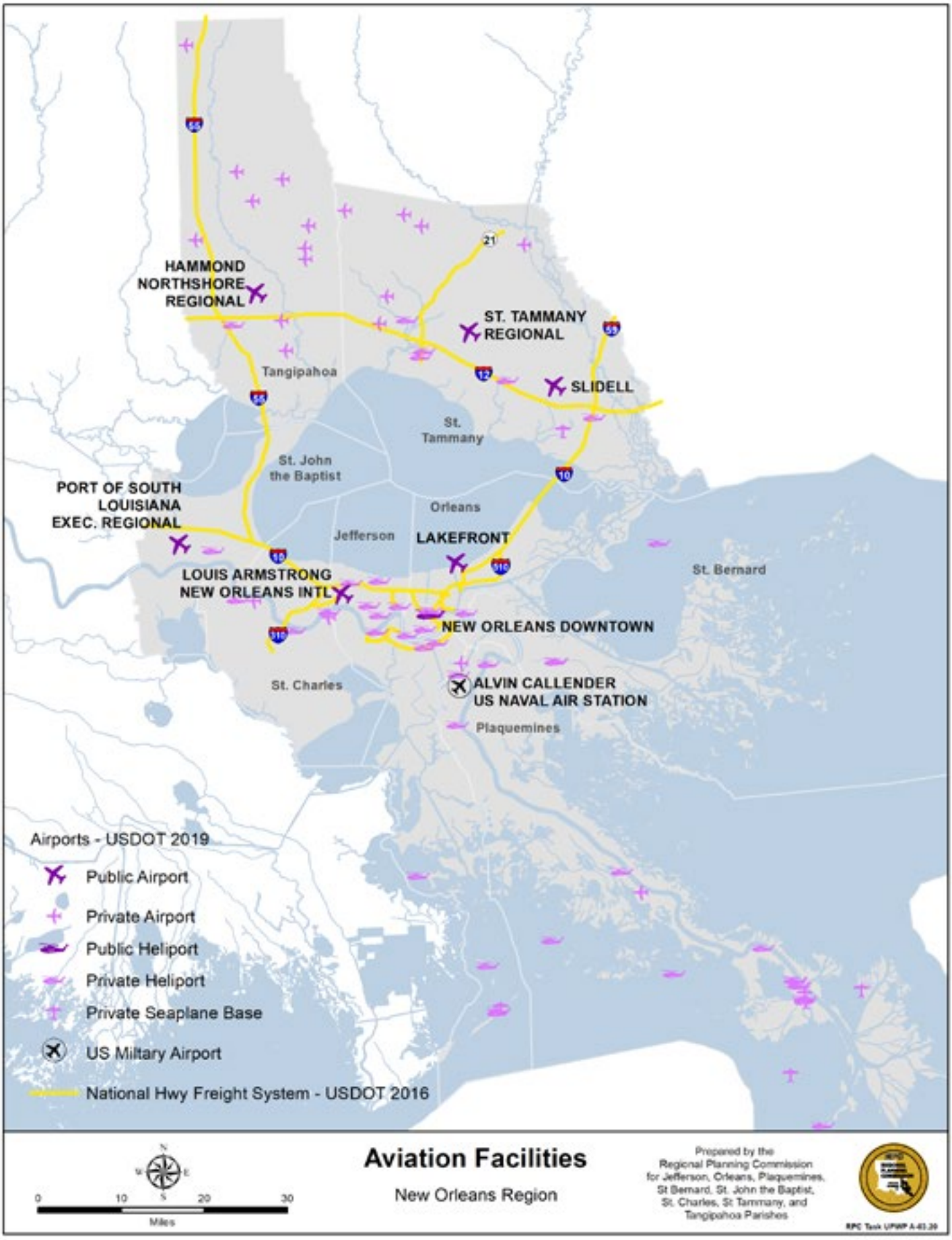


Figure 44. Aviation Facilities

AVIATION

Assets

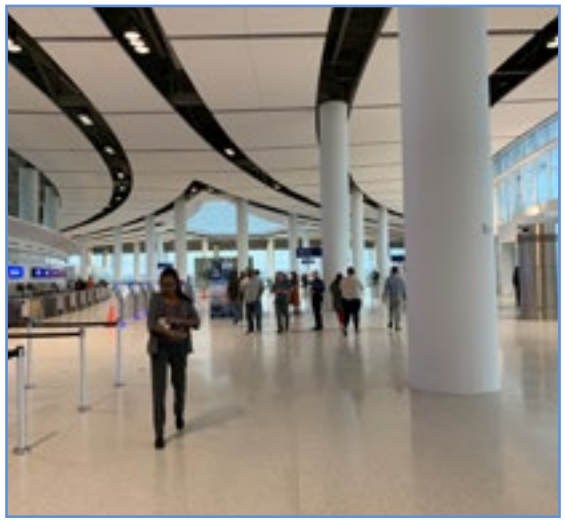
A small portion of the freight that travels through the New Orleans region is moved by air. Most air freight consists of low-weight, time-sensitive cargo. The top commodities by tonnage moved by air through the region include electronics, plastics/rubber, machinery, miscellaneous manufactured products, and mixed freight.[148] It is anticipated by 2045 that the amount of air freight cargo tonnage will increase by 71 percent.[149]

REGIONAL ASSETS

There are six public airport facilities operating in the RPC region. Louis Armstrong New Orleans International Airport (MSY) is the primary facility for commercial air traffic, but other regional airports include Hammond North Shore Regional, St. Tammany Regional, Slidell Municipal, Port of South Louisiana Executive Regional, and the New Orleans Lakefront Airport. In addition to general aviation facilities, Alvin Callendar Field, a large military airport at the Naval Air Station Joint Reserve, is located in Belle Chasse. There are 21 other private airports and 45 private heliports in the area, some serving local hospitals. There are also 7 private seaplane bases in the region.[150] (Figure 44)

In 2019 the New Orleans Louis Armstrong International Airport expanded by constructing a new state-of-the-art passenger terminal located north of the existing runways.[151] The new modern terminal helps to clear passengers and their on-board cargo more efficiently, which supports on-schedule and safer flights for belly cargo operations (freight flying in the baggage hold of a passenger plane). The new terminal incorporates sophisticated baggage reconciliation technology and seamless consolidated baggage systems that track bags from pick up in the parking garage to their destination. The new technology reduces baggage handling and speeds clearance by Customs Border Protection Officers. Officers work to similarly examine and clear freight in the cargo hold.

In addition, the computer hardware allows common or shared use software so many airlines can expand or move to different countertop locations as needed to accommodate the number of customers. Proprietary software used by many large airlines is



Top: Exterior of departure area at the MSY north terminal
Bottom: Interior lobby at the MSY north terminal

AVIATION

Cargo

available at all counter positions to allow for user flexibility. The original parking garage is still servicing the airport and over 2000 airport concessionaire employees and passengers have the option to park there. A shuttle service is provided to the north concourse.[152]

Per data synthesized by the Bureau of Transportation Statistics for 2018 Airport Cargo, the MSY was ranked 68th in the country for landed weight (374,668,848 tons). Landed weight is defined as the combined plane, passengers and cargo weight. It is the number used by airports to assess landing fees. This was a 4.92% increase in tonnage from 2017.

BELLY CARGO/MAIL AIR CARGO

Belly cargo is moved with luggage on most passenger planes and accounted for between 11.7% and 15.9% of all international and domestic freight enplanements and deplanements by weight between 2016 and 2019. It was trending upward beginning in 2016 with 12.6 million pounds, peaked in 2018 with 19.9 million pounds, but ended lower in 2019 at 17 million pounds. (Figure 45 andTable 26)

Freight and mail-only air freight carriers at the New Orleans International Airport include the United Parcel Service Inc. (UPS), Federal Express (FedEx) and DHL. They operate out of warehouses near the South Terminal. These carriers make up the bulk of all air cargo moved both domestically and internationally in the New Orleans region. In 2019 over 116 million pounds of domestic and 237 thousand pounds of international air freight and mail cargo enplanements and

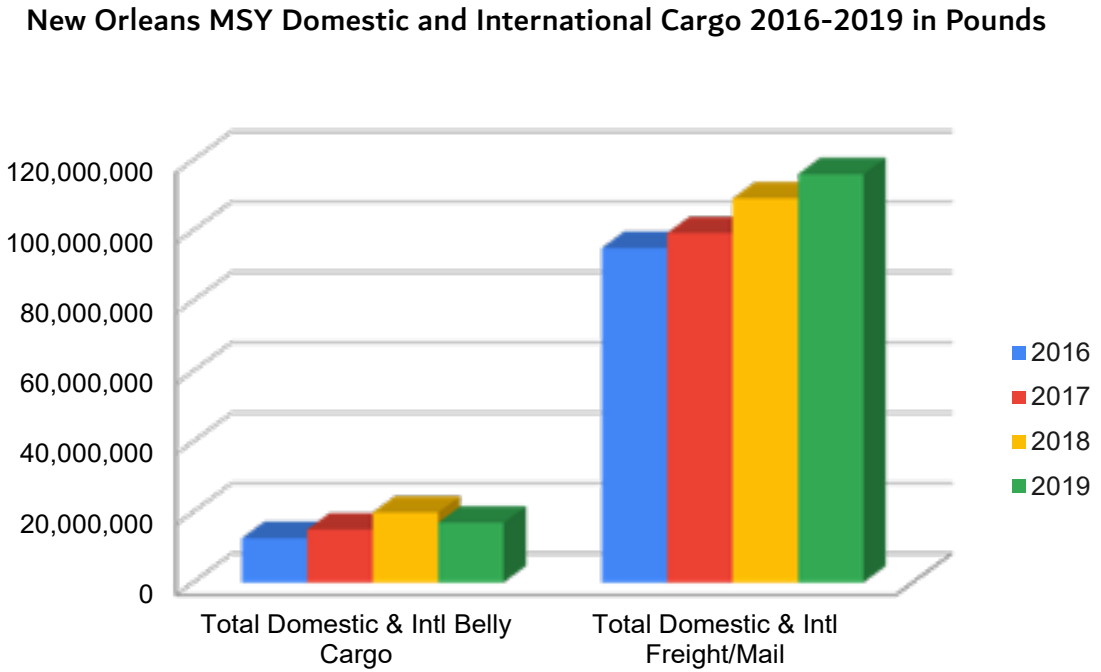


Figure 45. New Orleans Air Cargo in Pounds Source: MSY

Domestic and International Belly vs. Freight/Mail Cargo in Pounds				
	2016	2017	2018	2019
Total Domestic & Intl Belly Cargo	12,624,755	15,103,649	19,934,764	17,014,049
Total Domestic & Intl Freight/Mail	95,047,040	99,300,283	109,146,469	116,035,409

Table 26. Domestic and International Belly vs Freight/Mail Cargo Source: MSY

AVIATION

Delay

deplanements were moved at MSY compared to 17 million pounds of belly cargo. (Figure 45) As for international movements, only 3% of all belly cargo and freight/mail air enplanements and deplanements by weight move internationally.

In 2019, New Orleans had a total of 13,644,666 domestic and international passengers enplane and deplane, up 3.8 % compared to 2018 at 13,122,762.[153] In the 12 months ending November 2020, passenger arrivals and departures dropped 55% due to COVID-19 while freight/mail had increased 7.5%. This uptick in freight and downturn in passenger travel during the coronavirus pandemic follows airport trends nationwide.[154]

Air cargo often is used to ferry supplies during emergency events. The Federal Emergency Management Agency (FEMA) created a program, Operation Airbridge, to quickly deliver Personal Protective Equipment (PPE) from international suppliers to first responders and medical workers between March and June 2020. This action helped to mitigate the COVID-19 crisis as the need for masks, gowns, gloves, respirators and other medical equipment surged. The Operation Airbridge program moved this cargo nine times faster than cargo deliveries by sea.[155]

FedEx cargo bins for loading and unloading air cargo Photo: FedEx media

DELAY

The Louis Armstrong New Orleans International Airport is considered the major airport in the region and its reliability is detailed by the Bureau of Transportation Statistics. Flight delay affects freight traffic movement and on-time delivery of essential resources. A flight is considered delayed when it arrives 15 or more minutes later than the scheduled time calculated, based on arriving flights only. Per the U.S. Bureau of Statistics, MSY domestic flight reliability decreased slightly from 81% in 2015 to 79% in 2019. The 2019 delay at New Orleans was similar to other U.S. airports with a similar number of enplanements and depanements. (For comparison Kansas City reliability was 80%, Raleigh Durham was 79%, and Houston Hobby was 78%.)[156]

In late 2019, as the MSY completed final construction on the north terminal, the RPC worked quickly with the City of Kenner to design and fund, (80% federal with 20% local dollars), the $6.5 million short-term roadway connection to the new site using Aberdeen Street while a major interchange connecting to Interstate 10 is being constructed, with planned completion in 2023. The LADOTD is designing and constructing the I-10 interchange at Loyola Drive with a direct access ramp for east bound traffic to New Orleans and a diverging diamond design at grade. Due to limited resources, funding is through a Grant Anticipation Revenue Vehicle (GARVEE) bond, which borrows from future federal transportation revenues with bonds maturing in 2031.[157] The New Orleans MPO is contributing $1 million per year for 12 years. The total interchange project cost is estimated at $147 million.[158]

In addition to the new interchange, the MPO participated in a study of Bainbridge Street located east of Aberdeen into the airport. It was evaluated and a preferred alternative of a 4-lane divided roadway with dual 8' by 15' wide box culverts in the median, a culvert, was recommended as a secondary access corridor, potentially for car rental returns and as a more direct route to shuttle employees and passengers from the south parking garage to the north terminal.[159]

AVIATION

Aviation - Helicopters

Helicopter ferrying workers, landing onboard a ship helipad

Deep water oil and gas ship equipped with a helipad

HELICOPTERS

Twenty to twenty-five of the 45 heliports within the 8-parish region relate to energy production.[160] Helicopters are used to ferry personnel and limited cargo to and from oil rigs and ships operating in the Gulf of Mexico and often stop at multiple rigs for pick-up and drop-off per trip. Offshore helicopter operations are inherently dangerous. Beyond challenging weather conditions, the pilot must coordinate with ground crews about drilling and production hazards such as explosive and noxious gases, gas venting, and maneuver on and off various sized offshore helidecks.[161] Heliport operations are integral to maintaining Louisiana offshore oil and gas production and onshore chemical industry refineries and plants.

Gulf water oil and gas rig and ships equipped with a helipads

Photos: Stuart Duffield

AVIATION

Identified Challenges

Safety, Security, Resiliency

·COVID-19 reduced the number and location of freight business passenger flights

Advanced Technology

·Constant evolution in logistics software is needed

Economic Competitiveness

·Commerical aviation moves less freight tonnage (high value-low weight)

·Belly cargo delivery areas are dependent on passenger routes

Environmental

·Commercial jet fuel has high particulate emissions

State of Good Repair

·Bainbridge Street has not been upgraded yet - potentially for shuttle service, employee utilization and car rentals

Economic Efficiency

·Large impact of COVID-19 on passenger flight frequencies and associated belly cargo deliveries

·Refrigeration warehouse underutilized

Performance and Accountability

·New entrance to airport exit at I-10 interchange is not complete prior to north terminal openining

The categories of challenges are based on FHWA goals. Identified challenges in each category are created from RPC interviews, observations, and general information for the purpose of regional freight planning going forward. This list is to be updated with stakeholder input.

Photo: Stock

PIPELINE

Photo: Marin Tockman Stephens

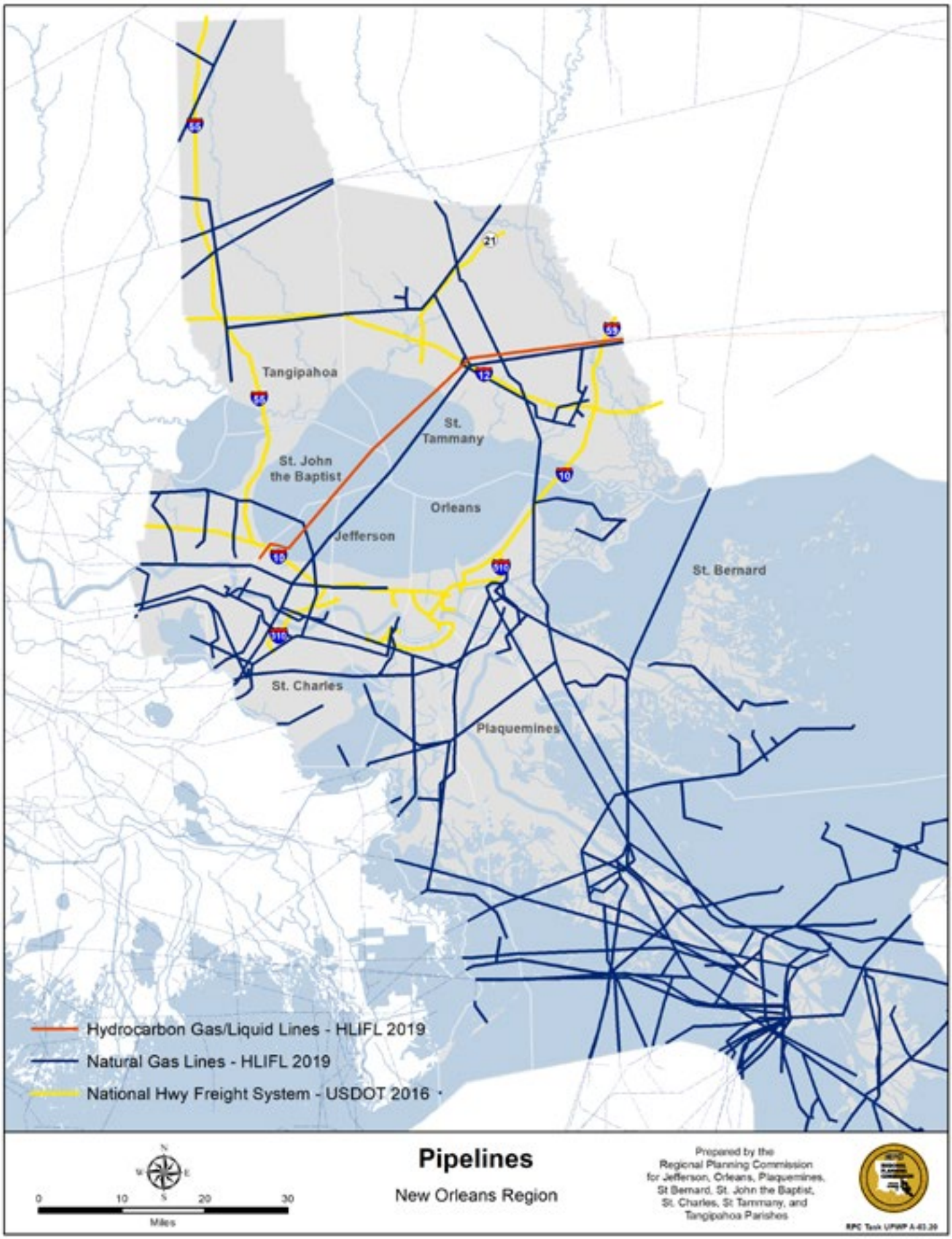


Figure 46. Pipelines

PIPELINE

Mileage

Pipelines are critical freight assets for the State of Louisiana and the RPC region. They are regulated by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration. According to the Louisiana Department of Natural Resources (DNR), which facilitates federal guidance and oversight in Louisiana, the state has almost 50,000 miles of pipeline. The 8-parish region has over 6,995 miles of gas and hazardous liquid pipelines.[162] (Figure 46)

The state's natural reserves of petroleum and gas have generated a massive chemical based industry along the Mississippi River. Pipelines move a significant amount of freight tonnage, including crude oil and natural gas from wells on land and offshore to regional refineries and chemical plants, where it is converted to fuel, chemicals and other products.[163] Pipeline tonnage may connect to rail, water and roadway transportation networks as well.

According to the Freight Analysis Framework, as of 2018 30% of all freight tonnage moved by pipeline (134,866,000 tons) to, from and through the region, was estimated at 30% of the gross economic impact of all freight moving in the region. It is estimated that by 2045 pipeline tonnage will decrease but will still be an essential freight asset moving 27% of all the freight tonnage and be worth 22% of the freight economic value.[164]

Plaquemines Parish has 27% of all pipeline in the 8-parish region. With over 500 miles of

Active Pipeline Mileage by Parish						
Parish	Gas	Percent of Gas Miles	Hazardous Liquid	Percent Haz. Liquid	Total Miles	Percent of Total Miles
Jefferson	188.09	10	169.24	10	357.33	10
Orleans	86.45	5	34.69	2	121.14	3
Plaquemines	511.47	28	439.57	26	951.04	27
St. Bernard	180.43	10	104.58	6	285.01	8
St. Charles	318.77	18	437.07	26	755.84	22
St. John	146.94	8	351.38	21	498.32	14
St. Tammany	214.63	12	104.39	6	319.02	9
Tangipahoa	169.59	9	40.65	2	210.24	6
Total	1816.37	100%	1681.57	100%	3497.94	

Table 27. Active Pipeline Mileage by Parish Source: National Pipeline Mapping System

Photo: Stock

PIPELINE

Projects

gas line mileage it exceeds the next highest gas line mileage of St. Charles Parish by 192 miles. (Table 27 and Figure 47)

The Port of Plaquemines is using this advantage along with their proximity to the Gulf of Mexico and deep draft Mississippi River access to become an energy based port. Two Liquified Natural Gas (LNG) pipeline projects are underway in Plaquemines Parish.[165] Venture Global LNG, an American-based liquefied gas company, began pursuing a Plaquemines LNG Gator Express Pipeline facility in Plaquemines Parish, and was then authorized by the Federal Energy Regulatory Commission (FERC) in May 2019. The LNG Gator Express is proposed to move up to 24 million metric tons per year. Per the FERC Environmental Impact Statement, the Plaquemines LNG facility will be built to accommodate ocean-going vessels with an LNG carrying capacity of up to 185,000 cubic meters. To deliver natural gas to the project site, Venture Global is proposing to construct approximately 28 miles of two 42-inch-diameter pipelines between existing interstate natural gas pipelines and the Port of Plaquemines.[166] As of October 2019, the Department of Energy (DOE) authorized export to non-Free Trade Agreement countries.

A second Venture Global project was formally announced in the FERC process and consists of a 283-mile Delta Express pipeline between north Louisiana and the Port of Plaquemines, with exports of LNG up to 24M metric tons per year. The facility will be housed on 540 acres.

Oil and gas collection facility with ship only access near Head of Passes

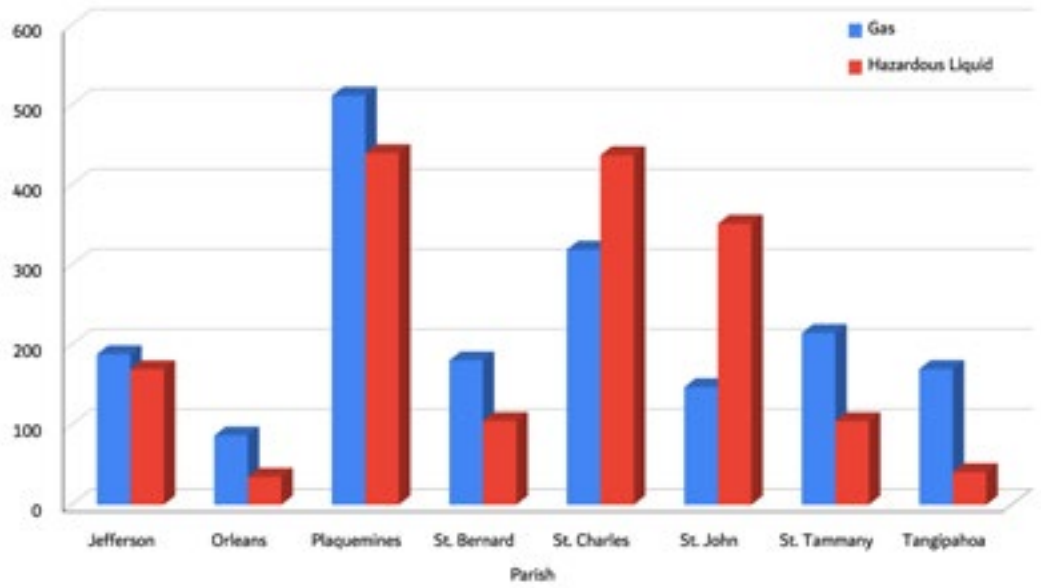


Figure 47. Active Pipeline Mileage by Parish Source: National Pipeline Mapping System

PIPELINE

Pipeline - Refineries

REFINERIES

Louisiana hosts the nation's only deep water oil port, the Louisiana Off-shore Oil Port, or LOOP, where foreign waterborne crude and Louisiana coastal shelf oil production is received and moved inland via pipeline. It is distributed across the U.S. through a pipeline network to storage facilities. As of April 30, 2020, the IRS reported that there are 16 active fuel storage and distribution terminals in the region (out of 37 statewide).[167] According to the U.S. Energy Information Administration (EIA), the primary national agency to track and forecast production within five Petroleum Administration for Defense Districts (PADDs), Louisiana has 16 petroleum refineries that account for nearly one-fifth of the nation's refining capacity.[168] (Figure 48) Eight of these refineries are located in the New Orleans Metropolitan Statistical Area [169] (Chalmette, Garyville, Belle Chasse, Convent, Norco (2), and Meraux). Using advanced technology, Louisiana refineries convert crude to lighter weight, higher value petroleum products including motor fuel and jet fuel.[170]

Figure 48. Map of Petroleum Administration for Defense Districts (PADDs) in the U.S. used for tracking energy production, distribution and use Source: Energy Information Administration EIA

The confluence of an international oil price war and COVID-19, that began in January 2020, had far reaching economic impacts for the Louisiana chemical market. The event has dramatically reduced the demand for energy and chemicals, negatively impacting associated industries in the New Orleans region and across the country. These unprecedented events resulted in lower energy prices and a decline in consumer demand further resulting in an over-supply and high inventory storage problem of oil and gas. The industry responded by pulling back on capital investments, instituting job layoffs and conserving cash flow until demand returns. It is believed the market rebound will occur, but slowly throughout 2022 and 2023.[171]

The major hub for intermodal pipeline connectivity is in St James Parish, near the upper boundary of the Port of South Louisiana. The area hosts the LOCAP Storage Terminal which connects a 57.8 mile, 48-inch pipeline to the Clovelly Dome Storage Terminal in LaFourche Parish, operated by the LOOP deep water port. [172]

The LOCAP storage facility holds up to 3 million barrels with a daily throughput of 1.7 million barrels. The port processes over 1.1 million barrels of crude oil daily.[173]
Another major pipeline, the Capline pipeline, is a 48-inch (121 centimeter), 640-mile (1,030 kilometer) pipeline that carries an average of 1.3 million barrels of oil daily from Louisiana to the middle of the United States.[174] Changes in energy production and the price of oil over the last decade are cre-

PIPELINE

Pipeline - Regulation

ating a novel change: a reversal of directional flow within the Capline pipeline is expected to occur in 2021, moving light crude oil from Cushing, Oklahoma to St. James, Louisiana.[175]

REGULATION

Pipeline regulation and safety are overseen by either the US DOT, Office of Pipeline Safety for interstate pipelines or the Office of Conservation under the Louisiana Department of Natural Resources (DNR) for intrastate pipelines.[176] Within the department there are the following divisions and programs:

Pipeline Division

This division's purpose is to regulate the use, end-use, conservation, and transportation facilities for movement of intrastate natural gas. It also regulates carbon dioxide pipelines and compressed natural gas fueling facilities. The Pipeline Division oversees the enforcement program for both intrastate natural gas and hazardous liquids pipelines, and damage prevention enforcement on pipeline right-of-ways. The Pipeline Division conducts comprehensive safety checks and provide information to users of natural gas regarding the availability of supplies of natural gas.

Pipeline Operations Program

The Operations Division regulates the construction, acquisition, abandonment and interconnection of natural gas pipelines, as well as the transportation and use of natural gas supplies.

Damage Prevention Program

The Damage Prevention Program Division enforces the laws that promote the protection of property, workmen, and citizens in the immediate vicinity of an underground utility or facility from damage, death, or injury. The program promotes the health and well-being of the community by preventing the interruption of essential services which may result from the destruction of, or damage to, underground facilities or utilities.

SAFETY

Pipeline strikes can happen when pipelines are struck by marine vessels, railcars, vehicles or during construction activities. The damage caused can be catastrophic, causing loss of life, damage to property and immense harm to the environment.[177]

Pipeline Safety Program

The Pipeline Safety Program is operated through the Louisiana Department of Natural Resources and is responsible for regulating over 400 different intrastate pipeline operators to ensure safety and compliance with the regulations are achieved.[178]

Chemical tanker used for various refined products

PIPELINE

Identified Challenges

Economic Competitiveness

·Advancements in alternative fuels may reduce demand for petroleum based fuels
·Price for a barrel of oil manipulated by foreign interests
·Unconventional production (fracking) creates cheaper US oil

Economic Efficiency

·Demand for pipeline commodities change over time
·Public and private revenue streams are easily impacted by changes in petroleum-based economics

State of Good Repair

·High mileage requires constant review for leaks

Performance and Accountability

·Oversight shared among FERC, US Dept of the Interior, and US DOT
·Environmental concerns (pollution, emissions, climate change) challenge dependence on petroleum-based fuels

Safety, Security and Resiliency

·Hazardous and volatile chemicals and fuels must be handled with great precision and care, often at higher cost than other commodities
·Miles of pipeline are difficult to completely secure
·The nation and region are highly dependent on continued access to conventional energy resources

Environmental

·Pipelines degrade the wetlands and may negatively impact land use along pipeline corridors
·Physical and social continuity of tribal lands and tribes may be negatively impacted

Advanced Technology

·Foreign-based cyber attacks against pipeline and other critical energy infrastructure, including electric grid, nuclear power and refineries create uncertainty

The categories of challenges are based on FHWA goals. Identified challenges in each category are created from RPC interviews, observations, and general information for the purpose of regional freight planning going forward. This list is to be updated with stakeholder input.

Valero Refinery St. Bernard Parish Photo: Marin Tockman Stephens

ALTERNATIVE FUELS

Charging station in Pontchatoula, LA

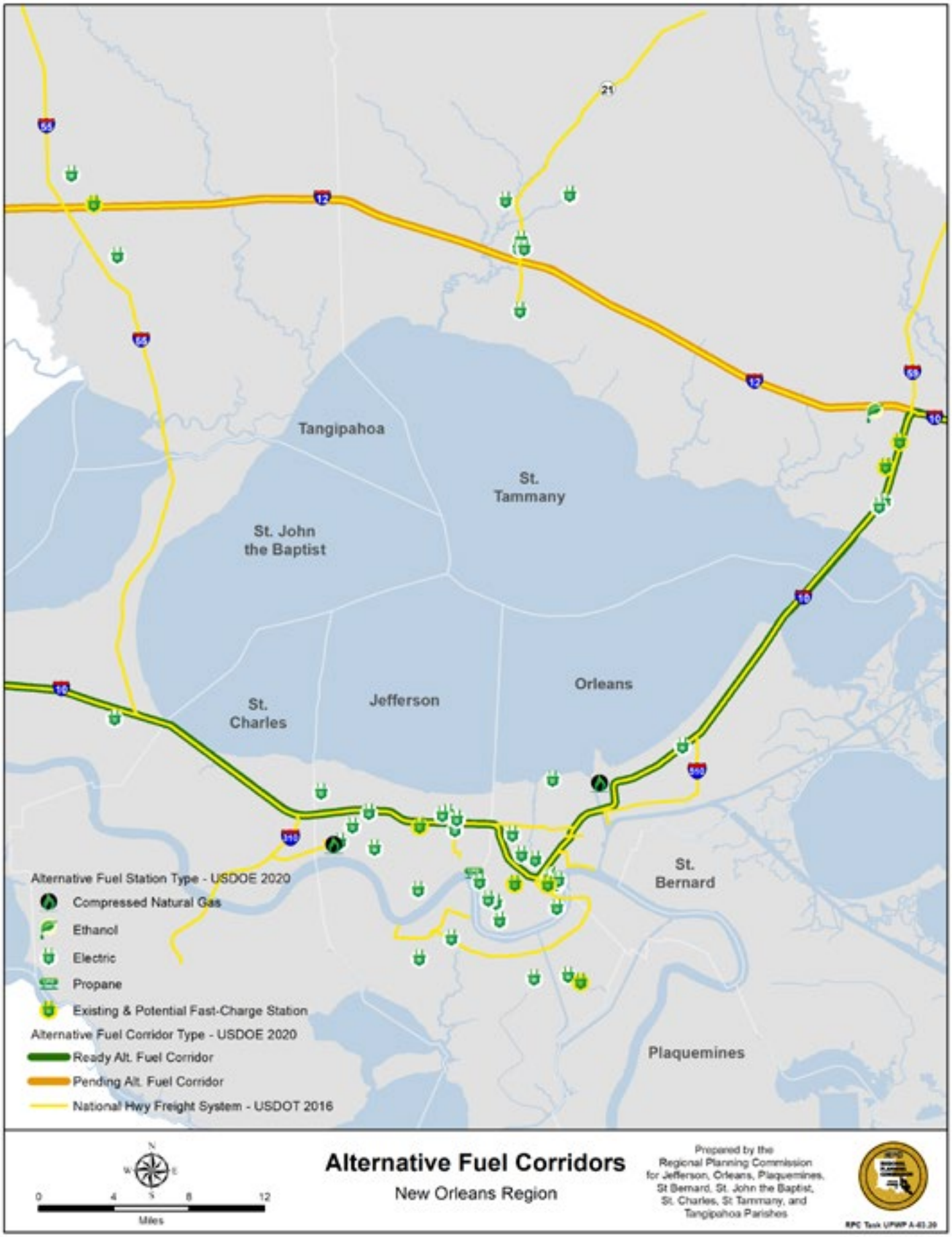


Figure 49. Alternative Fuel Corridors

ALTERNATIVE FUEL

Alternative Fuels

ALTERNATIVE FUEL STATIONS

Public Stations

The RPC region offers public alternative fueling stations for electric, compressed natural gas (CNG), propane, and ethanol-powered light-duty vehicles. To date, the 8-parish region has four fast-charge stations, one public compressed natural gas station, one public ethanol station (Slidell), two public propane stations (Jefferson Parish and Kenner), and 17 Tesla-only public electric charging stations. More than 130 electric vehicle charging station outlets are available throughout the region at various grocery stores, universities, restaurants, hotels, entertainment venues, parking lots, and businesses.

Private Stations

While the stations above are readily available to the public, most fleets with alternative fuel vehicles install private stations that restrict public use. Private stations also help fleets reach a significant reduction in fuel costs through specially priced alternative fueling contracts.

For example, UPS owns multiple private stations to fuel 200+ medium and heavy-duty CNG and propane delivery trucks that operate in the RPC region. These cleaner-burning trucks help offset approximately 770 tons of harmful emissions in the region's communities each year.

The Port of New Orleans owns multiple private charging stations for their all-electric cars and plug-in hybrid pickup trucks.

Electric charging station in Pontchatoula, LA

Other private stations include one CNG (Kenner) and two private electric charging stations. In addition, most U-Haul locations throughout the region offer fueling for propane vehicles. (Figure 49)

FUEL SAVING TECHNOLOGY

Truck stop electrification (TSE) for heavy-duty trucks is available at the Big Easy Travel Plaza in New Orleans. TSE allows truck drivers to plug in their vehicles to operate necessary services, such as heating, air conditioning, or power for appliances, without the need for engine idling. The system helps significantly reduce fuel costs, engine wear and maintenance costs, as well as diesel emissions.

Local marine fuel provider John W. Stone Oil Distributor LLC owns private shore power stations that plug into and provide electrical power for tugboats at berth, while their main and auxiliary engines are shut down. This engine idling reduction technology helps their fleet reduce an estimated 87,600 gallons of diesel fuel and 1,200 tons of emissions annually.[179]

Abita Brewing Company has committed to cleaner transportation operations by installing Auxiliary Power Units (APUs) on every 18-wheeler in its delivery fleet. Energy saving APUs take over engine operation when a truck is parked, decreasing time spent idling, wasted fuel, and local diesel emissions.

To reduce excessive engine idling and emissions from its operations, New Orleans Public Belt Railroad installed auto-start/shutdown systems on six locomotives, saving the company approximately 90,000 gallons of diesel fuel each year.[180]

ALTERNATIVE FUEL

Alternative Fuels

New Orleans Public Belt Railroad locomotives Photo: Port NOLA/New Orleans Public Belt Railroad

FUEL SAVING PROGRAMS AND POLICIES

Through its Clean Truck Replacement Incentive Program (Clean TRIP), the Port of New Orleans has replaced over 50 drayage trucks that haul cargo to and from its facilities with newer model drayage trucks equipped with cleaner burning engines, which collectively reduce over 500 tons of greenhouse gas emissions each year. Port NOLA plans to continue this program with the support of EPA and State Clean Diesel Project funding. In addition, the Port's Board of Commissioners adopted an Idle Reduction Policy to prevent unnecessary engine idling in Board-owned vehicles and equipment. This policy helped reduce fuel costs, conserve energy, protect employee health, reduce local air pollution, and demonstrate leadership for port tenants and operators.

REGULATIONS AND FUNDING

Southeast Louisiana Clean Fuel Partnership (SLCFP)

www.cleanfuelpartnership.org

As part of a network of almost 100 U.S. Department of Energy-designated Clean Cities Coalitions nationwide, the RPC houses the Southeast Louisiana Clean Fuel Partnership (SLCFP) to help local stakeholders in the public and private sectors implement alternative and renewable fuels, idle reduction measures, fuel economy improvements, and emerging transportation technologies provided by multiple federal and state programs. All programs are working to reduce diesel emissions and support fuel-efficient vehicles and operations. SLCFP is supported by the U.S. Department of Energy (USDOE) and theLouisiana Department of Natural Resources (LDNR) Technology Assessment Division in Louisiana's State Energy Office.

Various tools and funding are available through the following agencies: U.S. Department of Energy (DOE) providing technical and analytical support; U.S. Environmental Protection Agency (EPA) Smart-Way program helping to measure and benchmark progress toward meet growing stringent emission standards using technologies, alternative fuels and idling reduction techniques; U.S Dept. of Transportation - Federal Highway Administration (FHWA) Congestion Mitigation Air Quality (CMAQ) program supporting a reduction in mobile source emissions; Louisiana Department of Environmental Quality (LDEQ) Diesel Emission Reduction Act (DERA) program helping clean diesel and fleet projects; U.S. Department of Energy Alternative Fuels Data Center (AFDC) office providing data and tools to incorporate fuel-saving measures within the freight industry.

Alternative Fuels Data Center website: http://afdc.energy.gov/tools

ALTERNATIVE FUEL

Alternative Fuels

Direct current or DC fast charger for battery electric vehicles (EV) at local Rouses market

Metro Disposal Services, Inc. natural gas storage tank

Converted Airport Shuttle vehicle with propane tank

Photos: SE Louisiana Clean Fuel Partnership

ALTERNATIVE FUEL

Identified Challenges

ECONOMIC COMPETITIVENESS

·Consistent and wide spread alternative fuel distribution facilities are not in place yet

STATE OF GOOD REPAIR

·More trained mechanics familiar with alternative fuels and fuel systems are needed

PERFORMANCE & ACCOUNTABILITY

·Electric vehicle range is limited by a lack of charging stations

-Battery technology development is still maturing

ADVANCED TECHNOLOGY

·Fuel efficient technology adoption requires ongoing regulatory mandates, incentives, industry education and training which is somewhat government dependent

ECONOMIC EFFICIENCY

·Fleets are reticent to invest in alternative fuel engines, fuel, and technology until economy of scale is reached (trained mechanics, fueling facilities, reliable systems)) and risk is managemeable

SAFETY, SECURITY AND RESILIENCY

·Increased battery storage capacity is still needed/ underway but uncertain if it can be attained

·Lithium is not found in the U.S.

-U.S. is dependent on lithium made available by other countries with various forms of government

ENVIRONMENTAL

·Used lithium batteries have an unknown impact on the environment

The categories of challenges are based on FHWA goals. Identified challenges in each category are created from RPC interviews, observations, and general information for the purpose of regional freight planning going forward. This list is to be updated with stakeholder input.

Metro Disposal natural gas vehicle Photo: Metro Disposal Services, Inc.

FREIGHT IN THE FUTURE

FREIGHT IN THE FUTURE

Freight and Energy

ENERGY

The State of Louisiana is one of the leading producers of both natural gas and crude oil in the United States. Approximately 88% of the nation's offshore oil rigs are located off the Louisiana coast.[181] The RPC region is anticipating petrochemical plant expansions, especially near the Port of Plaquemines. This increase in production will create a demand for expansions to rail, port, pipeline, and truck infrastructure.

Today there are six major refineries located along the Lower Mississippi River within the 8-parish region. The refineries convert crude oil into lighter oils and gasoline. These create over a million barrels per stream per day of capacity. Thirteen terminals store and then transfer oil or refined products.[182] Most refineries and terminals are served by some combination of rail, maritime and truck transportation.

As motor vehicles continue to become more fuel efficient, the consumption of petroleum and diesel fuel in the U.S. is expected to decrease. Renewable energy sources will account for a larger share of the total energy supply for all modes of freight transportation as well. Compressed natural gas, liquefied natural gas, and the rapid development of lithium-ion batteries will all be key to the next phases of sustainable energy sources for freight movement in the RPC region.[183]

UPS natural gas delivery truck at the New Orleans Regional Transportation Management Center Photo: SE LA Clean Fuel Partnership

TECHNOLOGICAL ADVANCES

In the race for more efficient and competitive advantage in the freight industry, pursuing and adapting to new technology will be key to growing the U.S. economy.[184] The following technological areas are currently experiencing advancement and development:

5G Networks

Access to digital information quickly and efficiently is key through all phases of freight supply chains. The U.S. and all other industrialized countries are quickly trying to upgrade internet service and access. 5G stands for the "fifth generation" of mobile communications and permits faster data rates with lower latency delays in transmitting data. It also promises hgiher capacity for a more efficient network.[185] Many in the freight industry are pursuing 5G technology to help improve the flow of information and enable automation and artificial intelligence (AI) and other future technology advances.

Internet of Things (IoT)

The Internet of Things is being widely adopted by the entire freight industry as a means of tracking end-to-end business. Remote sensors, dashboards, networks, data storage, gateways, and security are all a part of the Internet of Things ecosystem where instant communication between machines via the internet is a reality. The concept of IoT is that any device with an on and off switch can connect to the Internet and/or connect to each other using a sensor.[186] Being

FREIGHT IN THE FUTURE

Freight and Technology

able to track where a product is moving and gaining detailed information about how it is being stored and shipped enables the freight industry to work more efficiently and with more transparency. Business Insider Intelligence, a business news organization, forecasts there will be more than 64 billion IoT devices installed around the world by 2026. Additionally, companies and consumers are predicted to spend nearly $15 trillion on IoT devices, solutions, and supporting systems from now through 2026.[187]

Block Chain Technology

Much like the Internet of Things, block chain technology is being used in freight industries to capture and verify transactions between parties. It is a unique decentralized technology that records the quantity, movement, location and transfer of materials, raw ingredients, and finished products. Block chain acts like a "smart contract" stored within the movement of goods in the supply chain that captures various data that can be verified by all stakeholders, providing transparency and access to information for all parties.[188]

Advanced Driver Assistive Systems

Freight moving by truck across the U.S. is increasingly the dominant mode of transportation. Connected and automated technologies such as Advanced Driver Assistive Systems (ADAS) hold great potential to significantly reduce crashes, improve capacity and enhance mobility for all transportation users. Many of the following systems are available in today's latest truck and freight vehicles:

·Advanced Radar
·LiDAR sensor (elevation data)
·Automatic emergency breaking (AEB)
·Crash Imminent braking (CIB)
·Adaptive Cruise Control (ACC)
·Forward Collision Warning (FCW)
·Blind Spot Detection (BSD)
·Lane Departure Warning (LDW)
·Active Electric Steering (AES)
·Lane Keeping Assist (LKA)
·Camera Monitoring Systems (CMS)
·Adaptive Driving Beam (ADB) Headlighting

Truck platoon illustrating the use of assistive technology
Photo rendering: U.S. DOT Federal Motor Carrier Safety Administration

In anticipation of more autonomous trucks NHTSA recently announced the expansion of the Automated Vehicle Transparency and Engagement for Safe Testing (AV TEST) Initiative from a pilot to a full program. It is an on-line tracking tool providing data on the on-road testing and safety performance of automated driving systems.[189]

Truck platooning

Truck platooning, where trucks synchronize operations and run closely together along freight networks to improve fuel efficiency and safety, is possibly one of the first visible elements of autonomous shipping. Louisiana authorized semi-autonomous truck platooning in 2018 and became one of 29 states to approve fully autonomous technology - passing policy into law, effective August 1, 2019.[190] Vehicle to Vehicle (V2V) and Vehicle to Infrastructure (V2I) communication is also developing rapidly. V2V wirelessly exchanges information about the speed and position of surrounding vehicles to avoid crashes and reduce congestion.[191] V2I is bi-directional and enables vehicles to share information with RFID readers, signage, cameras, lane markers, streetlights and other devices, which support highway navigation systems.[192]

Batteries

Battery powered electric commercial vehicles hold promise for reducing pollutants, but mileage or range is limited compared to traditional petroleum-based fuel. Advancements in battery technology are showing some success, but more is necessary to make electric vehicles as ubiquitous as gas fuel powered vehicles. Many scientists are working on next-generation

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Railroads and highway departments are beginning to use drones to conduct bridge inspections Photo: dan_hennage_lr

batteries that store more energy and charge faster with the benefit of low emissions.[193]

Unmanned Aircraft Systems (UAS)

The U.S. DOT has pursued innovative integration of unmanned aircraft systems since 2015 developing an air traffic management system for drones operating below 400 feet and beyond the visual line of sight.[194] Moreover, drones are widely being considered by many freight delivery companies, reducing the need for vehicle travel for smaller consumer package delivery.[195]

Drone technology is playing a bigger part in infrastructure inspections that support the movement of freight, removing the need for crews traditionally using a combination of ladders, ropes, and aerial platforms to inspect bridges. Drones are relaying the information more safely and accurately through video and sensor recording.[196]

3D Printing

Some aspects of mass production are being replaced by computer-driven digital printing (3D) printing, also known as Additive Manufacturing (AM) and major impacts are expected. Essentially it allows for increased final production close to points of consumption. This may have the effect of disrupting traditional manufacturing, simplifying steps in the supply chain through local on-demand production, reducing inventory and warehousing needs, and changing goods movement patterns.[197]

Freight supply chain resiliency and adaptation to both economic fluctuations and world events is key for freight flow in the future. It is anticipated that trade between the U.S. and growing economies such as Pacific Rim, India, Cambodia, and Mexico are likely to increase.[198] The Panama Canal also expanded, opening June 26, 2016, to allow for deeper, longer, and wider "New Panamax" vessels that will accommodate the largest number of TEU containers to date. This means trade at U.S. ports, including major ports in the RPC's planning area may expand, particularly for agricultural products. Improved landside access and dredging to accommodate these larger ships is critical to capitalize on this increase in freight flows in the region.[199]

Widened Panama Canal Photo: MARAD

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TRADE WARS

Beginning in 2018, a tariff trade war began impacting the global freight supply chain. As political tensions increased intermittently from 2018 to the present, especially between the U.S. and China, fluctuations caused a sharp decline in inexpensive Chinese imports and realignment with other countries for U.S. manufacturing supplies. Freight forwarders and Customs Brokers were forced to quickly assess and respond to flucuating regulations and determine the best possible transportation solution for their customers.[200] Many businesses had to re-strategize, including transportation based businesses.

National Oceanic and Atmospheric Administraton research vessel docked at Port NOLA Administration Building

COVID-19 PANDEMIC

In January 2020, the unprecedented worldwide coronavirus pandemic (COVID-19) weakened the global supply chain, adding more difficulties beyond the trade war. Within five weeks of Stay at Home orders, normal supply and demand trends changed dramatically as business slowed, freight volumes dropped precipitously, and operating conditions were constrained by the threat of the virus.[201] The freight industry experienced cancellations of ship sailings and in New Orleans, the maritime industry had to delay ships from entering port. Many warehouses and freight-related industries had to halt operations due to mandatory worker health precautions. Truck rates fell as truck availability exceeded load posts. Intermodal rail volumes sunk in the first 6 months of 2020 to near decade lows as imports into the U.S. slowed.[202]

Twelve months into the pandemic there was increased demand throughout the U.S. freight supply chain to distribute medical goods such as masks, ventilators, and test kits. The federal government turned to FedEx and UPS to transport supplies bound for front-line healthcare workers early in the pandemic. They also began transporting vaccines in December 2020. Freight helped carry supplies to set up temporary hospitals as peaks in the number of COVID-19 patients surged multiple times in many states and responded to increased consumer demand for home deliveries as people quarantined at home.[203]

While vaccines were developed and approved in late 2020 and early 2021, the trajectory of the coronavirus may ultimately drive overall freight supply and demand until the virus and its more deadly variants are no longer a threat to the global population.

CLIMATE CHANGE

The science assessing our world climate is more sophisticated than ever before. An international group of scientists have agreed upon essential climate variables (ECVs) to measure and monitor air, land and ocean weather. Multiple sources of data and types of data and techniques contribute to an immense dataset, which provides new insights and suggests a need for improved policy to address recent concerning data findings and future predictions.[204]

The National Oceanic and Atmospheric Administration (NOAA) states that global average atmospheric carbon dioxide is higher than at any point in the past 800,000 years.

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A record high was reached in 2020 at 414.49 parts per million or ppm.[205] Carbon that was stored by fossil plants and algae through photosynthesis over millions of years has been released quickly by human activity, mainly through the burning of fossil fuel (oil and gas), with deforestation, biomass burning and cement production also contributing. The release of gases that trap solar radiation (heat) in the atmosphere is termed greenhouse gas emissions (GHG).[206]

Freight transportation plays a large role in both transporting oil and gas and burning it. The Bureau of Transportation Statistics Pocket Guide to Transportation 2021 edition tracks Greenhouse Gas Emissions by Sector (Industry, Transportation, Commercial, Residential and Agriculture) based on data they receive from the U.S. Environmental Protection Agency (EPA).[207] The Transportation Sector emitted the second highest amount of carbon dioxide in the U.S., approximately 1,800 teragrams in 2018, slightly behind the Industry Sector. (one teragram equals one million metric tons) Among Transportation modes (Highway, Air, Water, Rail and Pipeline) the Highway mode emitted the highest volume of carbon dioxide by far, (84.4%). This was followed by Air (8.9%), Pipeline (2.7%), Rail (2.3%), and Water, (1.6%).[208]

Improving incorporation of climate resilience technologies and policies within the world of freight will be needed to halt the results of rapidly rising carbon emissions leading to climate change, and associated extreme weather events, extreme temperatures, hotter ocean temperatures and rising sea levels. Avenues of adaptation are needed to balance the human need for freight with keeping our planet and people healthy.[209]

Subsidence and flooding are also major environmental issues in the Greater New Orleans region causing damage to transportation infrastructure including pavement, rail, and landside structures. Runoff from impermeable surfaces is a major cause of water pollution and strains drainage infrastructure. These impacts of climate change will be a major cost to maintain the transportation system in the future.[210]

A resilient supply chain that is well-connected, reliable, and safe encourages sustainable development patterns. It will be critical to ensure that the region's physical transportation infrastructure is well-maintained, resilient, and redundant so it can withstand and recover quickly from extreme events like hurricanes and flooding. It is a priority that the RPC play an integral role to plan for improved access to basic needs and economic opportunities, which not only enhance the reliability of the freight system, but also improve economic opportunities for Greater New Orleans.[211] Now more than ever, rapid adaptation is a necessary element in freight business dynamics and environmental health.

CREATING A REGIONAL FREIGHT MOBILITY PLAN

The Freight Profile describes regional mobility as it is today through data, mapping, research, and interviews with local stakeholders. It lays a foundation to identify new challenges, define needs and identify the opportunities that will benefit each mode within the first Regional Freight Mobility Plan.

The Freight Mobility Plan is the next step to weave regional goals for land use, clean air, public safety, water management, climate concerns and the economy into freight planning processes and work strategically across modes. Given the economic upheaval from COVID-19 impacts it could become a vehicle to support economic revitalization around freight.

The Region Planning Commission's strength is in facilitating strategic interactions and partnering with parish leadership to effect change. A Freight Mobility Plan can assist with jointly identifying and prioritizing freight challenges, ensuring equitable and open access in planning conversations and benefit from the knowledge of Freight Roundtable stakeholders. The initiative would respond regionally and multi-modally about freight obstacles and solutions. In addition, a Freight Mobility Plan can define what rapid adaptation protocols should look like at a regional scale and act as a substantial guidance document that informs the Metropolitan Long Range Plans and RPC Transportation Policy Committee project funding priorities.

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Appendix A - Freight Institutions

Freight Related Insitutitions	Trucking	Maritime	Rail	Air	Pipeline	Website
Federal						
U.S. Department of Transportation (USDOT)	X	X	X	X	X	www.transportation.gov
Bureau of Transportation Statistics	X	X	X	X	X	www.bts.gov
Federal Highway Administration (FHWA)	X					www.fhwa.dot.gov
National Highway Traffic Safety Administration (NHTSA)	X					www.nhtsa.gov
U.S. Maritime Administration (MARAD)		X				www.maritime.dot.gov
Federal Rail Administration (FRA)			X			www.fra.dot.gov
Federal Aviation Administration (FAA)				X		www.faa.gov
U.S. Army Corps of Engineers (USACE)		X				www.usace.army.mil
U.S. Coast Guard (USCG)		X				www.uscg.mil
U.S. Department of Homeland Security (DHS)	X	X	X	X	X	www.dhs.gov
U.S. Customs and Border Protection (CBP)	X	X	X	X	X	www.cbp.gov
Surface Transportation Board (STB)			X			www.stp.gov
U.S. Department of Commerce/Export Assistance Center	X	X	X	X	X	www.commerce.gov
U.S. Department of Energy (DOE)	X	X	X	X	X	www.energy.gov
State						
Louisiana Department of Transportation and Development (DOTD)	X	X	X	X		wwwsp.dotd.la.gov
Louisiana Highway Safety Commission (LHSC)	X					www.lahighwaysafety.org
Louisiana Office of Motor Vehicles (OMV)	X					www.apps.dotd.la.gov
Louisiana Economic Development (LED)	X	X	X	X	X	www.opportunitylouisiana.com
Louisiana Department of Natural Resources (DNR)					X	www.dnr.louisiana.gov
Louisiana State Police (LSP)	X					www.lsp.org
Louisiana Department of Environmental Quality (DEQ)	X	X	X	X	X	www.deq.louisiana.gov
Operation Lifesaver Louisiana			X			www.community.oli.org/state/la
Louisiana Motorist Assistance Patrol (MAP)	X					wwwsp.dotd.la.gov
Louisiana Center for Analytics and Research in Transportation	X	X				www.carts.su.edu
Regional						
Regional Planning Commission for Jefferson, Orleans, Plaquesmines, St. Bernard, St. Charles, St. John the Baptist, St. Tammany and Tangipahoa Parishes	X	X	X	X	X	www.norpc.org
Southeast Louisiana Flood Protection Authority - West		X				www.slfpaw.org
Southeast Louisiana Flood Protection Authority - East		X				www.floodauthority.org
Port of New Orleans		X				www.portnola.com
Port of South Louisiana		X				www.portsl.com
St. Bernard Port, Harbor and Terminal District		X				www.stbernardport.com
Port of Plaquemines		X				www.portofplaquemines.com
Port Manchac		X				www.portmanchac.com
New Orleans Public Belt Railroad (NOPB)			X			www.railnola.com
ILA #3000		X				www.unionfacts.com/lu/513292/ILA/3000

Appendix A - Freight Institutions

Freight Related Insitutitions	Trucking	Maritime	Rail	Air	Pipeline	Website
Business						
New Orleans Terminal LLC		X				www.notml.com
Ports America		X				www.portsamerica.com
Union Pacific Railroad UP)			X			www.up.com
Norfolk Southern Railway (NS)			X			www.nscorp.com
Burlington Northern Santa Fe Railway (BNSF)			X			www.bnsf.com
Kansas City Southern (KCS)			X			www.kcsouthern.com
CSX			X			www.csx.com
Canadian National Railroad (CN)			X			www.cn.ca
New Orleans Gulf Coast Railway (NOGC)			X			www.rgpc.com
Associations/Nonprofits						
American Association of Railroads (AAR)			X			www.aar.org
American Short Line and Regional Railroad Association (ASLRRA)			X			www.aslrra.org
American Trucking Associations (ATA)	X					www.trucking.org
Louisiana Motor Transport Association (LMTA)	X					www.lmta.la
International Freight Forwarders and Customs Brokers Association of New Orleans (IFFCBANO)	X	X	X	X	X	www.iffcbano.org/abo
World Commerce Association (WCA)	X	X	X	X	X	www.wcaworld.com
International Maritime Organization (IMO)		X				www.imo.org
Commercial Vehicle Safety Alliance (CVS)	X					www.cvsa.org
Louisiana Maritime Association/Big River Coalition (LAMA)		X				www.louisianamaritim
Ports Association of Louisiana (PAL)		X				www.portsoflouisiana.
World Trade Center of New Orleans (WTC)		X				www.wtcno.org
Trucking Industry Defense Association (TIDA)	X					www.tida.org
New Orleans Traffic and Transportation Club	X	X		X		www.trafficclubnola.cc
Gulf Intracoastal Canal Association (GICA)		X				www.gicaonline.com
The American Waterways Operators (AWO)		X				www.americanwaterw
The American Public Gas Association (APGA)					X	www.apga.org

Appendix B - Local Truck Routes

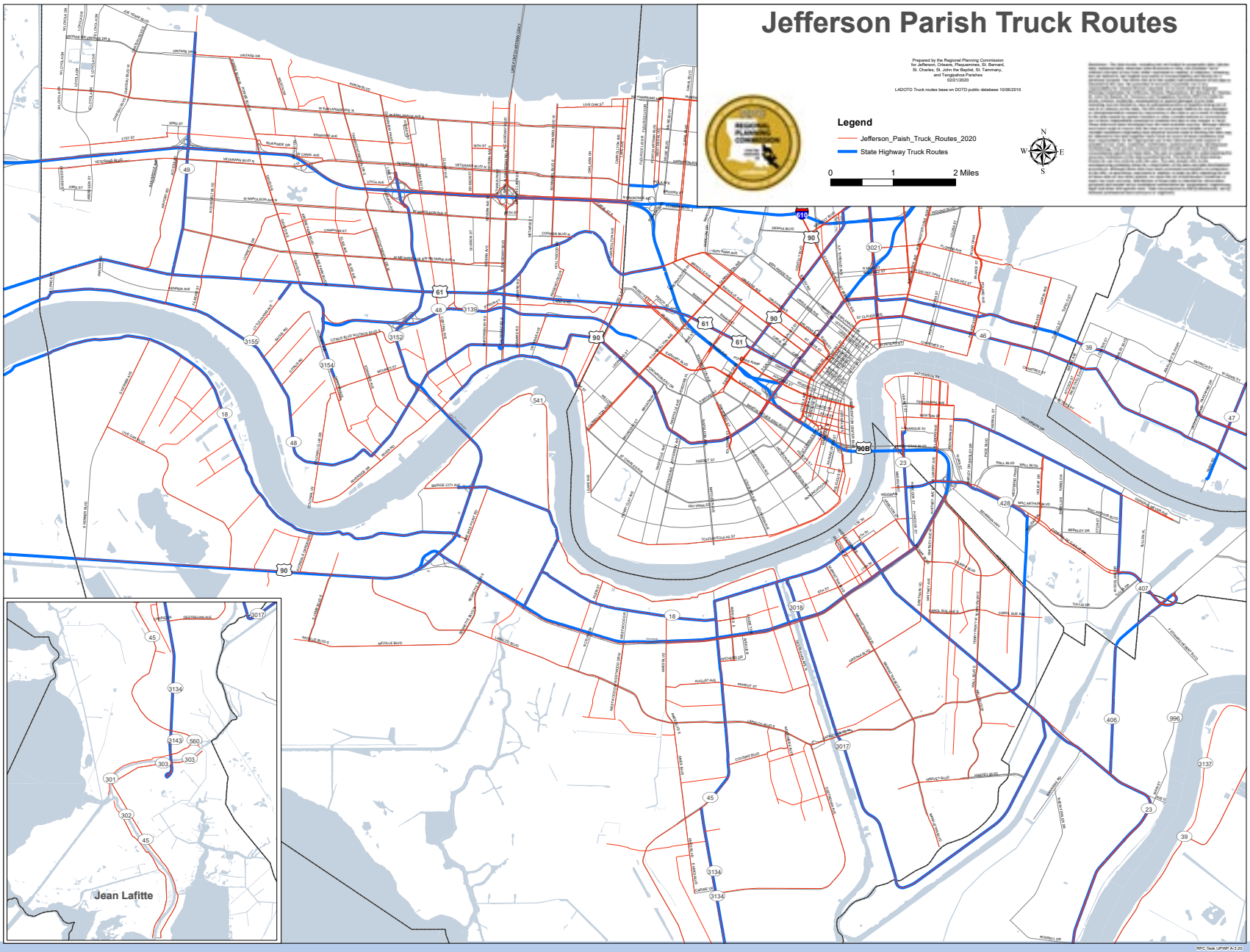

Figure 50. Jefferson Parish Truck Route Map

Appendix B - Local Truck Routes

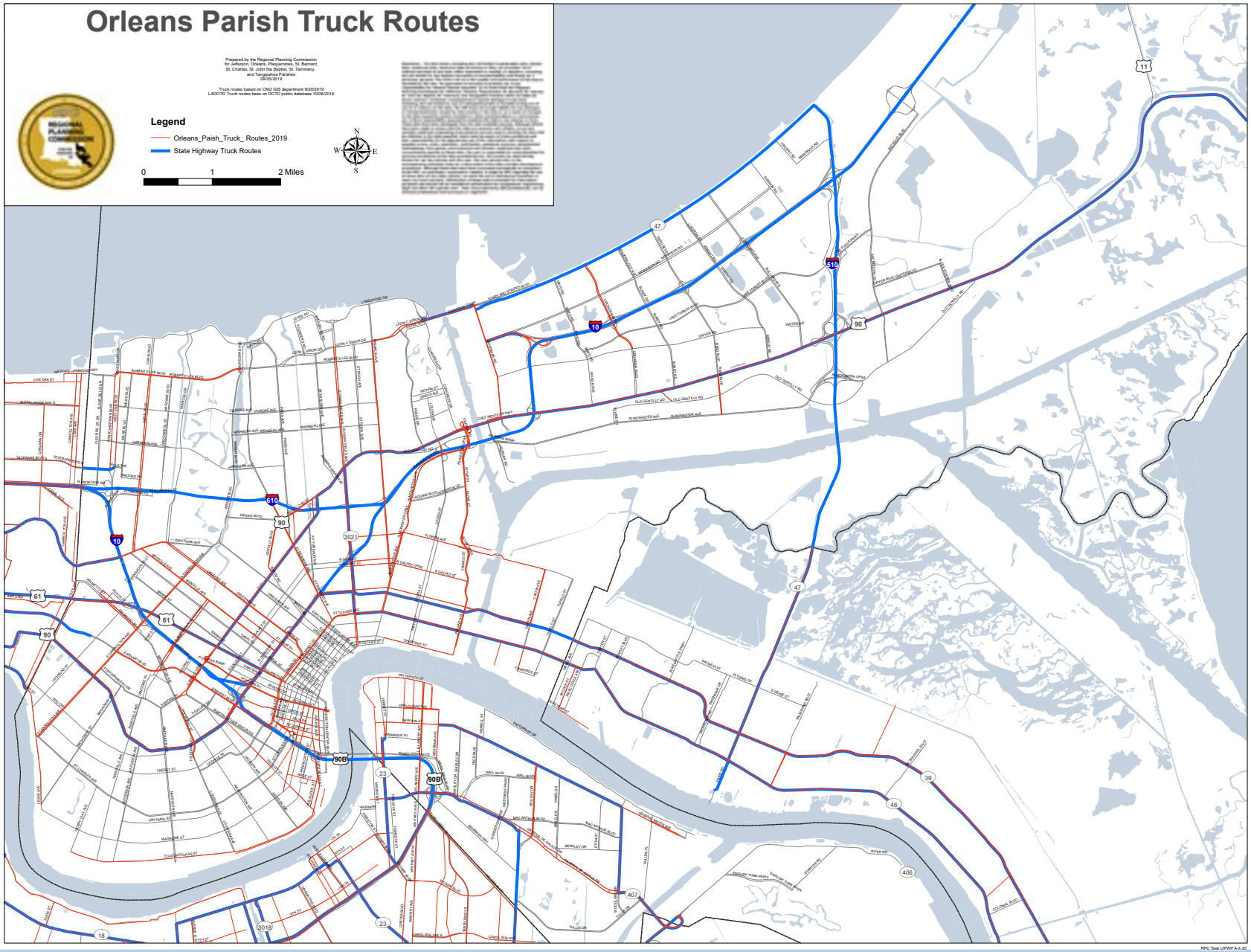

Figure 51. Orleans Parish Truck Route Map

Appendix B - Local Truck Routes

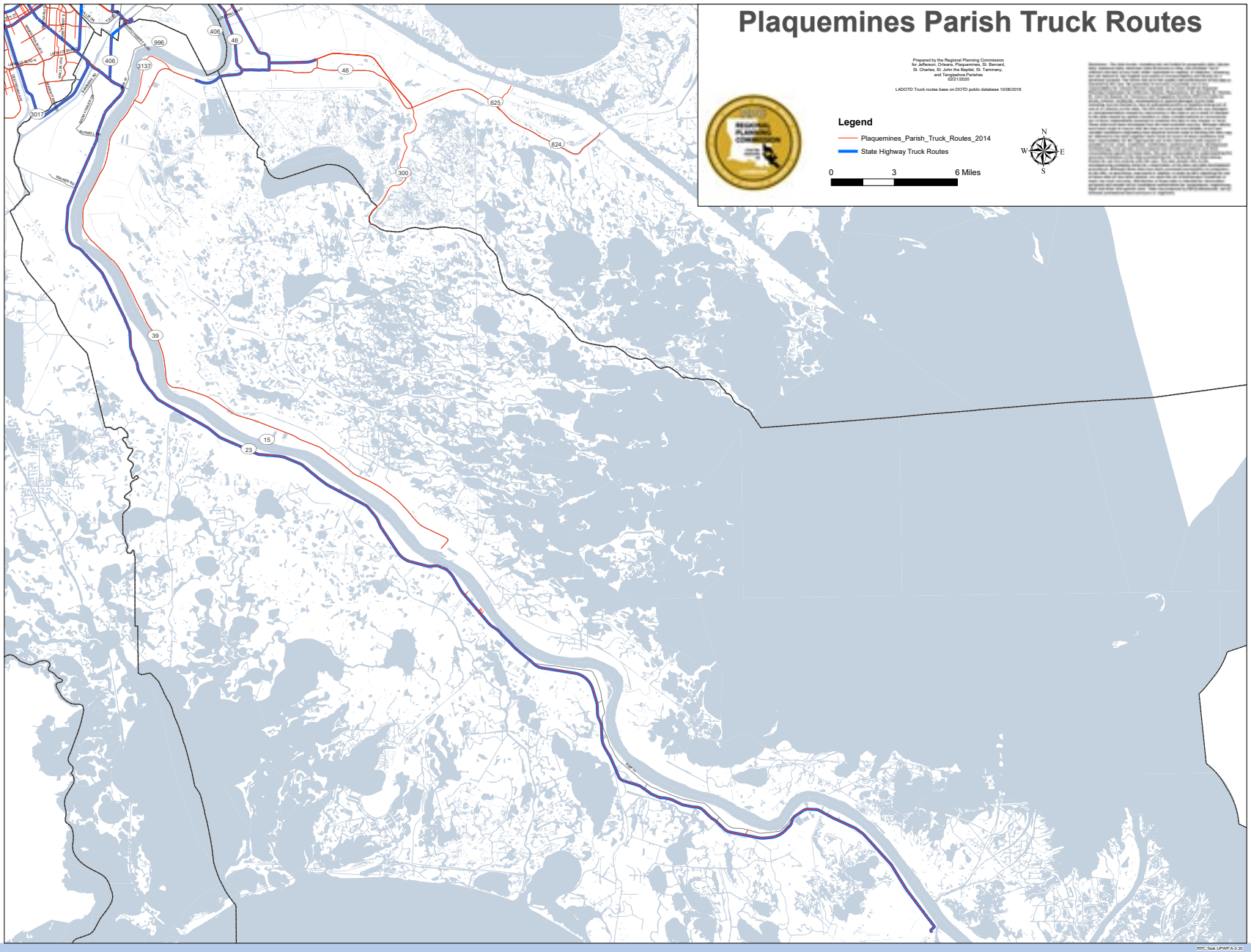

Figure 52. Plaquemines Parish Truck Route Map

Appendix B - Local Truck Routes

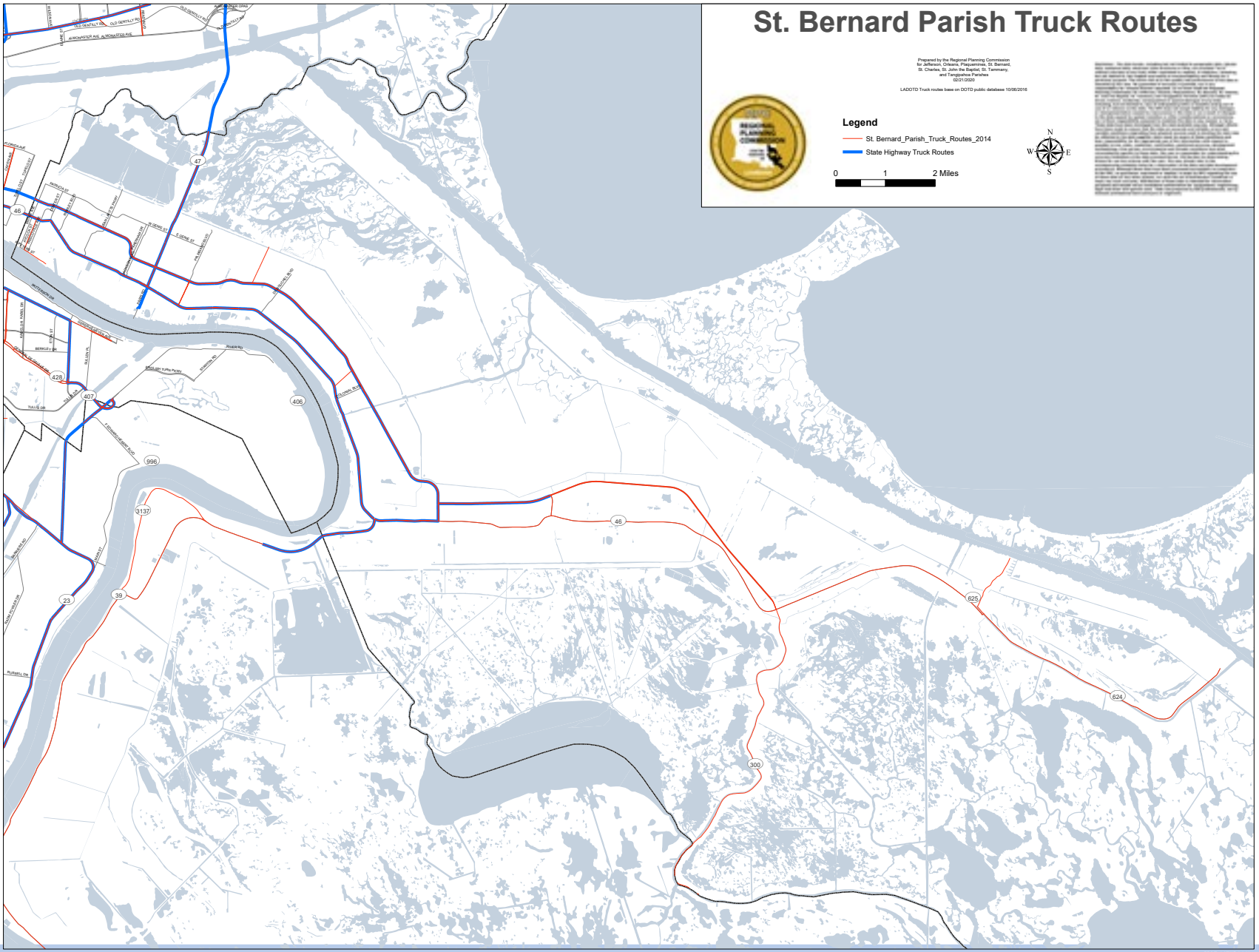

Figure 53. St. Bernard Parish Truck Route Map

Appendix B - Local Truck Routes

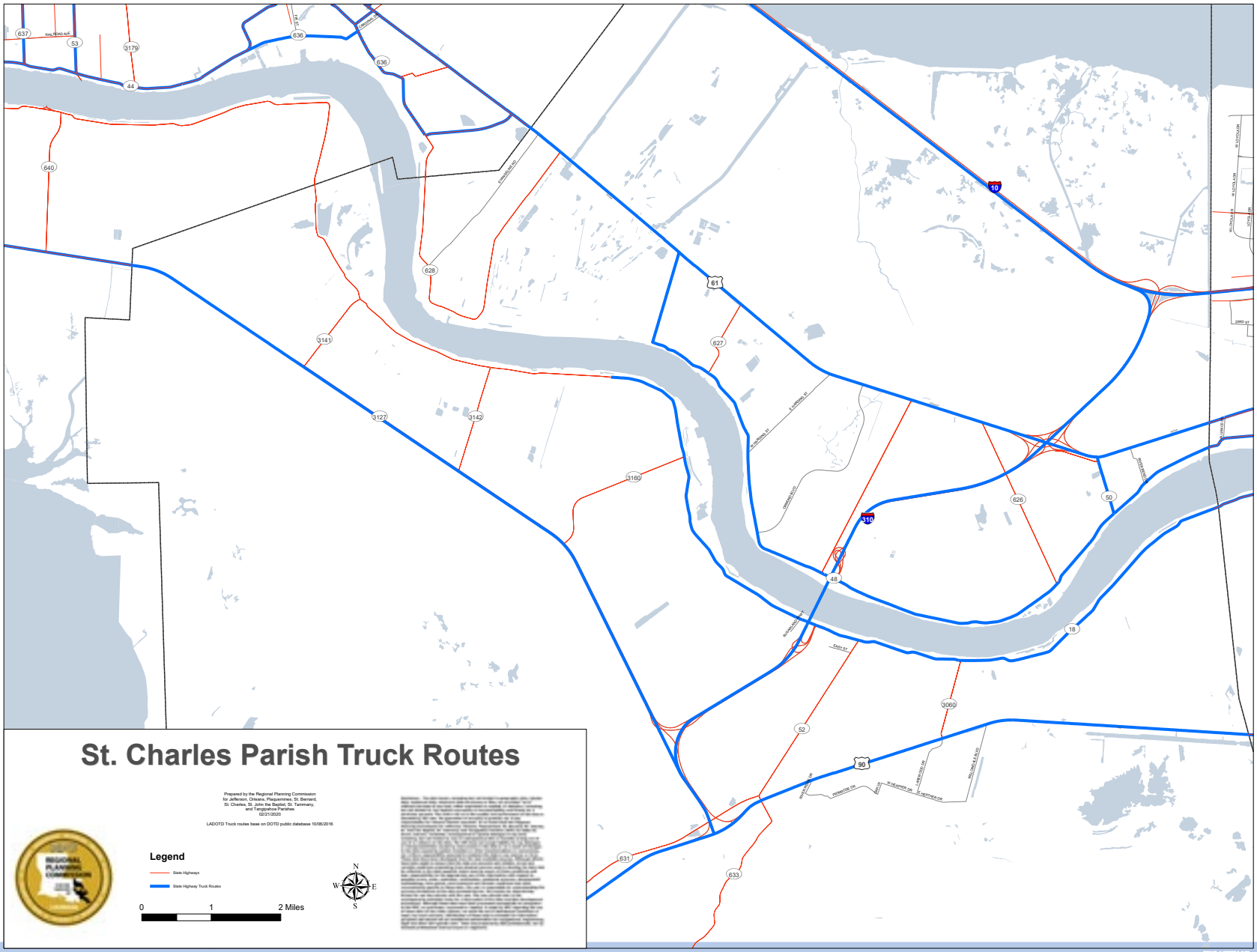

Figure 54. St. Charles Parish Truck Route Map

Appendix B - Local Truck Routes

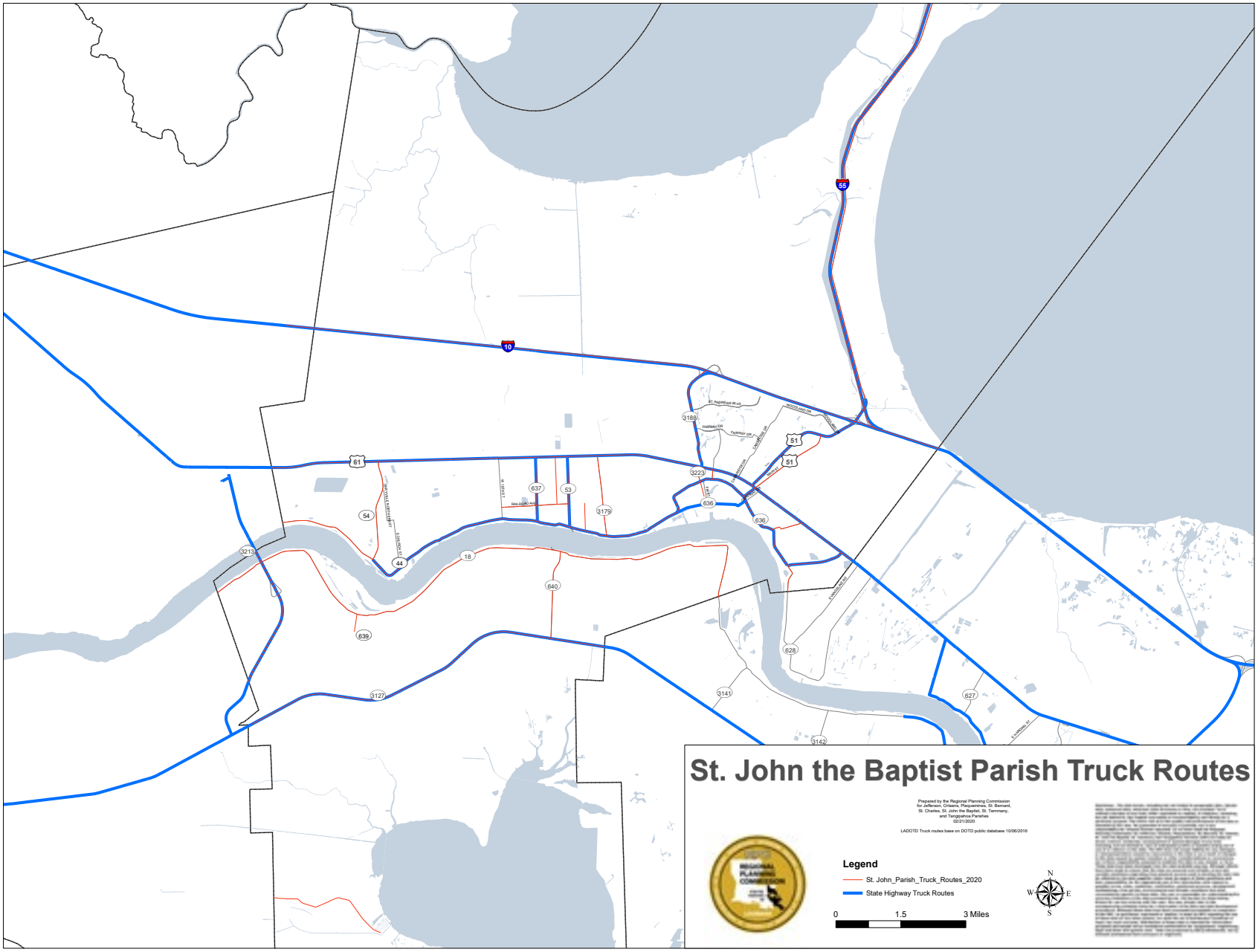

Figure 55. St. John the Baptist Parish Truck Route Map

Appendix B - Local Truck Routes

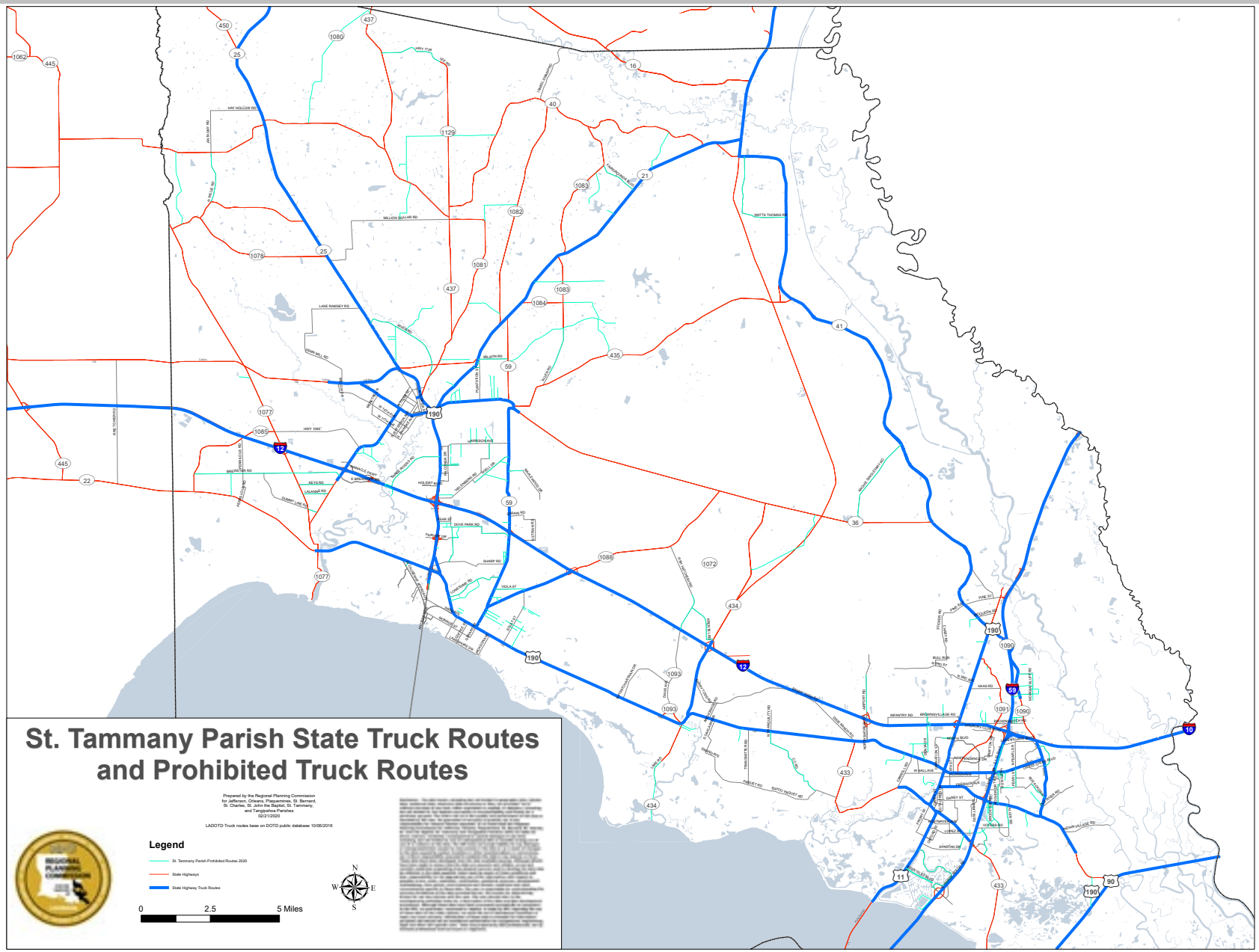

Figure 56. St. Tammany Parish Truck Route Map

Appendix B - Local Truck Routes

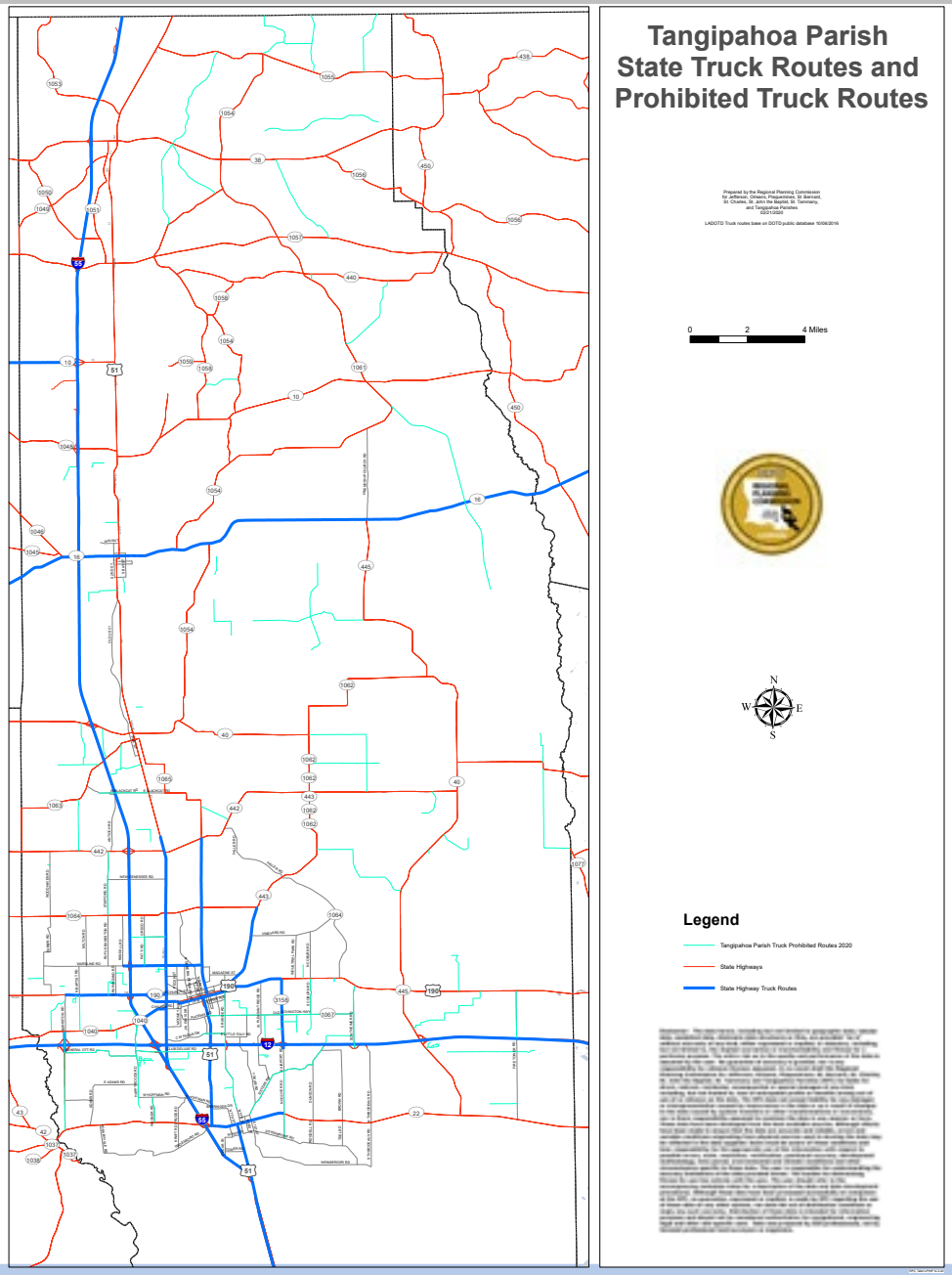

Figure 57. Tangipahoa Parish Truck Route Map

Appendix C - On-System Bridges by Parish

Parish	Posted Load	Number of Bridges	Max Length of Bridge Span	Total Length of Bridge Including Abutments
Jefferson		**152**	**2.56969697**	**37.54375**
	-----	144	2.460037879	37.08200758
	15-25	5	0.066287879	0.348106061
	20-35	2	0.013257576	0.071969697
	CL---	1	0.030113636	0.041666667
Orleans		**241**	**5.115909091**	**77.68598485**
	-----	229	4.872916667	71.69109848
	05---	1	0.028409091	4.720075758
	15-Oct	1	0.030681818	0.04280303
	15-25	4	0.074242424	0.601704545
	20-35	1	0.006628788	0.019886364
	CL---	5	0.103030303	0.610416667
Plaquemines		**12**	**0.136363636**	**1.508333333**
	-----	12	0.136363636	1.508333333
St. Bernard		**14**	**0.11155303**	**0.777840909**
	-----	13	0.086363636	0.604166667
	15-Oct	1	0.025189394	0.173674242
St. Charles		**80**	**1.305871212**	**47.89431818**
	-----	78	1.28125	47.77007576
	15-Oct	1	0.003598485	0.021590909
	15-25	1	0.021022727	0.102651515
St. John the Bap		**37**	**0.332007576**	**42.31590909**
	-----	37	0.332007576	42.31590909
St. Tammany		**236**	**1.901325758**	**12.29318182**
	-----	214	1.693560606	11.10643939
	15-Oct	4	0.026893939	0.210984848
	15-25	6	0.087310606	0.511174242
	20-35	3	0.039583333	0.23655303
	25-40	8	0.033712121	0.167045455
	CL---	1	0.020265152	0.060984848
Tangipahoa		**311**	**2.149810606**	**27.31060606**
	-----	287	1.966287879	26.57083333
	15-Oct	2	0.01780303	0.104545455
	15-25	9	0.042045455	0.219128788
	20-35	7	0.093939394	0.233901515
	25-40	4	0.014772727	0.060037879
	CL---	2	0.014962121	0.122159091
Region	**Grand Total**	**1083**	**13.62253788**	**247.3299242**

Table 28. On-System Bridges by Parish by Load, Number and Length Source: LADOTD

Appendix D - Truck Size and Weight Limits

Louisiana

The laws governing truck size and weight in the State of Louisiana are found in La. Rev. Stat. Ann. §§32:380 et seq. (available on the State's Web site at http://www.legis.state.la.us/lss/lss.asp?folder=106).

Grandfather Provision Allowing Higher Weights on Interstate Highways

Sugarcane: The Secretary issues annual special permits to persons who operate trucks that haul sugarcane. These permits allow up to 100,000 lbs. gross vehicle weight on any State-maintained highway, including Interstate highways, for up to 100 days. Beginning August 1, 2012, the Secretary may not issue an annual special permit to any owner or operator of a vehicle hauling sugarcane who has not added an additional single axle with dual mounted tires on the sugarcane trailer for a total of six axles for the vehicle and trailer combination.[60] (La. Rev. Stat. Ann. §32-387.7)

Summary of State Provisions that Exceed Federal Limits

With respect to trucks operating on the NHS in Louisiana, several provisions in State law allow trucks to exceed some elements of Federal limits:

1. Louisiana allows axle tolerances on non-Interstate highways: an additional 2,000 lbs. for single axles and 3,000 lbs. for tandum, tridum, or quadrum axles.[61]
2. Vehicles with a tridum or quadrum axle are allowed up to 88,000 lbs. GVW on any non-Interstate State highway and 83,400 lbs. GVW on Interstates.
3. Louisiana State statute allows for several axle and GVW exemptions for various types of vehicles and commodities.
4. Several bulk commodities are exempt from the FBF in Louisiana.

Regular Operations

The gross weight of vehicles in regular operations (operating without a special permit) is governed by State axle and gross weight limits as well as the State bridge formula, which has been adopted from the FBF. See Exhibit 31 for a summary of Louisiana weight provisions under regular operations (La. Rev. Stat. Ann. §32:386).

Exhibit 31: Summary of Louisiana Truck Weight Limits for Vehicles in Regular Operations	
Single Axle	20,000 lbs. 18,000 lbs. on high pressure or solid rubber tires
Tandem Axle	34,000 lbs. 32,000 lbs. on high pressure or solid rubber tires
Tridem Axle	42,000 lbs.
Gross Weight	80,000 lbs. 83,400 lbs. for vehicle combinations with tridum or quadrum axles on Interstate highways 88,000 lbs. for vehicle combinations with tridum or quadrum axles on non-Interstate highways
Other	Axle tolerances on non-Interstate highways: additional 2,000 lbs. for single axles and 3,000 lbs. for tandem, tridem, or quadrum axles Quadrum axle: 50,000 lbs. 650 lbs. per inch width of tire

Exemptions and Special Operations: see https://ops.fhwa.dot.gov/freight/policy/rpt_congress/truck_sw_laws/app_a.htm#la

Appendix E - LOTTR and TTRI Summary

LOTTR AND TTRI CALCULATION STEPS:

The Level of Travel Time Reliability (LOTTR) indicates whether trips on a given road segment consistently take the same amount of time to complete, regardless of time, day, or other conditions. LOTTR is calculated on the Interstate system and on the non-Interstate National Highway System (NHS). LOTTR is calculated through these steps:

- Travel time on each roadway segment is measured in 15-minute intervals throughout the year, and these measurements are grouped into four time periods: 6 AM to 10 AM on weekdays; 10 AM to 4 PM on weekdays, 4 PM to 8 PM on weekdays; and 6 AM to 8 PM on weekends.

- The 50th percentile travel time and 80th percentile travel time is calculated on each roadway segment, for each time period. The 80th percentile travel time is divided by the 50th percentile to derive a reliability ratio. Any road segment with a ratio less than 1.5 during any time period is considered reliable.

- All road segments are weighted by individual segment length, segment annual average daily traffic, and average vehicle occupancy. The number of weighted, reliable segments is divided by the weighted total of all road segments to determine what percentage of the roadway system is reliable. A measurement of 100% is ideal. It indicates that travel time on the road way system is perfectly reliable.

The Truck Travel Time Reliability Index (TTRI) is a measure of the reliability of truck travel times on the Interstate system. Truck TTRI is calculated through these steps:

- Travel time for trucks on each Interstate segment is measured in 15-minute intervals throughout the year, and these measure ments are grouped into five time periods: 6 AM to 10 AM on weekdays; 10 AM to 4 PM on weekdays, 4 PM to 8 PM on weekdays; 6 AM to 8 PM on weekends; and 8 PM to 6 PM on all days.

- The 50th percentile and 95th percentile travel time is calculated on each roadway segment, for each time period. The 95th percentile travel time is divided by the 50th percentile travel time to derive a reliability ratio.

- The segment length for each Interstate segment is weighted by its highest (worst) ratio. The total of all weighted segments is divided by the total length of all Interstate segments. The resultant ratio is the Truck TTRI for the entire Interstate system. An index of 1.0 is ideal. It indicates that truck travel time on the Interstate is perfectly reliable.