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Introduction

Long range transportation planning is a cooperative process conducted by the Metropolitan Planning Organization (MPO), in coordination with the Louisiana Department of Transportation and Development (LADOTD), transit operators, numerous stakeholders from throughout the region, and the public to create a vision for the future of the community. The process, which is prescribed by federal regulations, is designed to assist the MPO in prioritizing short- and long-term investments in the regional transportation system over the next 25 years through a proactive public participation process that involves all users of the transportation system.

The Northwest Louisiana Council of Governments (NLCOG), the MPO for Bossier and Caddo Parishes, initiated an update to the Long Range Transportation Plan (LRTP) in June 2014. The 2040 LRTP was developed over a 21-month period, during which time several rounds of public and stakeholder meetings were conducted, technical data was analyzed, existing plans and studies were compiled and reviewed, and potential projects were evaluated according to community goals and performance based criteria. The resulting product is a comprehensive blueprint for the future of the transportation system that takes into account the needs of all modes and users.

The planning area for the 2040 LRTP encompasses the entirety of Bossier and Caddo Parishes, occupying the northwestern-most corner of Louisiana. Figure 1-1 shows the boundary of the LRTP study area, as well as the location of population centers, major transportation facilities, and major environmental features within the MPO.

Metropolitan Planning Organization

With the passage of the Federal Highway Act of 1962, all major cities within the United States were required to adopt an LRTP to guide the long term development of the transportation system. The Act established specific rules and regulations for carrying out the long range transportation planning process, and required the formation of MPOs for any urbanized area (UZA) with a population greater than 50,000. Under federal regulations, MPOs are responsible for carrying out a continuing, cooperative, and comprehensive (3-C) planning process, in cooperation with the state and local governments, to develop the LRTP and determine how best to invest federal transportation funding in the region.

The Northwest Louisiana Council of Governments (NLCOG)

Following the 1970 decennial Census, the Census Bureau determined that the area in and around the cities of Shreveport and Bossier City exceeded a population of 50,000, and as such, required the designation of an MPO to oversee regional transportation planning for the area. NLCOG became the designated MPO for the Shreveport-Bossier City Urbanized Area (UZA), as well as the towns of Benton, Blanchard, Greenwood, Haughton, Oil City, Plain Dealing, and Vivian, and the unincorporated areas of Bossier and Caddo Parishes. According to federal regulations, the planning area for which MPOs are responsible must include the urbanized area, as well as the area expected to be urbanized within the next 25 years.

NLCOG consists of a Policy Committee, a Technical Coordinating Committee (TCC), and MPO staff. The role of the MPO staff is to complete administrative tasks and other activities in support of the transportation planning process, including the development of the LRTP.
Figure 1-1: Study Area
Transportation Policy Committee

Elected and appointed officials comprise the Policy Committee, which is responsible for approving and adopting all the transportation planning activities and programs of the MPO. Membership of the Policy Committee is governed by agreement between the affected local governments and the governor of Louisiana, and is reviewed periodically to ensure adequate representation of all parties. Membership consists of 8 voting members and 3 non-voting members, with representatives from the following member agencies as detailed below.

**Voting Members**
- Bossier Parish Police Jury – Parish Administrator
- Caddo Parish Commission – Parish Administrator
- Bossier City – Mayor
- Shreveport – Mayor
- Bossier Metropolitan Planning Commission – Director
- Shreveport Metropolitan Planning Commission – Director
- Caddo-Bossier Parishes Port Commission – Director
- SporTran
- LADOTD District Representative – District 04 Administrator

**Non-voting Members**
- Federal Highway Administration
- Federal Transit Administration

**Technical Coordinating Committee (TCC)**

The TCC serves in an advisory role to the Policy Committee and is responsible for professional and technical review of work programs, policy recommendations, and transportation planning activities. Membership consists of local and state technical and professional personnel knowledgeable in the transportation field. Membership is capped at 29 members, including the following:

- City of Shreveport – City Engineer
- City of Shreveport – Traffic Engineer
- City of Shreveport – Environmental Services Director
- City of Bossier City – City Engineer
- City of Bossier City – Traffic Engineer
- Caddo Parish – Director of Public Works
- Caddo Parish – Assistant Director of Public Works
- Bossier Parish – Parish Engineer
- Bossier Parish – Project Manager
- SporTran – General Manager
- Port of Caddo-Bossier – Director of Engineering and Planning
- Shreveport/Caddo – Metropolitan Planning Commission – Senior Planner
- Bossier City/Parish – Metropolitan Planning Commission – Senior Planner
- LADOTD District 04:
  - Traffic Engineer
  - Maintenance Engineer
  - Public Information Officer
- LADOTD Headquarters:
  - Transit Section
  - Urban Program Project Manager
  - Planning/Program Planning Manager
  - Planning/Program Project Engineer
- FHWA – Louisiana District 04 Area Engineer
- FTA – Community Planner
- Shreveport Regional Airport – Assistant Director of Operations
- Barksdale Air Force Base – Base Community Planner
- NLCOG – Transportation Planning Manager
- NLCOG – Public Involvement Coordinator/Title VI Officer
- NLCOG – Executive Director (only in case of tie vote)
Purpose of the Long Range Transportation Plan

As the MPO for Bossier and Caddo Parishes, NLCOG is responsible for determining which transportation projects to implement in the region using federal transportation funding. The need for transportation improvements across the nation continues to outpace the funding available to address our nation’s growing transportation needs. Therefore, the process for developing the LRTP is intended to ensure that federal funding is allocated to transportation projects that best address the needs and goals defined by the community. Given the long timeline for implementing transportation improvements, the LRTP must have a planning-horizon of at least 20 years. Federal regulations also require the LRTP to be “fiscally constrained,” meaning the anticipated cost of transportation improvements cannot exceed the expected revenue over the planning horizon. In short, the LRTP is a prioritized list of transportation improvements programmed for implementation over the next 25 years according to how much funding is expected to be available.

Legislative Authority for the LRTP

Following passage of the Federal Highway Act of 1962, Congress has passed a series of surface transportation bills that have continued to require MPOs to develop a metropolitan transportation plan in order to be eligible for federal funding. The most recent surface transportation legislation was the Moving Ahead for Progress in the 21st Century Act (MAP-21). The LRTP was developed in compliance with this legislation.

Moving Ahead for Progress in the 21st Century (MAP-21)

In 2012, MAP-21 became the fourth intermodal surface transportation bill passed by Congress since 1991, the previous three being: the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the Transportation Equity Act for the 21st Century (TEA-21), and the Intermodal Surface Transportation Efficiency Act (ISTEA). MAP-21 maintains the eight federal planning factors established under TEA-21 and expanded under SAFETEA-LU, with the core considerations of economic development, safety, security, mobility and accessibility, environmental protection, intermodal connectivity, systems management and operations, and system preservation. MAP-21 also continues the requirement for a continuing, cooperative, and comprehensive (3-C) long range transportation planning process for making transportation decisions in metropolitan areas.

MAP-21 provides funding for highways, highway safety, transit, bicycle and pedestrian facilities, and multi-modal infrastructure. The original 3-year funding authorization has been extended through a series of continuing resolutions and was the de-facto federal transportation legislation at the time of adoption of the LRTP. As with previous legislation, MAP-21 requires MPOs to develop a LRTP. However, MAP-21 introduced some major programmatic and policy changes to long
range transportation planning, establishing seven national performance goals focused on safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, reduced project delivery delays, and environmental sustainability. MAP-21 also requires state DOTs and MPOs to adopt a performance-based planning process.

The national performance goals are as follows:

- To achieve a significant reduction in traffic fatalities and serious injuries on all public roads;
- To maintain the highway infrastructure asset system in a state of good repair;
- To achieve a significant reduction in congestion on the National Highway System;
- To improve the efficiency of the surface transportation system;
- To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development;
- To enhance the performance of the transportation system while protecting and enhancing the natural environment; and
- To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Performance-Based Planning and Programming

MAP-21 requires MPOs to develop long-range transportation plans through a "performance-driven, outcome-based approach to planning," which has long been regarded as a best practice in the field of transportation planning. A performance-based approach uses data on the performance of the transportation system to identify, evaluate, and prioritize strategies to achieve desired outcomes and track progress over time. The primary rationale behind this approach to long range transportation planning is that funding decisions should be closely tied to achieving specific outcomes. Figure 1-2 provides a visual explanation of the process.

To understand performance-based planning under MAP-21, it is important to first grasp the difference between performance goals, measures, and targets. The seven national performance goals described above are broad statements that describe a desired end state. Performance measures are metrics used to assess progress toward meeting these goals. For instance, take the national performance goal of achieving a significant reduction in traffic fatalities and serious injuries; an example of a performance measure for this goal is the number of fatalities and serious injuries per 100 million vehicle miles traveled. Performance measures represent a quantitative approach to determining whether progress is being made towards achieving goals. Performance targets, on the other hand, are the specific level of performance that is desired to be achieved within a certain timeframe. Using the previous example, a performance target would be X fatalities per 100 million vehicle miles traveled over a 1-year period.

MAP-21 requires the United States Department of Transportation (USDOT), in consultation with state DOTs, MPOs, and other stakeholders, to establish performance measures for pavement
condition, highway performance, bridge condition, safety, traffic congestion, on-road mobile source emissions, and freight movement. State DOTs and MPOs are then required to adopt performance targets within a specified time frame. While not effective at the time of the development of the 2040 LRTP, future transportation decisions, including the prioritization of transportation improvements in the LRTP, will need to be based on their likely impact on achieving NLCOG’s adopted performance targets. Future transportation funding allocations will be based on the success of state DOTs and MPOs in achieving their adopted performance targets.

The LRTP Planning Process

The planning process for creating the LRTP is prescribed by state and federal regulations, but the vision that drives the process is locally developed. Development of the 2040 LRTP was kicked off by an extensive public visioning process that included workshops with the public and consultation with regional stakeholders. Existing plans, studies, and data in the region were reviewed to better understand planning efforts to date and ensure the 2040 LRTP supports other activities in the region that are impacted by the transportation system.

Development of the LRTP also included a significant technical analysis component, including an inventory of the existing transportation system, the development of
population and growth projections for the region, and an analysis of roadway and non-roadway performance, including how growth will impact the future performance of the transportation system if no improvements are made over the planning horizon. Using information gathered from the public, key stakeholders, and the results of the technical analyses, strategies for meeting the needs of the region were identified and evaluated, including alternative growth scenarios. Potential transportation improvements were scored and ranked according to community goals and their anticipated impact on regional mobility. Finally, the cost of each project was estimated, and likely revenues were forecasted for the planning horizon. The list of prioritized transportation improvements was further refined according to how much funding is expected to be available. The end result is a prioritized list of current (2015-2020), short-term (2021-2030), and long-term (2031-2040) projects programmed for federal funding over the next 25 years.

**Visioning Process**

The purpose of the LRTP is to identify the mobility needs of the community over the next 25 years, establish priorities for funding those improvements, and chart a course for meeting the community’s identified transportation needs. Establishing a community vision for the future of the transportation system and related goals to assist in the prioritization of transportation improvements is key to ensuring the plan reflects community values. Input from members of the public and other regional stakeholders was solicited early and continuously throughout the development of the plan.

The process for updating the 2040 LRTP was initiated by a series of workshops with the public and consultation with regional stakeholders with a specific interest in the transportation system, such as freight operators and emergency responders. The purpose of these meetings was to gather data and input on community needs and values to establish a framework for LRTP development. Using the feedback received, NLCOG drafted a vision statement and reconfirmed the goals and objectives from the previous LRTP. A list of evaluation criteria, ranked according to input from the public, was also developed to assist in prioritizing transportation improvements for inclusion in the LRTP, and the needs of the public, as well as specific stakeholder groups, was documented for further analysis.

**Gathering Existing Data and Professional Expertise**

Early in the process and throughout plan development, roundtable discussions and interviews were conducted with key stakeholders with a specific interest in the transportation system, such as freight operators, emergency responders, bicycle and pedestrian advocates, and members of the business community. These meetings were designed to gather information on related plans, reports, studies, and data in the region, and better understand each stakeholder’s needs related to the transportation system. The meetings included discussions on existing plans, reports, data, and professional knowledge of ongoing projects, development patterns, and community concerns to create an initial framework, including an overview of challenges and opportunities in the study area, to guide the development of the LRTP.
Important planning guidelines mandated by MAP-21 include due consideration of other related planning activities within the metropolitan area and the support of local economic vitality as one factor by which all transportation projects must be evaluated. Therefore, the study team coordinated with representatives and agencies responsible for land use, economic development, and other related planning processes as a key element in the visioning phase of the LRTP development. MAP-21 also requires that MPOs consult with state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long range transportation plan. Many of these agencies are represented on the MPO’s TCC and were also involved in the initial stakeholder consultations.

Conducting Public Visioning Workshops

In addition to the stakeholder consultations, the MPO hosted a series of visioning workshops to gather information from the public on perceived needs, community values, and desired community growth and development patterns. An outreach and advertising campaign was conducted to invite a large and diverse group of stakeholders to participate in the visioning workshops. At the workshops, public participation specialists worked with the community to articulate their needs and priorities as they relate to the transportation system, and help them visualize alternative land use scenarios and future multi-modal transportation system options. Throughout the workshops, the public was given opportunities to inform the MPO of the transportation needs and challenges that should be addressed in the area and to provide input regarding the importance of criteria used to evaluate future transportation projects.

Identification of Regional Transportation Needs

In order to develop strategies for improving the transportation system and accommodating future growth, it is imperative to assess the current state of the transportation system, as well as community growth trends. For the update to the 2040 LRTP, the needs assessment included an inventory of the existing transportation system, a demographic analysis to determine existing transportation demand based on current population levels, projections of future population and employment and the associated future travel demand, and an evaluation of the performance of both roadway and non-roadway transportation systems.

Transportation System Inventory

In order to determine existing and future travel demand on the transportation system, all existing transportation modes in Bossier and Caddo Parish were inventoried, including the National Highway System (NHS), urban and rural roadways by functional class, bridges, rail facilities, airports, intermodal terminals, fixed route transit system, demand response public transit systems, bicycle facilities, pedestrian facilities, passenger rail, and intercity bus.

Regional Growth Trends

The density and distribution of residences, jobs, schools, shopping, and recreational opportunities within the region, to name a few, have significant implications for the way the transportation system is used by the traveling public. In order to evaluate existing needs and establish a baseline to which future needs can be compared, the study team gathered existing data on population, employment, and land use. 2010 was selected as the base year, as it is the most recent year during which the decennial Census was conducted – the only complete enumeration of the population. Information on employment was acquired from InfoUSA, a proprietary dataset, and supplemented with the
institutional knowledge from regional stakeholders.

Projections of future population and employment were developed using the Delphi method. The Delphi method is a consensus-building process that asks a group of experts to reply to several rounds of questionnaires until the range of responses is reduced and a consensus among the experts is established. The Delphi Process for the development of the 2040 LRTP involved over fifty regional stakeholders who developed estimates and projections of total population and employment for each parish for the years 2020, 2030, and 2040, and subsequently allocated those totals to subareas within the region.

Roadway Needs Assessment

The resulting population and employment projections were applied to the existing roadway network in the travel demand model to analyze the performance of the transportation system if no improvements are made over the planning horizon. This is often referred to as the “no-build” scenario. The travel demand model provides data on select performance measures, including average delay, volume-to-capacity ratios, and vehicle miles/hours traveled, which can then be compared to the resulting outputs when various transportation improvements are coded into the network to determine their impact on regional mobility.

Non-Roadway Needs Assessment

A transit deficiencies analysis was conducted to evaluate the system coverage in terms of the percent of the regional population that is within walking distance of a transit route. Transit access to key destination was also assessed and target transit rider subareas were identified using data on the location of minority, non-driving, elderly, and disabled populations, as well as households reporting no access to a personal vehicle. The transit deficiencies analysis also includes information on the perceived service quality and availability of transit based on responses to an online survey and an assessment of coordination between human service providers and the providers of transportation.

Bicycle and pedestrian facilities were assessed using evaluation criteria adopted from the Bicycle Environmental Quality Index (BEQI) and the Pedestrian Environmental Quality Index (PEQI) – a planning tool developed by the San Francisco Department of Public Health, in which scores are assigned to locations on the street network based on environmental variables that either enhance or detract from favorable bicycle or pedestrian conditions. The BEQI and PEQI use a combination of qualitative and quantitative indicators related to street and intersection design, safety, and adjacent land uses to assign an overall BEQI and PEQI score to chosen locations. The locations are then categorized by their relative suitability for bicycling or walking as either Excellent, Above Average, Average, Below Average, or Poor. Additionally, survey data from an online questionnaire regarding bicycle and pedestrian facilities in the region was used to supplement the analysis.
Safety and Security of the Transportation System

Safety is the protection from injury or loss by circumstance, accident, or negligence. Security, on the other hand, is the protection from injury or loss caused by deliberate action. Increasing the safety of the transportation system, therefore, would focus on reducing the number and the severity of traffic accidents, while increasing security would focus on reducing crime at transit stops and the resiliency of the transportation system in the case of an extreme weather event or terrorist attack. Needs related to the safety and security of the transportation system in Bossier and Caddo Parishes were evaluated both quantitatively and qualitatively, through an analysis of crash data, discussions with the public and key stakeholders, and a review of the planning documents developed by local, regional, and state agencies responsible for safety and security.

Freight and Intermodal Terminals

Federal planning regulations require consideration of how transportation impacts the economy, including how easily freight can move through the region, as well as within the region. The analysis of freight in Bossier and Caddo Parishes involved inventorying all major freight generators and activity centers in the region, conducting targeted outreach to freight stakeholders, identifying regional roadways with high levels of truck volumes and congestion, and analyzing regional crash data to determine crash hot spots for freight.

Transportation Systems Management and Operations

Building new roads and adding capacity to existing roadways not only comes with a high price tag, but it also often takes years for a project to go through the planning, design, and construction phases of project development. Given the limited availability of funding for transportation projects and rising congestion levels, state, regional, and local agencies are increasingly relying on transportation system management and operation (TSM&O) strategies to increase the capacity and improve the performance of existing roadways. These strategies do not require the construction of new roadways or additional lanes of capacity, and therefore, are often referred to as “no-build” strategies. Needs related to the management and operation of the transportation system in Bossier and Caddo Parishes were evaluated qualitatively through a review of local, regional, and state plans, and targeted outreach to agencies involved in TSM&O activities.

Identification of Regional Transportation Strategies

The next step in the long range transportation planning process is to identify and prioritize strategies to address the needs identified in the previous phase of plan development in accordance with the vision and goals of the community. The identification of regional transportation strategies includes both “build” and “no-build” strategies, and addresses the needs of all modes, including motorized vehicles, freight trucks, public transit, bicycles, and pedestrians.

Building new facilities will not address all the identified transportation needs. Not only is building new roadways expensive and funding is limited, but some needs are best addressed by strategies that reduce demand and improve the operational efficiency of the existing...
transportation system. Therefore, the LRTP planning process included consideration of the preservation of the existing system through preventative and rehabilitative maintenance, the inclusion of access management strategies, and the incorporation of Travel Demand Management (TDM) and TSM&O strategies.

Once the no-build strategies were considered, potential projects to expand or build new facilities were examined. A list of candidate projects for further evaluation was developed through the combined consideration of the results of the technical analyses, other regional plans and studies, consultation with local traffic engineers, planners, and other stakeholders, and a request for transportation projects sent to all jurisdictions in the planning area. Using a set of evaluation criteria ranked by the public during the visioning workshops, as well as the results of the travel demand model, proposed projects were scored and ranked by members of the TCC according to their impact on achieving regional goals and the public’s vision for the future of the transportation system.

**Alternative Land Use Strategies**

In addition to examining the operational efficiency of the region’s roadways in terms of vehicle movement, the process of identifying regional transportation strategies included a scenario-based alternatives analysis that looked at how different growth patterns impact the performance of the transportation system and the need for transportation improvements. The purpose of the scenario-based alternatives analysis is to provide policy makers, stakeholders, and the public with an understanding of the negative operational and fiscal impacts that occur when land use and transportation decision making are not well coordinated. The thoughtful integration of land use and transportation planning can help conserve limited financial resources and reduce the need for transportation infrastructure investment.

**Systems-Level Analysis of Proposed Projects**

The systems-level analysis examines how the program of candidate projects impact community issues that are of system- and region-wide concern, including environmental, cultural, and historical resources. It includes an environmental mitigation analysis, as required under federal planning regulations, to identify any potentially negative impacts on the environment and/or historical and cultural resources. It is a high-level, conceptual analysis conducted with the intent to avoid any obvious environmental constraints that would prevent projects from being implemented. The analysis also assessed potential impacts associated with the program of proposed projects that might have a disparate impact or unintended consequences for low-income and minority populations (environmental justice).

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1 Once projects reach the implementation stage, a more detailed environmental evaluation will be done as a part of the pre-construction process.
Financial Analysis and Fiscal Constraint

Fiscal constraint is a significant priority in determining the final list of improvements that will be included in the LRTP. Not only does MAP-21 mandate that the LRTP be fiscally constrained and only include projects that can reasonably be expected to have adequate funding, but certain projects also require that local communities provide matching local funds in order to receive federal funds. The process for establishing both estimated costs and expected revenues is critical to the development of an implementable LRTP.

Before fiscal analyses can be conducted, several factors, or “givens,” to be used in the financial calculations have to be determined. For example, the inflation factor for the calculation of future year costs must be determined, as well as the average cost of right-of-way acquisition in the state. For consistency purposes, these factors are often determined by the state and used in all LRTPs. However, the state may also choose to provide different factors for each region in Louisiana. LADOTD provided information that helped develop the factors that were included in the financial analysis of this plan.

Using these established factors, a cost was calculated for each project. Cost is defined as the total project cost, which includes planning elements (e.g. environmental studies and functional studies), engineering costs (e.g. preliminary engineering and design), preconstruction activities (e.g. line and grade studies, right-of-way acquisition and corridor preservation), construction activities, and contingencies. These costs also include an inflation factor so that costs can be determined based on year-of-expenditure dollars. A revenue projection was also developed that identified the anticipated revenue stream for local, state, and federal funds. The inflation factor was also applied to the revenues to account for the year funding is expected.

A fiscal constraint analysis was performed that compared the anticipated year-of-expenditure costs to the anticipated year-of-receipt revenues to determine if sufficient and timely financial resources were likely to exist to fund the proposed program of projects. Based on the cost and revenue projections, the package of fiscally constrained projects anticipated to best accomplish community-defined goals and objectives, was selected by the study team and then submitted to the Policy Committee for approval.
Adoption Process

The results of the public involvement process and the technical analyses, as well as recommended strategies and a fiscally-constrained list of prioritized transportation improvements were included in the draft 2040 LRTP for review by the public and adoption by the MPO Policy Committee. On February 29, 2016, the draft plan was presented to the public and their feedback was solicited throughout the 30-day public review period. Input was considered by the Policy Committee, and as needed, appropriate modifications to the plan were made as noted in the Technical Supplement. The final LRTP was presented to the Policy Committee for adoption on April 15, 2016. The approved LRTP has an effective date of April 15, 2016 and was shared with LADOTD, the Federal Highway Administration, and the Federal Transit Administration.