



STATE OF LOUISIANA TRANSPORTATION RESULTS TEAM

Outcome Based Budgeting Request for Results

Transportation

Outcome Goal Statement

“I want better, cleaner, safer and less congested modes of transportation, and I want to get where I need to go efficiently and reliably.”

Indicators

Indicator 1: Reducing the Backlog

The Highway Needs Study was established through Louisiana Act 334 and is required by Revised Statute 48:228. The basic approach to highway needs evaluation is the concept of a minimum “threshold”. This is the yardstick to which existing facilities are compared for condition, acceptable level of capacity, alignment, lane and shoulder width. Threshold values have been established for the various classes of roadways. The threshold values used by DOTD for the various roadways on the State System are consistent with the Federal Highway Administration’s Highway Economic Requirement System (HERS) and guidance contained in the Highway Capacity Manual. These threshold values have remained fairly consistent over at least the last 15 years in order to establish a historic “yardstick”. At the end of the calendar year 2009, the backlog should be \$12.5 billion (above the threshold) which is also known as the highway needs. The measure is the change of the backlog from one year to the next. The measure for the preservation component is the deterioration curves for pavements and bridge condition.

Indicator 2: Travel Time (Delay)

Congestion is one of the most readily identified infrastructure problems in urban areas throughout the country. It is both an economic issue and a quality of life issue. The impedance of freight shipments and business travel can have serious adverse impacts on business and industry. Further, congestion has adverse impacts on the quality of life of many citizens. The journey to work and many other daily activities become more onerous. If congestion becomes such a problem that an area is viewed unfavorably as a place to live, work, and to do business, then the economic vitality of the area is threatened. The measure for this indicator will be a calculated reduction of delay for specific congestion relief projects for a given fiscal year. This information will be supplemented where actual data is available.

Indicator 3: Multi-Modal Transportation System

A seamless Multi-Modal Transportation System facilitates a safer, more efficient, and more reliable means of moving people and goods from the point of origin to the destination.

Moving People A multi-modal system provides individuals with transportation options other than their personal vehicles and gives individuals greater assurance that they will arrive at their destination on time. Alternatives should be operationally sustainable from a budget perspective and may include sidewalks, bike paths, air transportation, and public transit options to decrease congestion on our highways/roads, reduce Vehicle Mile Travelled (VMT) and highway/road preservation expenses, reduce fuel consumption, reduce air pollution – particularly in cities, and give people mobility options, which increase their confidence in the transportation system. Ensuring seamless intermodal connectivity between these transportation options is critical for system efficiency and reliability. The measure will be the number of parishes that have a transit system and the number of actions to improve transit efficiency and safety.

Moving Goods A multi-modal system provides businesses (shippers) with a more competitive market for transporting their products, lowering the transportation costs for both shippers and consumers. Because shippers are primarily private entities and make their own choices as to where they will offer transportation services, the state cannot guarantee transportation competitiveness in all geographic areas. However, the state should work with shippers and carriers to develop a multi-modal system that removes bottlenecks and facilitates seamless intermodal connectivity between the trucking, rail, and maritime transportation modes. This approach will produce a more efficient and reliable freight transportation system. The measurement will be the number of strategies implemented from the freight strategic plan.

Indicator 4: Safety – Crash Fatality Rate

The highway fatality rate is an indicator of highway safety trends based on the concept of exposure. The Fatality Analysis Reporting System (FARS) was developed by the National Center for Statistics and Analysis (NCSA) of the National Highway Traffic Safety

Administration (NHTSA) in 1975 to provide an overall measure of highway safety, to help identify traffic safety problems, to suggest solutions, and to help provide an objective basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs. FARS contains data derived from a census of fatal traffic crashes within the 50 States, the District of Columbia, and Puerto Rico. The FARS database contains descriptions, in standardized formats, of each fatal crash reported in the State of Louisiana. It is estimated that 95% of all highway crashes involve human error as a factor. Comprehensive highway safety programs address the 4-Es: Engineering, Education, Enforcement and Emergency Medical Services. Increasing investment in highway safety improvements is an important strategy for reducing fatalities, and should be included in 4-E highway safety programs.

Introduction of Key Factors

Our team, consisting of participants with a diverse range of backgrounds and expertise, developed a map to address the factors that affect the transportation expectations for the residents of Louisiana. To meet this priority, the group created our “Cause and Effect map”. The top three in priority order are: capacity, preservation, and managing traffic. Others (not in priority order) are: human resources, human behavior, alternate modes of transportation, prioritization, and aesthetics.

Primary Factor 1: Capacity

Projects that address capacity include adding travel lanes to existing highways, building new highways (i.e., extending existing highways, etc.), adding new interchanges to existing freeways, or adding control-of-access to existing highways.

1. **Pavement/life cycle cost** is a process used to compare the use of different types of pavements (ex. asphalt versus concrete).
2. **Environmental impact:** Projects that are federally funded, or otherwise require a federal action (permit) in order to be implemented, follow a process in accordance with the National Environmental Policy Act (NEPA). This includes a thorough evaluation of environmental impacts associated with a proposed project. Objectives are to inform decision makers and the public about the potential significant environmental effect of proposed activities, to identify ways to avoid or reduce environmental damage; to prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures, to disclose to the public reasons for agency approval of projects with significant environmental effects; to foster interagency coordination in the review of projects; and to enhance public participation in the planning process.
3. The FHWA fully supports the concepts and principles that make-up Flexibility in Highway Design, now commonly referred to as "**Context Sensitive Design**" (CSD). An important concept in highway design is that every project is unique. The setting and character of the area, the values of the community, the needs of the highway users, and the challenges and opportunities are unique factors that designers must consider with each highway project. When faced with extreme social, economic, or environmental

consequences, it is sometimes necessary for designers to look beyond the "givens" of a highway project and consider other options.

4. **Quality Materials, Methods and Specifications** for new construction, reconstruction and rehabilitation of roads have been highly developed by years of peer-reviewed research and discussion by Transportation Research Board (TRB), American Standards of Testing Materials (ASTM) and American Association of State Highway and Transportation Officials (AASHTO). The primary goal is to improve overall quality and prevent premature failures. Nationwide AASHTO standards recommended by the work done by Strategic Highway Research Program (SHRP) are now in place. The AASHTO standards, guidelines and mix design methods generally have a proven record of performance and are readily available to all agencies.
5. To mitigate congestion, **Construction Work Schedules** must be accelerated to reduce the impact on the public, while observing economic stringencies to conserve funds for other projects. To achieve this goal, consideration must be given to identifying more efficient and cost-effective methods for reducing construction time and lane reductions.
6. The Federal Highway Administration (FHWA) provides and supports a wide range of data and safety analysis tools for State and local practitioners for **Roadway Safety Features**. These tools have been designed to assist practitioners understand safety problems on their roadways, link crashes to their roadway environments, and select and apply appropriate countermeasures. The tools' capabilities range from simple to complex. Some provide general information; others allow more complex analysis of crashes under specific conditions and/or with specific roadway features.
7. **Level of Service:** Level of Service is what is considered when adding capacity. The transportation LOS system uses the letters A through F, with A being best and F being worst. LOS C is the target for urban highways in some places, and for rural highways in many places. At LOS C most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained.

Primary Factor 2: Preservation

Preservation is the overall encompassing term used to describe keeping transportation systems in good working order with the best benefit – cost ratio possible within available resources and constraints. Within **Preservation** are the following key areas of concern: **Pavement, Bridges, Roadway/Roadside, Traffic, Quality Materials and Workmanship, Environment, and Safety**.

1. **Pavement** preservation is the systematic management and maintenance of pavements to achieve the lowest possible life cycle cost. Successful pavement preservation utilizes a cost-effective set of practices that extend pavement life and improve safety and motorist satisfaction while saving public tax dollars. Appropriately timed preservation treatments can extend the useful life of pavement, reduce highway user costs, and result in reduced life cycle costs for the life of the pavement. The key to a successful pavement

preservation program is the ability to target resources to keep good roads good rather than fix the roads in the worst condition.

2. **Bridge** Preservation is the systematic management and maintenance of bridge structures and associated features such as pilings, piers and retaining walls to achieve and maintain the best condition possible over the life of the structure. Typically bridge structures are designed to last three or more times as long as a highway pavement. Regular maintenance such as joint cleaning, painting and deck repair can extend the useful life of bridge and result in reduced life cycle costs and user costs.
3. **Roadway/Roadside** preservation is the maintenance of other roadway or roadside features such as striping, signs, culverts, and guardrail. The service life of some of these features is rather short as compared to other features. For example striping may be expected to last five years while the design life for some culverts is fifty years. In both cases, maintaining the serviceability of the feature is an integral part of keeping the highway network functioning as it should. Maintaining adequate drainage is another important function that serves to protect and preserve highway infrastructure.
4. **Traffic** impacts are one of the biggest factors in determining how long pavements and bridges will last. Pavement and bridge structures are designed to support a calculated number of vehicles of a given size and weight over the life of the feature. As weight and volumes increase, service life decreases. Heavier vehicles cause more wear and tear than lighter vehicles. Responsible legislation and management of overweight permits and enforcement of weight limits is crucial in the long term preservation of bridges and pavements. In addition to the financial implications of decreased service life of highways, potential failure of bridges due to overweight loads constitutes a serious threat to public safety.
5. **Quality Materials and Workmanship** used in building highway features is directly related to the long term serviceability of highway network. Quality products last longer at reduced life cycle costs when compared to substandard materials and workmanship.
6. Preservation strategies also provide protection of the **Environment**. Preservation of highway network reduces consumption of goods and materials since materials already purchased are conserved and re-used whenever possible. Sound preservation practices also reduce traffic impacts such as congestion due to construction and can lead to lower vehicle emissions since roads do not have to be reconstructed as often.
7. Increased service life of highways provides a **Safety** benefit over time as fewer construction zones are required and roadway conditions stay at the best serviceability possible within the available resources. Some preservation strategies also provide a direct safety benefit such as smoother roads, increased skid resistance, new striping and rumble strips.

Primary Factor 3: Managing Traffic

In addition to the direct construction of additional capacity, certain improvements can improve the functionality of existing facilities. **Managing Traffic** is the most cost effective way of reducing congestion and improving safety.

1. Most highway capacity restrictions and crashes occur at signalized urban intersections. **Intersection Improvements** such as additional turn lanes and thru lanes are improvements that can result in greater highway safety and efficiency. Properly designed turn lanes result in the separation of left, thru, and right turning movements allowing the maximum use of available green time and greatly reduced conflicts.
2. National Standards for highway **Signing and Marking** are contained in the Manual on Uniform Traffic Control Devices (MUTCD) which is a federal requirement established by 23 CFR 665. As directed by RS 32:235 the Department has adopted the MUTCD as the state's uniform system of the design, installation, and use of traffic control devices. This manual sets national standards for shapes, colors, and fonts for road markings and signs. The proper use and understanding of warning and regulatory signs have a direct impact on roadway safety.
3. Lack of capacity (or more accurately, growth in traffic that exceeds existing capacity) is a primary cause of urban freeway congestion. **Ramp Metering** allows the management of existing capacity by regulating the flow of traffic entering freeways according to current traffic conditions. Ramp meters reduce congestion (increase speed and volume) on freeways by reducing demand and by breaking up platoons of cars at on ramps.
4. **Traffic Signals** play an important role in the transportation network and are a source for significant frustration for the public when not operated efficiently. Outdated or poor traffic signal timing accounts for a significant portion of traffic delay on urban arterials and traffic signal retiming is one of the most cost effective ways to improve traffic flow and is one of the most basic strategies to help mitigate congestion. The Federal Highway Administration recommends that traffic signal timing should be reviewed every three to five years and more often if there are significant changes in traffic volumes or roadways conditions. Retiming traffic signals every three to five years is generally considered to be good engineering practice. A well timed signal system can enhance traffic flow, reduce delay, improve safety, and minimize pollution.
5. **Traffic Incident Management** includes the quick removal of obstructions which include disabled or wrecked vehicle, debris and spilled cargo. When such incidents occur congestion become severe and travel times become unpredictable.
6. The Department is a major partner in the state's **Emergency Management** efforts. The Department assists with hurricane evacuations by supplying and operating busses to evacuate urban populations which don't have personal transportation. The Department

plans, designs, constructs, and operates the contra-flow of critical freeway links allowing the maximum movement of people during evacuation during emergency events.

7. As directed by the Federal Highway Administration, the department manages the state highway **Railroad Grade Crossing** program. These critical intersections are inventoried, monitored, and upgraded with signs, markings, lights, and gates to provide the safe control of rail-highway traffic.
8. **Access Management** is the systematic control of the location, spacing, design and operation of driveways, median openings, interchanges, and street connections. It also encompasses roadway design treatments such as medians and auxiliary lanes, and the appropriate spacing of traffic signals. Its objectives are to enable access to land uses while maintaining roadway safety and mobility. This is particularly important for major roadways intended to provide efficient and safe movement of traffic. The Transportation Research Board's Access Management Manual documents the capacity and safety benefits of managing highway access.

Primary Factor 4: Human Resources

Human Resources are the most critical component of an Agency.

1. It is critical for the Department to have a vibrant **Pool of Qualified Applicants** to recruit into key and specialized positions. An active recruiting program will ensure that applicants are aware of opportunities within the Department. Education of our citizens is critical to filling positions that require college degrees or technical programs for our skilled workers.
2. **Knowledgeable and capable staff** is required to successfully operate a multi-modal agency such as DOTD. Retention of key employees to maintain institutional knowledge is a very important element within the Department human resources. It is estimated that 34% of the Department's workforce will be eligible for retirement within the next five years. As experienced employees retire who have maintained specialized programs and tasks, it's critically important for the Department to create strategies to transfer institutional knowledge and perpetuate a knowledge management culture that is evidenced by knowledge-sharing activities that meet the agency's current and future objectives.
3. **Contractors** for all construction projects must be Louisiana licensed highway contractors. All contractors and **construction workers** must follow all local, state, and federal laws and regulations.
4. **Qualified Licensed Engineers** and other professionals with a high propensity to succeed to meet the growing challenges of the Department and Industry are necessary for the design, construction and maintenance of our transportation system.

5. It is vital that **Construction Inspectors and Engineers** are trained, well-equipped, meet all certifications necessary, and administer construction contracts as described in the Construction Contract Administration Manual. Inspectors must meet all requirements of the FHWA.

Primary Factor 5: Prioritization

Making best use of limited resources requires Prioritization.

1. The **Prioritization Process** is largely decentralized and relies on the expertise of people and data. Much of the decision-making occurs at a regional level with consultation and cooperation among the DOTD District Administrators, the Metropolitan Planning Organizations, state and local elected officials, and regional/local planning officials and the public. This decentralized approach is similar to those used in Florida, Texas, Missouri, and several other states. The process employs teams of experts to assist in setting priorities and selecting projects. The process places greater emphasis on the use of traffic crash data as the means for identifying highway safety improvement projects. This data will be supplemented by information on highway geometric feature.
2. DOTD's construction **Funding** budget comes from several sources. Typically, approximately 65% is federal funds. Most federal funds require a 20% state match, except for Interstates, which require a 10% match and safety which in some cases is 5% match or no match. The state match comes from several sources with the biggest portion coming from the gas tax. Truck registration fees are dedicated to use on roads that are not eligible for federal funds. In addition, during the 2008 Second Special Session part of the vehicle sales tax was dedicated to construction projects (though there was a trigger in the bill that allowed the money to go to the general fund when there was a deficit in funding compared to the year before).
3. The process for identifying, prioritizing, and selecting highway projects involves partitioning the available highway construction budget to address different types of projects independently of one another in order to **Allocate our Scarce Resources**. The four project categories are: System Preservation, Traffic Safety, Capacity/Expansion, Operations. Within each of the four project categories, projects are identified, prioritized, and selected.
4. **Public Need/demand**: Every year the Department presents its current Highway Program in each of the districts. At this time the department allows the public to request projects. These requests are then sent to the district offices, the project selection teams, and the Metropolitan Planning Organizations. Also, requests are taken throughout the year both at the district level and the headquarters level.
5. According to state law, **Economic Development** is one of the factors considered when selecting projects. For the state as a whole, the impacts of economic development (i.e.,

economic growth) can be measured by the net increase in employment statewide and the net increase in income to state residents (i.e., per capita income, average household income, etc.). True economic development results in net increases in employment and income for the state as a whole. Louisiana State law provides a definition of economic development and what qualifies as economic development under the Quality Jobs Act.

Primary Factor 6: Alternative Modes

1. **Sidewalk/Bike Paths** – TEA21 requires States and metropolitan planning organizations (MPOs) to give bicyclists and pedestrians due consideration in their transportation planning processes. Many bicycle and pedestrian projects are eligible for federal-aid highway program funding, including the construction of sidewalks; installation of bicycle parking at transit; educational programs to promote bicycle safety; the striping of bike lanes and the building of trails; and the installation of curb cuts and ramps for wheelchairs.
2. There are currently 10 **Ferries** operated in Louisiana. The expectation is that ferry service be provided at the locations where ferries are currently operating throughout the state and on the current schedules. All ferries must be operated in accordance with US Coast Guard regulations.
3. **Maintaining a Transportation System for Airports, Ports, Rail and Buses.** A multi-modal system provides individuals with transportation options other than their personal vehicles and gives individuals greater assurance that they will arrive at their destination on time. In addition, a multi-modal freight system provides businesses (shippers) with a more competitive market for transporting their products, lowering the transportation costs for both shippers and consumers.

Primary Factor 7: Aesthetics

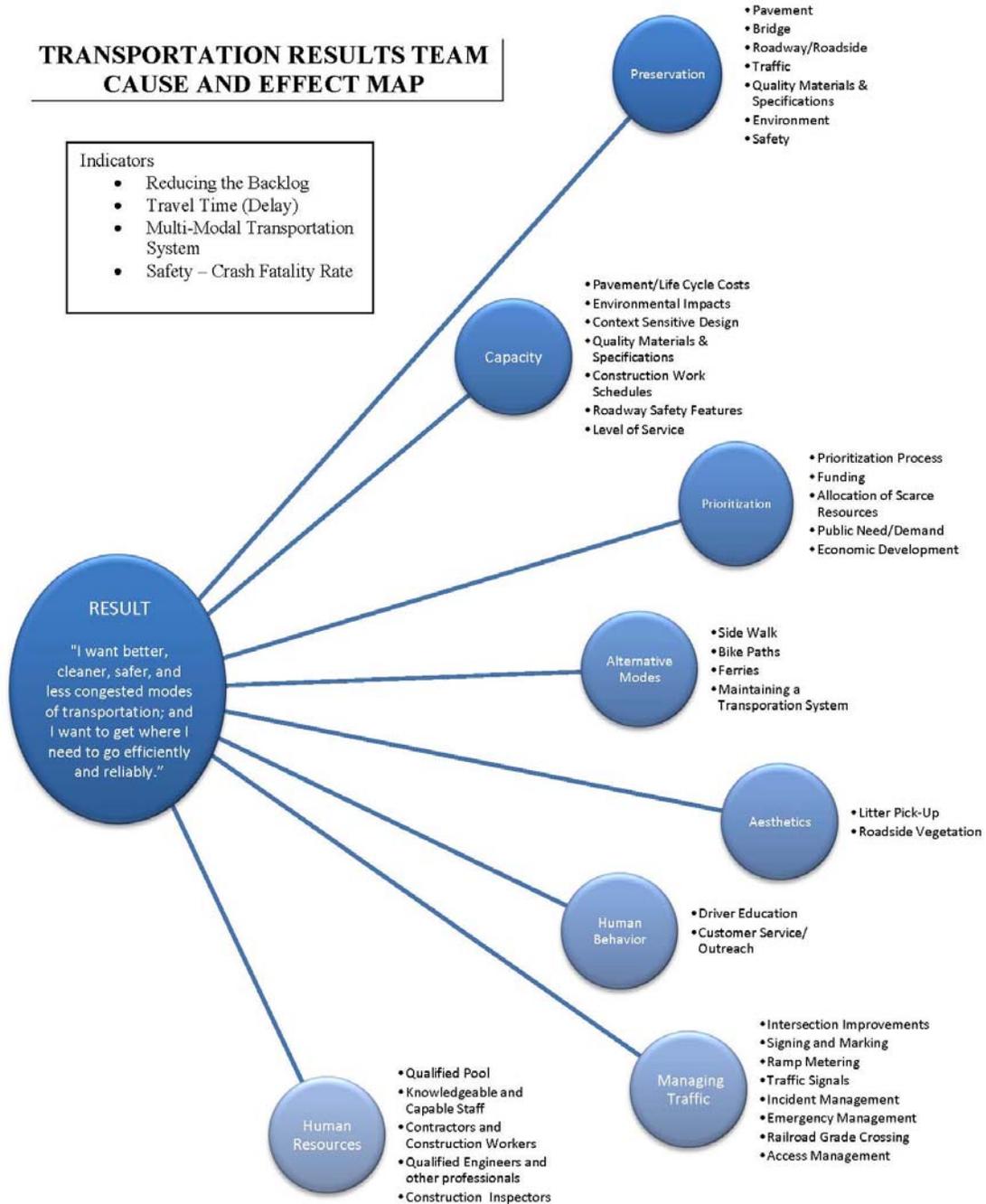
Aesthetics along our roadway system is important for our citizens' quality of life and tourism.

1. It is important that all **Roadside Features**, appurtenances, and devices, including, but not limited to, drainage structures, guard rail and permanent signs are to be maintained in a manner that allows these items to function as intended and that they are aesthetically pleasing.
2. The **Roadside Vegetation** is to be maintained in a manner that allows the side slopes, end slopes and ditches to function as intended and provide a pleasing aesthetic appearance which does not impede drainage or any other function of roadside features, appurtenances or devices. Areas of interest include the maintenance of primary turf, landscaped areas and all other roadside vegetation, control of noxious weeds and the collection/disposal of **litter**.

Primary Factor 8: Human Behavior

Human Behavior influences the safety of our transportation system.

1. The status of **Driver Education** in the state of Louisiana is extremely complex due to both public and private sectors having different regulations for instructors and different curriculums to follow. There is no standardized driver education curriculum. There is a need to develop a statewide standardized driver education curriculum based on recent research.
2. **Customer Service/Outreach** – Public Information/Education (PI&E) outreach campaigns are essential to effective highway safety programs and modification of driver behavior. The use of Public Information/Education media campaigns is one method to educate the motoring public. Emphasis is placed on refocusing or re-educating the driving population regarding key highway safety issues. PI&E campaigns should also include information regarding any associated law enforcement initiatives (e.g., “Click it or Ticket”, “Over the Limit. Under Arrest”, etc.) being conducted.



Purchasing Strategies

1. We want to reduce congestion and manage traffic.
2. We will prefer budget requests that invest more in up-front low-cost maintenance that extends the life of transportation assets.
3. We want to see innovative ways to improve or change driver behavior and enhance highway safety.
4. We want to see innovative ways which recognize the need for alternative modes of transportation and improve access and quality of these modes.
5. We want budget requests that either directly, or as a secondary benefit of other activities, enhance the cleanliness and aesthetics of people's experiences while traveling, whether commercial or private.
6. We want to maximize the productivity and performance of the transportation workforce.

Criteria

We are seeking offers that:

- **Are best aligned with the overall goals of reliability, safety, efficiency, and cleanliness.**
- **Can show the greatest return on investment.**
- **Will be able to demonstrate measurable results.**
- **Utilize Best Practices and/or are Evidence-Based**
- **Leverage State resources via partnerships and other collaborations with the business community, non-profit sector, and federal and local governments.**

Supporting Evidence

Louisiana Revised Statute 48:228

Federal Highway Administration's Highway Economic Requirement System (HERS)

United States Code of Federal Regulations, Title 23, Section 665

Louisiana Revised Statutes, RS 32:235

TRAFFIC SIGNAL TIMING MANUAL, Publication Number: FHWA-HOP-08-024

Access Management Manual, Transportation Research Board, 2003

DOTD Maintenance Manual

AASHTO Standards

DOTD Roadside Vegetation Policy

Engineering Directives and Standards Manual (EDSM), LA DOTD

LA DOTD Construction Contract Administration Manual

Act Number 708, Regular Session 2006

Act 11, Second Extraordinary Session, 2008

R.S.48:229 Highway Needs and Priority Process