

Lafayette Transportation: A New Perspective

Network Corridor Planning

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Introduction

The purpose of *Lafayette Transportation: A New Perspective* is to establish a methodology for corridor planning that includes a “Complete Streets” approach. In addition to the traditional roadway design elements, the “Complete Streets” approach to corridor planning will also include pedestrian/bicycle facilities, drainage and utility considerations, the adjacent or secondary street network, street trees/streetscape requirements, access management guidelines, shared access, shared parking, land development and redevelopment guidelines, commercial signing guidelines, and roadway design aesthetics such as street signage, signals and street lighting.

The “Complete Streets” approach to corridor planning will provide a blueprint for development along targeted corridors. This will be accomplished by integrating input from stakeholders within the corridor. The resulting corridor plan will allow for maximized utilization of existing facilities and right of way. In addition, it will identify individual projects that can be accomplished to complete the proposed corridor plan.

The process will include evaluation of existing conditions within the corridor, development of an overall plan for the corridor including transportation facilities and operations, utility management, land usage and development/redevelopment guidelines, access management, access and parking guidelines and establishment of corridor aesthetics. The corridor planning process will include input from the Lafayette MPO and stakeholders within the corridor area including municipal staff (public works, traffic and transportation, planning and zoning), Louisiana Department of Transportation and Development (LaDOTD), utility companies, emergency services, local school boards, transit operators, businesses and residents.

Identify Targeted Corridor

Input from the various stakeholders will be evaluated to identify a targeted corridor. In general, targeted corridors will be along major arterials and may have urban, suburban and rural components. The limits of the study area for a corridor plan will usually include the area within ¼ mile of the major arterial, but the study area may vary based on roadway or development conditions. The corridor identification process will include establishing the limits of the corridor plan and the width of area along the corridor to be included in the plan.

Existing Conditions

Once a corridor is identified, an inventory of existing conditions will be performed within the corridor area. This inventory will include the following:

Roadway Conditions:

- Roadway
 - Existing right-of-way
 - Pavement Width
 - Number and width of lanes
 - Shoulder and/or bike lanes
 - Turn lanes
 - Sidewalks
 - Signalized Intersections
 - Lane assignments
 - Additional turn lanes
 - Signal type/condition
 - Pavement markings
 - Connectivity of adjacent roadway network
 - Number and location of driveways (driveways/mile)
 - Currently planned infrastructure improvements
- Drainage
 - Flood zones
 - Storm sewer/open ditch drainage
 - Bridge structures
 - Culvert locations
 - Coulees
 - Drainage patterns
- Traffic Operations
 - Level of service
 - Existing traffic count data
 - Traffic control along the corridor
 - Speed limits/school zones/pedestrian crossings
- Safety (crash data evaluation)
 - Compile crash data (3 years)
 - Crash location
 - Crash type
 - Crash severity
 - Identify conflict points
 - Intersections
 - Driveways
 - Turn lanes
 - School zones
 - Other critical locations
- Land Use
 - Existing zoning
 - Existing land use
 - Vacant properties
 - Adjudicated properties
 - Planned development (when known)
 - Parking and parking requirements

- Driveway locations
- Landscaping
 - Existing trees/plantings
 - Existing maintenance needs/agreements

In addition to compiling an inventory of existing conditions, all MPO, LaDOTD and local government design guidelines and plans applicable to the corridor study area will be compiled. This may include MPO Consolidated Thoroughfare Plan, Bikeway Plan, Pedestrian Plan, Roundabout Plan, Access Management Plan/guidelines, DOTD and local government design guidelines, local zoning plans and any Comprehensive Plans when available.

Design Concept

After review of existing conditions and proposed plans in the corridor, a basic corridor design concept will be developed using input from the Lafayette MPO and stakeholders within the corridor area including municipal staff (public works, traffic and transportation, planning and planning, zoning and codes), Louisiana Department of Transportation and Development (LaDOTD), utility companies, emergency services, local school boards, transit operators, businesses and residents.

The design concept will include establishing guidelines to be used in the corridor planning process. In most cases, the proposed corridor will traverse different areas such as urban, suburban and rural. Establishing guidelines will allow a corridor plan to address the needs in each section, thereby affording the opportunity for a corridor design with context sensitive solutions.

The corridor design concept will address the following components:

- Roadway Cross Section
 - Number and width of lanes
 - Median
 - Raised median (width)
 - Continuous turn lane
 - Bicycle/pedestrian facility width/location (distance from travel lanes)
 - Right-of-way width (existing/proposed)
 - Utility locations (under/above ground)
 - Drainage
 - Curb & gutter or open ditch
 - Drainage Structure Crossings (culverts and ditches/coulees)
- Access Management
 - Existing driveway locations
 - Identify possible shared access locations
 - Guidelines for proposed development
 - Identify triggers for redevelopment adherence to proposed guidelines
 - Median opening spacing and locations (full/partial)
 - Adjacent roadway interconnectivity (backage streets)

- Neighborhood connections (street/bike/pedestrian)
- Traffic Operations
 - Design speed
 - Intersection evaluation - Signal/roundabout locations
 - Pedestrian signals/crosswalks (median pedestrian refuge)
 - Pavement markings
 - Address safety concerns
 - Transit operations
 - Transit stops
 - Sheltered bus stop locations
 - Bus pull-out locations
- Roadway aesthetics
 - Street tree planting
 - Rain gardens
 - Roadway lighting
 - Signal supports
 - Street signs
 - Median design
 - Business signage (monument signing)
- Land Use
 - Zoning
 - Building orientation
 - Site circulation
 - Shared Access
 - Parking guidelines including:
 - Connected parking
 - Shared parking
 - Softened parking requirements
 - Parking in right-of-way/backing on to roadway

Each of the design concept components are described in the following section.

Roadway Cross Section – The roadway cross section provides the detail of the proposed roadway elements within the roadway right-of-way. This will include the travel lanes, shoulders, medians, sidewalks/bike lanes, utilities, transit stops and shelters, and roadway lighting.

Roadway cross sections will be designed to safely and efficiently move traffic, transit, pedestrians and bicyclists along the proposed roadway. Where possible, especially in urban and suburban areas, the proposed roadway cross section will be designed so that little or no additional right-of-way will be required. This concept will encourage the maximum utilization of the existing roadway network.

While the roadway cross section will be designed to minimize right-of-way requirements, this should not be done at the expense of design standards. The roadway cross section will be designed to meet design standards established by the LaDOTD. Any variance

from the LaDOTD must meet design standards established by the American Association of State Highway and Transportation Officials (AASHTO).

Design elements to be considered/included in each roadway cross section are discussed briefly in the following paragraphs.

Travel Lanes – The number of travel lanes will be determined by a traffic analysis of the roadway. Additional turn lanes may be required at key locations. The lane width will be determined by LaDOTD standards.

Medians – Roadway medians will either be a raised median or a two-way left turn lane. Where possible, the raised median will be designed according to the MPO Functional Classification guidelines, however; in areas with restricted right of way, a raised median will be designed to meet current LaDOTD standards.

Bike/pedestrian facilities – The roadway cross section will include an eight foot shared use path with a minimum five foot separation between the roadway back of curb and the shared use path where possible. Where right-of-way is restricted, the roadway cross section will include a five foot sidewalk.

Right-of-Way – Corridor plans will take a context sensitive solution to establishing right-of-way needs along the corridor. While the proposed right-of-way shown in the MPO Functional Classification cross sections is the recommended roadway design, in areas with restricted right-of-way or where acquisition of additional right-of-way is cost prohibitive, a roadway cross section will be designed to fit within the existing right-of-way or require minimal additional right-of-way.

Utility Locations – Where possible, utilities will be located underground. All utility poles will be located so as not to impede bicycle or pedestrian traffic.

Drainage – Drainage will be evaluated to determine if the roadway will have underground drainage (urban) or open ditch drainage (rural). Drainage structures and coulees within the corridor will also be addressed.

Access Management – An access management plan will be included in each corridor plan. This plan will address guidelines for evaluating access along the corridor. Guidelines will be developed for new development and redevelopment. In some areas existing access will be evaluated and suggestions made to improve traffic flow both along the corridor and to the adjacent land owners.

The evaluation of corridor access will also include the adjacent roadway network. An interconnected roadway network will improve both traffic operations and access along the corridor. The interconnected network will help to reduce traffic along the arterial by providing alternative access. It will also help to reduce access or conflict points along the main roadway by providing driveway access along the adjacent roadway network.

Elements to be included in the Access Management portion of Corridor Planning include:

Driveways – Each driveway or access point to a roadway introduces additional conflict points. Conflict points reduce the safety of the roadway as well as reduce the capacity of the roadway. Reducing the number of driveways along a roadway will improve both the safety and the capacity of the roadway. In areas where driveways are not well defined channelization of the existing driveways will improve the roadway safety and traffic operations.

Shared Access – Promoting shared driveways and shared access to adjacent properties will reduce the number of driveways along the roadway as well as provide a way for vehicles to travel to an adjacent property without having to enter and exit the roadway.

Development Guidelines – The corridor plan will include access guidelines for new development and redevelopment along the corridor. This will include guidelines for the number of driveways, driveway spacing and location, shared driveway and shared access requirements. Where possible, driveway access should be to the adjacent roadway network instead of the major arterial.

Redevelopment Guidelines – As property within the corridor planning area is redeveloped, adherence to the corridor plan guidelines will be required. The corridor planning process will identify the percentage of redevelopment that will require adherence to the corridor planning guidelines.

Medians – A key component of access management in a corridor plan is the use of raised medians. The use of raised medians helps to reduce conflict points along the roadway by restricting these movements to certain locations along the roadway. Median openings can be either full openings accommodating all turning movements or partial openings allowing restricted movements. The corridor plan will designate the locations and spacing of median openings.

Corridor Network Interconnectivity – An effective corridor plan will include an interconnected secondary street system. An interconnected secondary street system will provide alternate access points for properties within the corridor as well keep local traffic off of the major arterial. The ability to use secondary streets for short trips reduces traffic volumes on arterial roadways, thereby improving the capacity of the major arterial.

Neighborhood Connections – The corridor plan will address connections to adjacent neighborhoods. These connections may be made by extending or connecting the existing roadway network or by providing bike or pedestrian connections.

Traffic Operations – The effectiveness of the proposed corridor plan will also include evaluation of traffic operations along the corridor. This will include evaluations/recommendations related to potential roundabout locations/design, intersection design, implementation of Intelligent Transportation Systems (ITS), pavement markings, pedestrian signals and crosswalks and medians with pedestrian refuges.

Design Speed – Establishing the design speed along the corridor will help to define the design element guidelines to be used. A context sensitive solution approach to establishing design speeds along a corridor will provide a method for evaluating the appropriate design speed based on the character of each section of the corridor. (i.e. downtown, urban, suburban, rural)

Intersection Evaluation - The traffic operations along a corridor are usually defined by the operations of major intersections along the corridor. During the corridor planning process all major intersections will be evaluated to determine what intersection improvements will be included in the corridor plan. These intersection improvements may include roundabout installation, intersection signalization or signalization improvements.

Roundabouts – According to the Lafayette MPO Roundabout Plan, roundabouts should be the first type of traffic control considered in any intersection evaluation. Corridor planning provides the opportunity to not only look at installing roundabouts on an intersection by intersection basis, it promotes a plan for the installation of roundabouts in series or even on the adjacent secondary street network. In the corridor planning process roundabouts will be evaluated operationally as well as geometrically.

Traffic Signal Improvement/Installation – At intersections where traffic signal installation or improvements are recommended the intersection will be evaluated to determine what type of improvements are needed. The corridor planning process will also include Intelligent Transportation System (ITS) components to ensure optimal operations of the corridor traffic signal system.

Pedestrian Crossings – Pedestrian crossings will be identified. All traffic signals along the corridor will include pedestrian signals, push buttons and crosswalks. Pedestrian crosswalks will also be included in all roundabout designs. Median constructions in the area of crosswalks will be designed to include a pedestrian refuge area.

Safety Concerns – Evaluation of crash data along the existing corridor may identify areas where cross section improvements are needed to address safety concerns. Safety evaluations will also include pavement marking improvements where needed.

Transit Operations – The corridor planning process will evaluate transit needs along the corridor. This may include transit stop and transit shelter locations as well as possible locations for transit pull outs.

Roadway Aesthetics – In addition to the operations of the proposed roadway, the corridor plan will address the aesthetics of the corridor. This will include establishing guidelines to address street tree planting, rain gardens, roadway lighting, signal supports, street signs, median design and business signage (monument signing).

Street Tree Planting -

Rain Gardens -

Roadway Lighting/Signal Supports/Street Signs – As part of the corridor planning process, design guidelines can be established to address roadway lighting, traffic signals and street signs. This can be for the entire corridor or for a certain section of the corridor. Establishing design guidelines helps to identify distinct areas along the corridor.

Median Design – In corridors with raised medians, the corridor planning process can identify the type of median treatment to be used along the corridor or for a particular portion of the corridor. These treatments may include grass, landscaping, concrete, pavers or other treatments.

Commercial Signage – A corridor plan can also establish guidelines for commercial signage along the corridor and identify compliance guidelines for redevelopment. An example of commercial signage guidelines is the use of monument type signage for commercial establishments.

Land Use – An integral part of corridor planning is addressing land use issues within the corridor. As part of a complete streets approach, guidelines will be established for zoning, building orientation, site circulation, shared access, and parking guidelines including connected parking, shared parking, softened parking requirements and parking in right-of-way/backing on to roadway

Building Orientation –

Out Parcel Development –

Infill Development -

Shared Access -

Parking Guidelines -

Connected parking

Shared parking

Softened parking requirements

Parking in right-of-way/backing on to roadway

Plan Review

Once the design concepts for the corridor have been identified, several design options will be developed. These design options will be presented in a series of public meetings to solicit input from the public.

Public input will be used to identify preferred alternatives and lead to the preparation of a final corridor plan.

Plan Adoption

Once input from the public meeting process has been addressed, a corridor plan will be finalized. This plan will be adopted through the MPO process.

Plan Implementation

Once a final corridor plan is adopted an implementation plan will be developed. The implementation plan will include identification of potential projects and associated costs, possible funding sources and a scheduled sequence of project implementation.