

## 5. TRANSPORTATION

### Challenges facing the parish

Three primary issues related to transportation are facing Livingston Parish:

1. Congestion
2. The high cost of maintaining parish roads
3. The lack of a Major Street Plan to guide long-range decision-making.

These are further described below, and remedies proposed later in this chapter.

#### *Congestion and safe, convenient circulation*

According to the public input received, parish residents consider traffic to be the number one issue facing the Parish now, and they believe in the future, too. Congestion maps prepared by the Capital Region Planning Commission (CRPC) indicate that many major roadways are congested during peak travel periods, especially the east-west roadways connecting the Parish to Baton Rouge through the limited river crossings. Recent widening of I-12 has reduced congestion, but history shows that the benefit will be relatively short-lived (see Figure 26 and 27).

This focus on congestion is common in rapidly growing suburban areas. People move to the fringe to “get away” from the city and then are dismayed to discover that commuting congestion on suburban roadways is as bad as, or worse than, it was in the community they left<sup>14</sup>.

Many subdivisions in the parish are single-entry or double-entry subdivisions. While this has created a desirable privacy for individual neighborhoods, the cumulative effect is that limited-entry subdivisions force traffic onto the major roadways, increasing congestion.

With continued growth, and even with planned roadway improvements, the commuting time to Baton Rouge will continue to increase. The 1-hour travel time “isobar” is moving gradually eastward. The implications are:

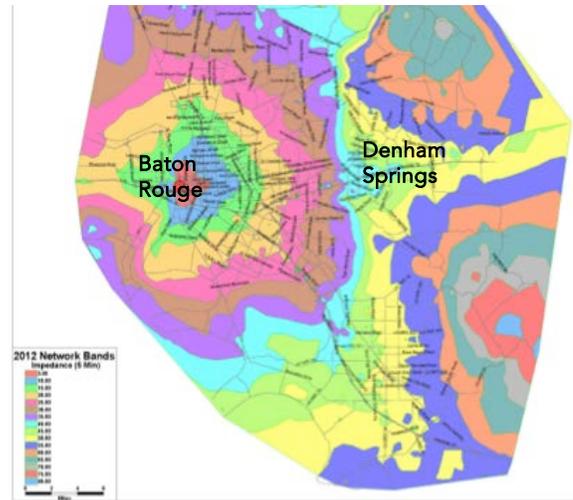


Figure 25: Travel isobars from downtown Baton Rouge generally increase with distance. (Source: Capital Region Planning Commission)

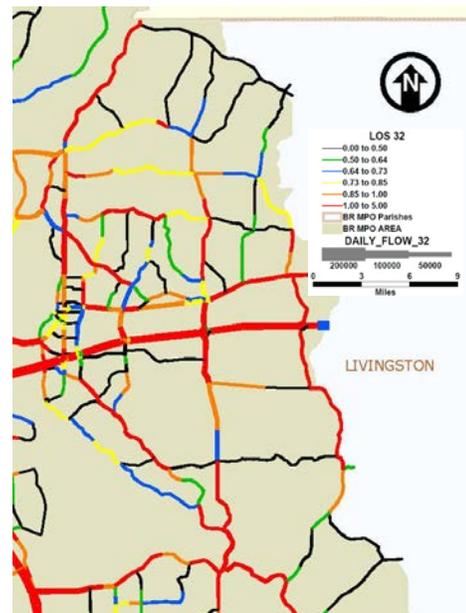


Figure 26: Level of Service in Livingston Parish with all scheduled transportation improvements

<sup>14</sup> In reality, most major roadways in growing areas are congested. Eliminating congestion as a sole objective of a transportation program becomes less useful over time, and can lead to focusing on ineffective strategies in transportation system development.

- Less desirable to live in Livingston Parish and commute to East Baton Rouge (when either the commuting time or commuting cost reaches a threshold compared to other options).
- May attract business/commercial development to take advantage of the “captive” Livingston Parish market.
- Will continue to stimulate shopping and business in Hammond.

Also, the ability to efficiently get around the Parish is critical to safety—for emergency vehicles to access homes and businesses in a timely way, as well as providing efficient evacuation in emergencies (including alternatives when routes become blocked).

### *The cost of maintaining parish roads*

Livingston Parish currently is responsible to maintain over 800 miles of roadways. According to several studies, the annual cost of maintaining a two-lane asphalt road is approximately \$15,000 per mile. This means that the parish should be budgeting approximately \$12 million per year for road maintenance. In recent years, faced with other compelling priorities, the parish has budgeted far less than that. This topic is addressed in greater detail beginning on **p. 43** Fiscal Realities.

Capital Region Planning Commission - Study Area

### *The lack of a Major Street Plan*

The Livingston Parish Code of Ordinances states that:

*“The arrangement, character, extent, width... and location of all streets shall conform to the major street plan [with consideration of] public convenience and safety.”*

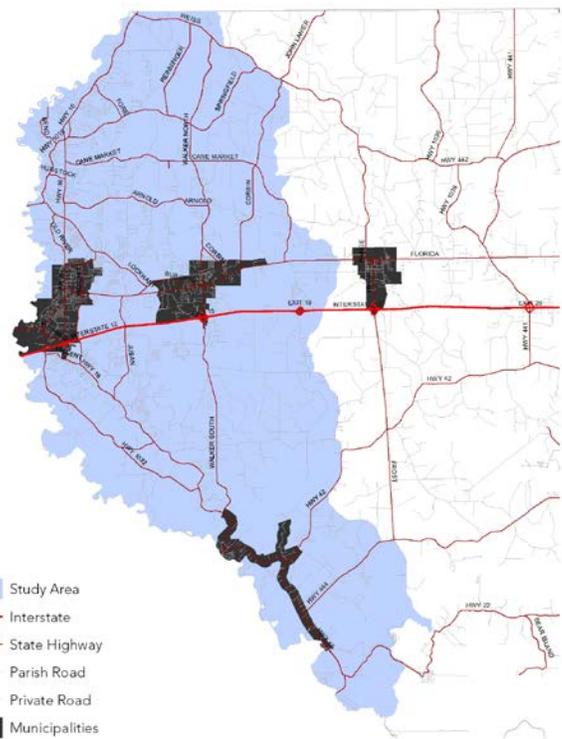
Prior to the adoption of the CMP there was no Major Street Plan. Decisions about road improvements are made each year, by individual Council members for their own district.

## **Who is responsible for the roads?**

There are basically four types of roadways in the Parish, under different jurisdictions:

- Federal highways
- State highways
- Parish roads
- City/town (municipal) roads

All state highways and some parish roads and streets are eligible for federal cost participation in construction and major repair projects. Even minor local roads and streets may be eligible for certain kinds of federal financial assistance. Thus, federal



*Figure 27: Capital Region Planning Commission study area.*

laws, funding systems, and regulations play a major role in guiding the planning, design, construction and operation of the roadway network within the Parish.

### *Federal and state highways*

The western part of the Parish falls within the boundaries of the CRPC, which is officially designated by the state and federal government to plan major (state and federal) roadways. The CRPC works closely with the Louisiana Department of Transportation and Development (DOTD) and local governments in planning and setting priorities for this roadway network.

Outside CRPC boundaries, the DOTD alone is responsible for planning state highways local roads that may be eligible for federal funding. In planning for these roadways, DOTD also works closely with local governments. Finally, DOTD provides design, construction, operation, and maintenance for all state highways, within and outside CRPC boundaries.

### *Parish roads*

Livingston Parish is responsible for all the roads that are not federal, state, municipal, or private. The parish has over 800 miles of roads for which it is responsible.

## **Improving roadway capacity (widening)**

Not all roadways are the same. Below is a simplified hierarchy of three general roadway categories, based on their role in the overall local, regional, and statewide network:

- **Highways.** These are usually state highways that provide for longer distance trips. Included are the numbered state routes and interstate highways.
- **Arterials and collectors.** These are generally parish roadways that provide for vehicular movement between neighborhoods and districts. As a practical matter, the DOTD assumed responsibility for some arterials in parishes throughout the state. They are offering incentives to parishes to take over responsibility for these state arterials.
- **Local roads and streets.** These provide access to homes and businesses and allow traffic to circulate within neighborhoods.

To plan for major roadways in its jurisdiction, the CRPC uses a capacity-oriented approach called a “predict and provide” methodology.

- Traffic is forecasted on the arterial network (but not on the collectors and local facilities).
- This traffic volume is compared to the estimated capacity of those major roadways resulting in measures of congestion.
- A long-range plan is drawn up that shows how roadways would have to be widened to eliminate the forecasted congestion.

- The highest priority projects from this needs list make their way into near-term, funded highway program plans.

Notwithstanding all of the best planning efforts, in rapidly growing regions, it is virtually impossible to keep up with capacity needs defined in this manner. As a practical matter, traffic always grows faster than capacity can be added.

Also, construction of new capacity actually tends to be a short-term solution. More capacity (wider roads) makes it possible to commute from farther away, which in turn encourages the spread of residential development, which creates more traffic. This phenomenon is called “induced traffic.”

### Arterials vs. collectors and local roads

This type of planning system can also go awry because of its focus on major routes. By focusing on highways we ignore, and don’t provide for, the important arterial, collector and local routes. Consequently, our highways carry not only the through traffic for which they were intended, but also much of the local circulation traffic. This happens because state and federal funds are used to grow the highway corridors, but little or no money is available to fund development of the collector network. So, circulation traffic that should be traveling on a collector network must instead travel over the highway routes, adding to the congestion problem, especially during peak travel periods.

### Air quality

Roadway development priorities affect more than just congestion. The amount of traffic that occurs in congested conditions is a primary contributor to air pollution. A major required mission of CRPC planning is achieving good air quality. Having not met federal air quality standards for some time, the Capital Region achieved “attainment” in 2011, primarily due to reductions in tailpipe pollutant emissions, due to stricter federal vehicle standards. However, a new formula has recently been adopted and it is likely that the Region will be “out of attainment” under the new standard. This means that the CRPC will need to update plans more frequently (every 4 years).

Capital Region Planning Commission - Projects

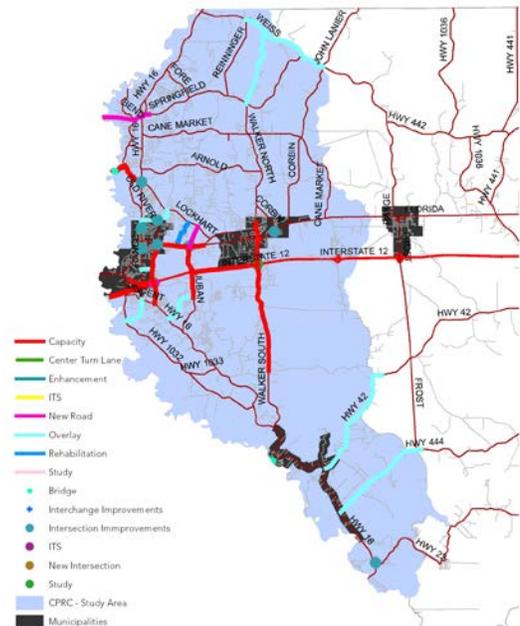


Figure 28: Capital Region Planning Commission 2032 improvements.

Livingston Parish Mayors Road Priorities

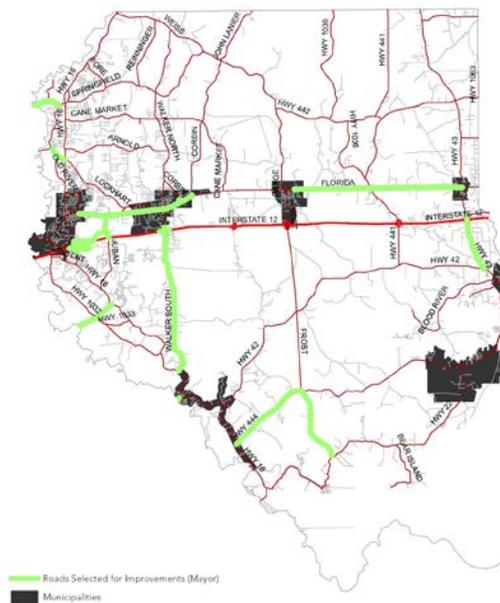


Figure 29: Mayors' road priorities.

*Current road plans for Livingston Parish*

### Capital Region Planning Commission

The CRPC planning process develops two plans for state highways and certain other projects. If a road improvement is to be considered, it has to be in these plans (see Figure 29).

- The long-range (20-year) needs plan takes expected funding into account but is not technically balanced to revenue forecasts.
- The short-range (four-year) Transportation Improvement Plan (TIP) is, by law, “fiscally constrained” – balanced to accurate forecasts of available funding.

The CRPC plans are based on consensus growth projection derived from input from elected and technical staff in each parish.

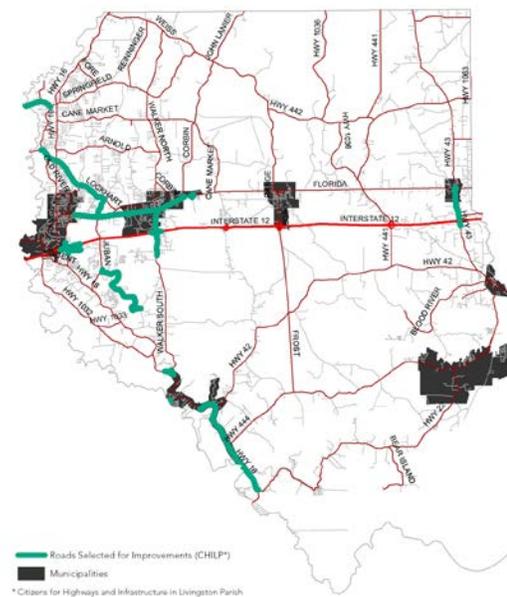
### Parish road-widening priority list

The Livingston Parish Road Priority List recommends several improvements that duplicated state priorities, as well as more significant improvements to Highway 190 and an additional bridge/roadway over the Amite River south of Hillon Hood Road that would connect 4-H Club Road to Tiger Bend Road in East Baton Rouge Parish (see Figure 30).

### Citizen group road-widening recommendations

In addition to state and parish priority improvement lists, Citizens for Highway and Infrastructure in Livingston Parish (CHILP), a citizen activist group, has also recommended roadway capacity improvements to federal, state, and parish/city (municipal) roads. Some of the CHILP recommendations mirror those of the CRPC and the Parish and some are unique (see Figure 31).

Citizens for Highway and Infrastructure in Livingston Parish



*Figure 30: Citizens for Highway and Infrastructure roadway priorities.*

*Synopsis of road capacity plans*

Assuming that all the CRPC planned projects have been built, the CRPC congestion forecast for 2032 shows that congestion will still be a major problem in western Livingston Parish.

According to CRPC Director Huey Dugas (retired)<sup>15</sup>,

“Even with all the scheduled improvements, congestion (in Livingston Parish) will be worse in 25 years than it is today.”

<sup>15</sup> Personal communication \_\_\_\_\_ 2012.

This reaffirms that road improvements always lag behind demand. It is unlikely that the additional Parish and/or CHILP recommendations will significantly improve that forecast.

## Improving travel efficiency/reducing congestion

As highway-widening is not likely to significantly reduce congestion, the parish needs to consider increasing connectivity through a grid of alternative routes.

### *Local traffic uses arterial roads*

Although commuting is a major cause of traffic during peak periods, it represents a fairly small amount of total daily travel. Studies show that commuting is a little more than half of morning peak period traffic, a little less than half of evening peak period traffic, and only 20 percent or less of daily traffic. Local trips also tend to slow traffic by making more turning movements and lane changes, all of which contribute to congestion.

All of this would be fine if local trips occurred on local roadways. However, where the local road network is incomplete, as it is in Livingston Parish, these trips must use arterial roads, including Highway 190 and I-12, often for very short distances.

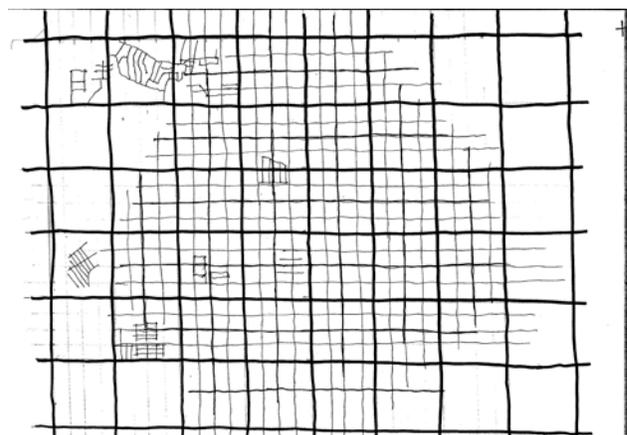
### *The importance of a complete network of roads*

For local traffic, with multiple local destinations, a large number of small roads carry more traffic than a small number of wide roads.

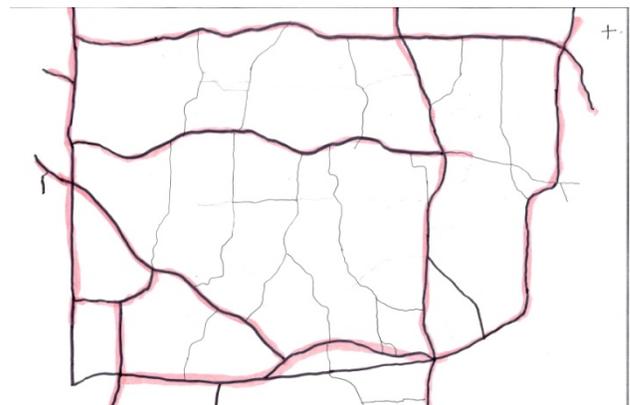
In fact, in most places developed as much as Livingston Parish is projected, and that have good traffic flow, there is usually also good connectivity—multiple alternate routes that form a grid. In sizing the optimum grid, traffic engineers often use these rules of thumb:

- **Arterials** = 1-mile spacing
- **Collectors** = ¼-mile grid
- **Local roads** = 330- to 530-foot blocks

This theoretical grid is shown in Figure 32. (several actual subdivisions in Livingston Parish are inserted in west edge of the illustration to convey the scale of the grid). Obviously this theoretical grid must be adapted to local conditions.



*Figure 31: A hypothetical 1-mile arterial grid (bold lines), with smaller ¼-mile grid for collectors. Note actual grid of several subdivisions shown for scale*



*Figure 32: The actual grid of arterial and collector roads in the Denham Springs / Walker area.*

The benefit of a grid-like system is that overall, the road system can have smaller, lower speed, and safer streets, can cost less, and yet can carry more traffic than less connected networks. A more connected system can also remove local traffic from arterial corridors, which significantly reduces congestion during peak travel periods.

With more of a grid system, with multiple alternate routes, the collector roads do not have to be widened to four-lane sections.

### *The extent of the existing arterial grid in the parish*

The actual grid of arterial/collector roads found in a portion of western Livingston Parish is shown in figure 33. This illustration shows:

- A very incomplete grid at the arterial level and most of it is oriented east-west.
- There are no true collector roads, only a series of north-south routes made up of local farm-to-market roads whose capacity is limited by the frequent driveways.

Because most of the shopping in the Parish is in the urbanized corridor paralleling I 12, and the Arterial grid is missing in much of the developed area of the Parish, the net result is that local traffic must go significantly out of its way—or use the north-south farm-to-market roads. Once they get to the urban corridor, the east-west options are still limited to either Highway 190 or I-12. Travelers balance travel times between them until, during heavy travel periods, they tend to have approximately equal travel times

(i.e., congestion).

If the Parish continues to develop with the current system

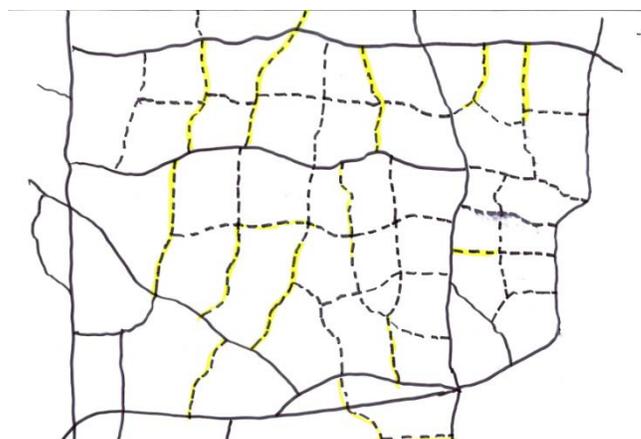
- The north-south farm-to-market roads will continue to fill in with development and curb cuts for driveways, further reducing capacity.
- Cul-de-sac development of the interior of the “blocks” will eliminate future opportunities for completing key “missing links” in the grid that could alleviate and help spread out traffic.

The net result will be continued, increasing congestion.

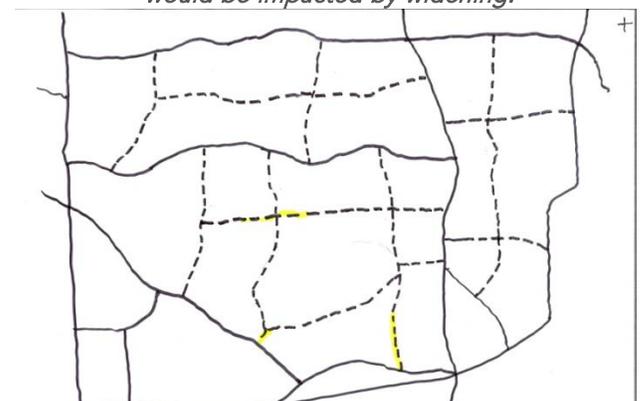
### *Options for increasing connectivity*

The alternatives are:

- A. Create a more complete grid of roads (see Figure 34).



*Figure 33: Option A. Dashed lines indicate new/widened roadways to form a more complete arterial grid. Yellow segments indicate sections where existing structures would be impacted by widening.*



*Figure 34: Option B. Create new arterial and collector roads in vacant areas between existing development. Note the yellow areas of impact to existing structures are much less.*

B. Widen the existing roads and add key missing links (see figure 35).

*A. Creating an alternative arterial grid*

In significant portions of the western parish, there are still undeveloped areas that would allow new arterial roads to be constructed. This approach would still require significant acquisition of rights-of-way and installation of new infrastructure, but would impact far fewer existing structures and utilities (see Figure 34).

In the Implementation section below, the CMP recommends a hybrid of Option A and B. The actual alignment of roads will require significant, detailed analysis in order to more fully understand the cost implications, environmental constraints, etc.

There is some urgency to making this decision in order for the Parish and/or DOTD to begin reserving rights-of-way before development precludes this possibility.

*B. Widening existing roads*

Figure 35 shows the existing major parish roadways widened along with adding several, very general new arterial corridors to fill in the “missing links”.

A cursory evaluation of widening existing roads in just this part of the parish reveals that, if most of the key arterial roads were widened, the additional right-of-way needed would intercept approximately 2,000 structures.

### **Other non-transportation ways to reduce congestion**

#### **Attract major employment and stores**

Much of the commuting traffic is due to the job and retail base in Baton Rouge and Ascension Parish. Many residents of Livingston Parish work in East Baton Rouge Parish and many are also attracted by the quality and diversity of shopping. The Livingston Economic Development Council is working hard to attract major employers and stores to Livingston Parish, but it is a long-term project and both employers and stores tend to follow development rather than precede it. So, we still need to grow and solve our traffic problems while we work on economic development.

#### **Reduce travel needs by allowing/encouraging more complete communities**

Although commuting is a major cause of traffic during peak periods, it represents a fairly small amount of total daily travel. Studies show that commuting is a little more than half of morning peak period traffic, a little less than half of evening peak period traffic, and only 20 percent or less of daily traffic.

Much of daily household travel is for other purposes – school trips, errands, shopping, recreation, etc. (This is described in popular media as the “soccer mom” phenomenon.) Where residential areas are separated from schools, shopping, parks and other destinations, people must drive long distances, often in heavy traffic, for routine daily activities.

One long-range strategy to overcome congestion is to make Livingston Parish a more “complete” place to live and work. This reduces driving by enabling people to make shorter trips. This is accomplished by allowing new development to include a mix of uses (homes, shops, employment) in the same development.

Where development has a greater mix – like our older communities had – the amount of household driving can be much less and can take place on local streets. This removes local traffic from congested arterials. It also reduces household exposure to congestion, lowering household costs, and improving quality of life.

Allowing the market to provide more “complete” communities would offer other benefits to Livingston Parish by diversifying the tax base and increasing local employment.

Reducing the number of access points onto major drives

Providing drop-off turn lanes into schools

#### *The proposed Major Street Plan*

Figure 36 is the recommended, initial Major Street Plan (MSP) for the parish. It indicates:

1. The general location of a modified grid comprised of existing and proposed arterial corridors. The proposed system includes a frontage road along both sides of I-12 to encourage buildings that front toward the interstate (see chapter 2, Land Use).
2. Proposed future I-12 interchanges.
3. Higher priority improvements as identified by:
  - i. Parish Mayors.
  - ii. The Citizens for Highways and Infrastructure in Livingston Parish.
  - iii. The Capital Region Planning Commission.
4. Problem roadways (as identified in the Parish Hazard Management Plan).
5. Roadway flooding issues (as identified by the public in the CMP process).

## Reserving road corridors

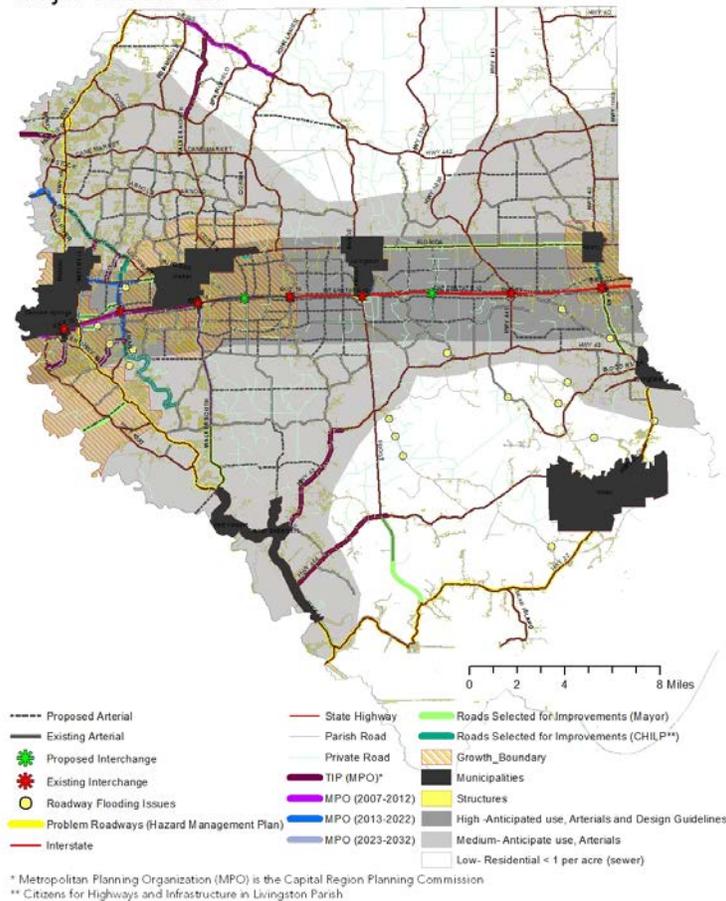
The MSP proposes general locations for future arterial roads only in areas where high and medium growth is anticipated.

The locations shown attempt to avoid wetlands as much as possible. Since planning level data was used in the creation of the MSP and the wetland dataset used is not highly accurate for individual wetlands, a more detailed study will be required to refine the alignments.

Therefore, the locations of the proposed roads are intended to be desire lines, not specific alignments. They must be verified by detailed engineering analysis, wetland verification, and should be further adjusted to accommodate future development.

However, these alignments should be preserved from other types of development until suitable replacement alignments can be reserved. As per the current Parish Code, future development should be consistent with the MSP. This means that if streets are proposed differently than in the MSP, the MSP should be amended before approving the modified layout.

**Major Street Plan**



*Figure 35: Major Street Plan (see end of plan for full page version of image).*

### How much servitude width should be reserved?

For a typical arterial it is recommended that initially a servitude of 142 feet be reserved, until revised by future study. This is based on preserving the potential for the following roadway components:

- 60' up to 5 lanes of roadway or four lanes with a median (12' lanes, 14' median).
- 16' two 5' to 7' shoulders (including future curb-and-gutter).
- 30' two 15' swales (or one 40' canal) for storm water drainage ways<sup>16</sup>.
- 14' two 7' servitudes for utilities (which also functions as a setback for sidewalks if developed).
- 10' two 5' sidewalks (if desired).
- 2' two 1' construction setbacks to the servitude line.



Figure 36: Livingston Parish Arterial right-of-ways

For a typical arterial it is recommended that the initial servitude expand to 180 feet at intersections, until revised by future study. This is based on preserving the potential round about.

<sup>16</sup> Drainage ditch dimensions in the parish vary significantly according to functional needs from 0' where there is a storm sewer, to 40' where a major canal is required. Therefore, it is recommended that this dimension be verified, and adjusted on a case-by-case basis, according to the recommended parish-wide drainage master plan, or a specific drainage analysis.



*Figure 37: Round about*

### **Future I-12 interchanges**

Several possible future interchange locations are indicated in order to allow for planning of future infrastructure (see Figure 36).

### **Fiscal realities—the cost of maintaining roads**

In Louisiana, as in all states today, state highway construction and widening projects are funded usually with a mix of 20% state funds and 80% federal funds.

In recent years, the costs of operating and maintaining the existing highway network have grown faster than state transportation budgets. As a result, an increasing proportion of the state transportation program must be devoted to care and upkeep of existing highways. At the same time, due to reductions in total vehicle miles of travel nationwide and consequent reductions in the gas tax proceeds, the funding of the federal transportation program has been shrinking. It appears that this problem will take some years to resolve.

So, it is probable that Livingston Parish will have greatly reduced external transportation funding for the foreseeable future.

Livingston Parish currently is responsible to maintain over 800 miles of roadways. According to several studies, the annual cost of maintaining a two-lane asphalt road is approximately \$15,000 per mile (see text box “How Much Does it cost to Maintain a Road?”). This means that the parish should be budgeting approximately \$12 million per year for road maintenance. In recent years, faced with other compelling priorities, the parish has budgeted far less than that.

This suggests that the parish needs to:

1. find additional funding sources to finance future road needs
2. be very selective about the roads for which it accepts maintenance responsibilities in the future.

### **Implementation**

#### *Strategies*

1. To continue to support growth in the unincorporated areas of the Parish, even at low-density suburban levels, reducing congestion is essential.

2. A key strategy to reducing congestion is to provide efficient alternate routes through the parish— a more complete network of arterial and collector roads.
3. The Comprehensive Master Plan (CMP) identifies very general corridors for future roads (to ensure that they are not lost to interim development). This element of the CMP will serve as the initial Major Street Plan as identified in the Livingston Parish code. Upon completion of the CMP, the Parish needs to conduct a more detailed Transportation Plan (an inventory of roadway assets, conditions, future transportation needs, refinements to the Major Street Plan, etc.) to guide the development of future parish (and state) roads.
4. To further increase connectivity to reduce congestion, as well to provide better emergency access and evacuation, the Parish also needs to enforce existing regulations regarding road connectivity between new subdivisions. (Interconnections between future subdivisions would also allow residents to take alternate routes to get to collectors and arterials that may be more direct, thus reducing congestion.)
5. The cost of parish road maintenance is high, and the parish has not been adequately funding maintenance at a sustainable level. To better manage parish road maintenance, the Parish needs address the following issues in the short term:
  - a. Necessary maintenance levels need to be fully budgeted. (This will be helped by a detailed analysis in the Transportation Plan).
  - b. Developers have typically not been required to build collector roads. As a result, that portion of a typical road network is often missing in the parish. Collector roads, or equivalent road impact fees, need to be provided by future major developments.
  - c. Future road construction may involve either property relocation, or wetland mitigation.
6. Because of the cost of maintenance, the parish needs to be very selective about accepting additions to the Parish road system. Roadways not meeting existing parish standards (1,000 feet, five dwelling units, etc.) should be rejected.
7. Several groups have identified road priorities in the Parish. The Livingston Parish Council is currently discussing a road priority list but it has not been finalized. After then Parish Council has update their priorities, this list should also be update. The list should be updated yearly to address safety and congestion in the parish. Road with funding allocated (Federal, State, or Local) should be considered top priority.
  - a. Existing road priorities:
    - i. Extend Cook Road to Juban Road.
    - ii. Extend Hooper Road (LA 408) from Eastern Baton Rouge Parish crossing of the Amite and connecting into LA 16 and Springfield Road.

- iii. Construct road at the end of Walker South Road (LA 447) extending to LA 42 in Ascension Parish.
  - iv. Expand overpass at Interstate I-12 and South Walker Road (Highway 447).
  - v. Widen US 190 (Florida Blvd) from Denham Springs to LA 449 past Walker and from Livingston to Albany.
  - vi. I-12 / Pete’s Highway interchange.
  - vii. Widen LA 64 from LA 16 to Magnolia Bridge.
- b. To be prioritized, in no particular order:
- i. Brown Road.
  - ii. Eden Church Road.
  - iii. Extend Lockhart from Cockerham to Burgess Road.
  - iv. Extend Juban Rd to Lockhart.
  - v. Extend Frost Road (south from intersection of LA 444 to LA 22).
  - vi. LA 444 from LA 16 to Frost Road.
  - vii. LA 447 South of I-12 to LA 16.
  - viii. LA 447 North to Corbin Ave.
  - ix. LA 447 I-12 overpass at Walker.
  - x. Juban Road from I-12 to LA 190.
  - xi. Juban South of I-12 to Brown Road.
  - xii. Pete’s Highway Interchange.
  - xiii. Port Vincent Bridge replacement and widening.
  - xiv. Satsuma I 12 overpass.
  - xv. Tate Road from Pete’s Highway to Juban.
  - xvi. Tiger Bend Road.
  - xvii. Turning lanes at US 190 and Highway 1029
  - xviii. Turning lanes at US 190 and Highway 449
  - xix. Upgrade LA16 (various locations at intersection with Walker South Road and from the northern border of French Settlement south to LA 22).
  - xx. Widen LA 43 (from interstate north to Steward Lane).
  - xxi. Widen LA 43 (from Interstate 12 south to Highway 42).

***Actions***

Short-term: (1-2 years)

1. Adopt the CMP Major Street Plan on an interim basis.
2. Notify the public of the intent to begin following the Parish Code with regard to requiring future developments is consistent with the Major Street Plan.

Longer-term: (3-5 years)

Commission a detailed Parish Transportation Master Plan, including:

1. An update of the Major Street Plan to:
  - a. Avoid wetlands where possible.
  - b. Refine interchange locations.
  - c. Update the priorities for new parish roads.
2. Establish servitude ownership and widths for all parish roadways.
3. Identify which parish roadways are consistent with Parish Code criteria for maintenance by the parish.
4. Investigate roadway flooding issues, problem roadways, and propose remedies.

Ongoing:

1. Implement Parish Code requirement relating to:
  - a. Major Street Plan.
  - b. Connectivity of future subdivisions.