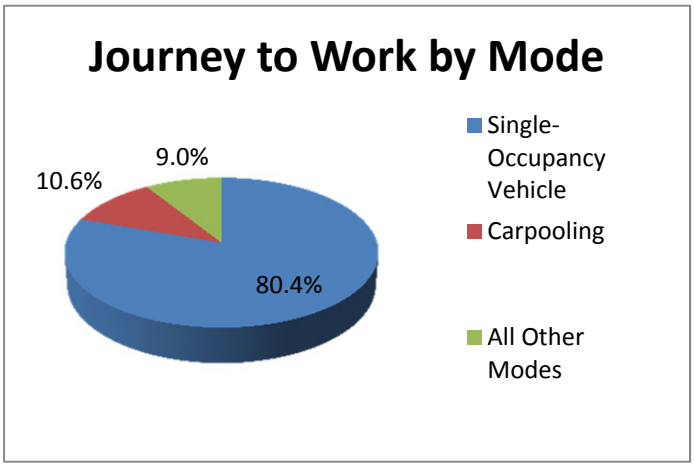
CHAPTER 4
TRANSPORTATION ELEMENT

INTRODUCTION

According to the recently completed transportation plan for the region commissioned by South Central Planning and Development Commission, the Metropolitan Planning Organization for the Houma-Thibodaux metro area, at least 91% of journey to work trips in the region are made using the private automobile. All other modes (walking, biking, public transit, or working at home) combined account for the remaining 9% of journey to work trips in the region. Transit usage accounts for 0.6% of these trips, although this mode may register a very slightly higher percentage in Terrebonne Parish where public transit for the region originates and where it is more readily available.



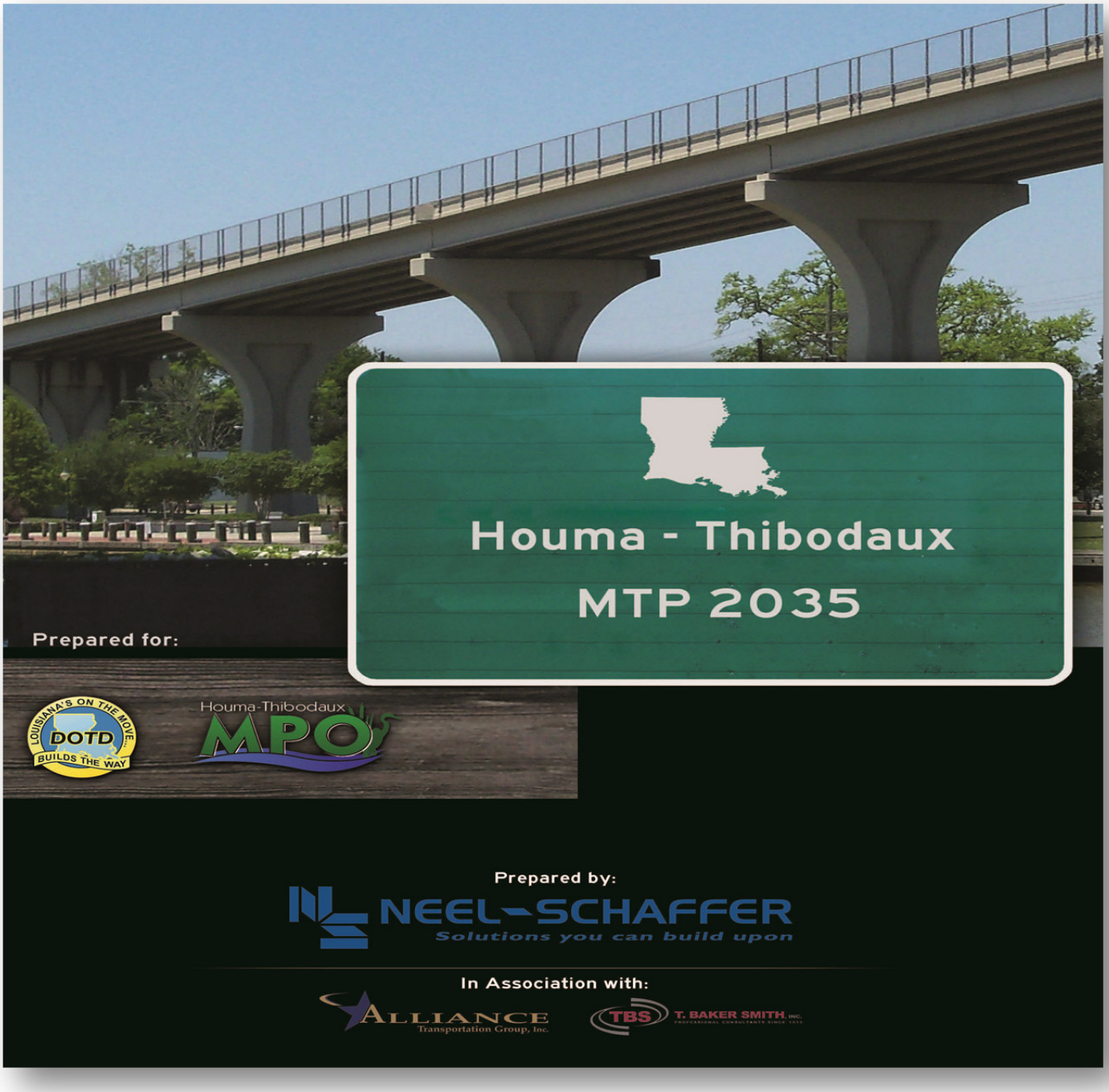
Source: MTP 2035, Neel-Schaffer, Inc. for SCPDC/MPO

Nevertheless, it is expected that public transit accounts for no more than 1% of all journey to work trips in Terrebonne.

Single-occupancy auto use accounts for 80.4% of journey to work trips, with carpooling adding 10.6%. It is evident that the region and Terrebonne Parish rely heavily on the private auto for work trips. For the foreseeable future, therefore, the Parish's transportation element of the Comprehensive Plan Update, must look to highway and roadway projects as a way to improve mobility while introducing and implementing policies over the next decade that begin to shift transportation "choices" toward total accessibility and alternate modes of transportation. Obviously, this is not a shift that can take place quickly. However, as land use policies in the Parish change over time to favor the living styles of an aging population and smaller family sizes, transportation policies geared to support these land use changes—such as roadways designed to safely and efficiently accommodate multiple modes, thereby improving accessibility—may follow. A transportation system focused on accessibility, rather than solely on mobility, is a much more sustainable system.

ROADS AND HIGHWAYS

As it is required to do by state and federal funding authorities on a periodic basis, the Metropolitan Planning Organization for Transportation Planning, or MPO—which for the Houma-Thibodaux region is South Central Planning & Development Commission—recently completed its transportation plan for that part of its jurisdiction considered part of the metro area. This plan, Houma-Thibodaux MTP 2035, was completed by Neel-Schaffer, Inc. (see following page). This transportation planning document should serve as a resource for decision-makers in Terrebonne Parish relative to state and federal highway improvements in Terrebonne and the MPO area. For local streets, Terrebonne decision-makers should rely on the parish's Major Thoroughfare Plan. In this plan are found the roadway improvements which can be made using local funding exclusively.



The region included in this document comprises all of Terrebonne Parish, a portion of Lafourche Parish, and an even smaller portion of Assumption Parish. For the purposes of this Comprehensive Plan Update, however, only Terrebonne Parish will be considered. This transportation plan, which is available for viewing at http://htmpo.org/MTP.aspx, forecast future transportation needs using a model to generate vehicular trips which were then assigned to various Transportation Analysis Zones (TAZ). The model relied on a large number of variables, including land use, population, household, schools, and a number of other factors to make these assignments. Then, these trips were distributed over

the roadway network based on travel time destination to destination and the capacity of existing roadways. In this way, the model was able to evaluate roadway segments that either exhibited capacity constraints now, or would do so in the future based on expected traffic growth.

The highway network itself was described in terms of the functional classification of its significant roadway facilities. These include 4-lane expressways, principal arterials, minor arterials, and collectors. Collectors comprise the single largest percentage of classified roadways in Terrebonne Parish. The classified roadways (by functional classification) are shown in Figure 4-1. Local streets, whose sole function is to provide access to adjacent land, are typically classified by the type of land use they serve—residential, commercial, and industrial. These types of streets are not included in the network used by the computer model.

Figure 4.1
ROADAY FUNCTIONAL CLASSIFICATION

- **4-lane Expressways**
- **Principal Arterials**
- **Minor Arterials**
- **Collectors**

The model is used next to evaluate deficiencies on the existing highway network. In this case the network was current as of 2007. Deficiencies are shown by the relation of roadway volume (traffic actually carried, or projected to be carried) to the roadway's capacity. The closer volume gets to capacity, the greater the deficiency of the roadway or roadway segment. When roadway volumes achieve 75% of capacity, then the road is on the brink of serious congestion problems in the near future as traffic volumes increase relative to capacity. These roadway deficiencies in Terrebonne Parish are shown in Figure 4-2. Existing roadway deficiencies for the City of Houma and its immediate environs are depicted in Figure 4-3.

MPT 2035 next built a roadway network for the transportation model which included all existing facilities previously included in the model, plus the committed highway projects (E+C Network). These are projects for which funding has been identified and programmed, but not yet under construction, or, if under construction, not yet completed and open to traffic. The Terrebonne committed roadway projects are shown in Figure 4-4. When the model was adjusted to include the committed highway projects (E+C Network) in Terrebonne Parish, projected traffic for the planning horizon (yr. 2035) was generated and the deficiencies are shown in Figure 4-5.

Those same planning year deficiencies based on the E+C Network, are shown for the Houma area in Figure 4-6. An analysis of this figure leads to the conclusion that the committed projects will have a beneficial impact on the volume to capacity ratio (VC ratio) in some areas, but projected traffic will require additional improvements to relieve congestion by the end of the planning horizon.

a. Improvement Strategies

The MTP 2035 offered a range of different strategies designed to improve roadway needs. These included:

(i) Roadway Preservation and Rehabilitation – since a great deal of public tax monies have been spent of the transportation and highway infrastructure to date, sufficient funds must be dedicated to

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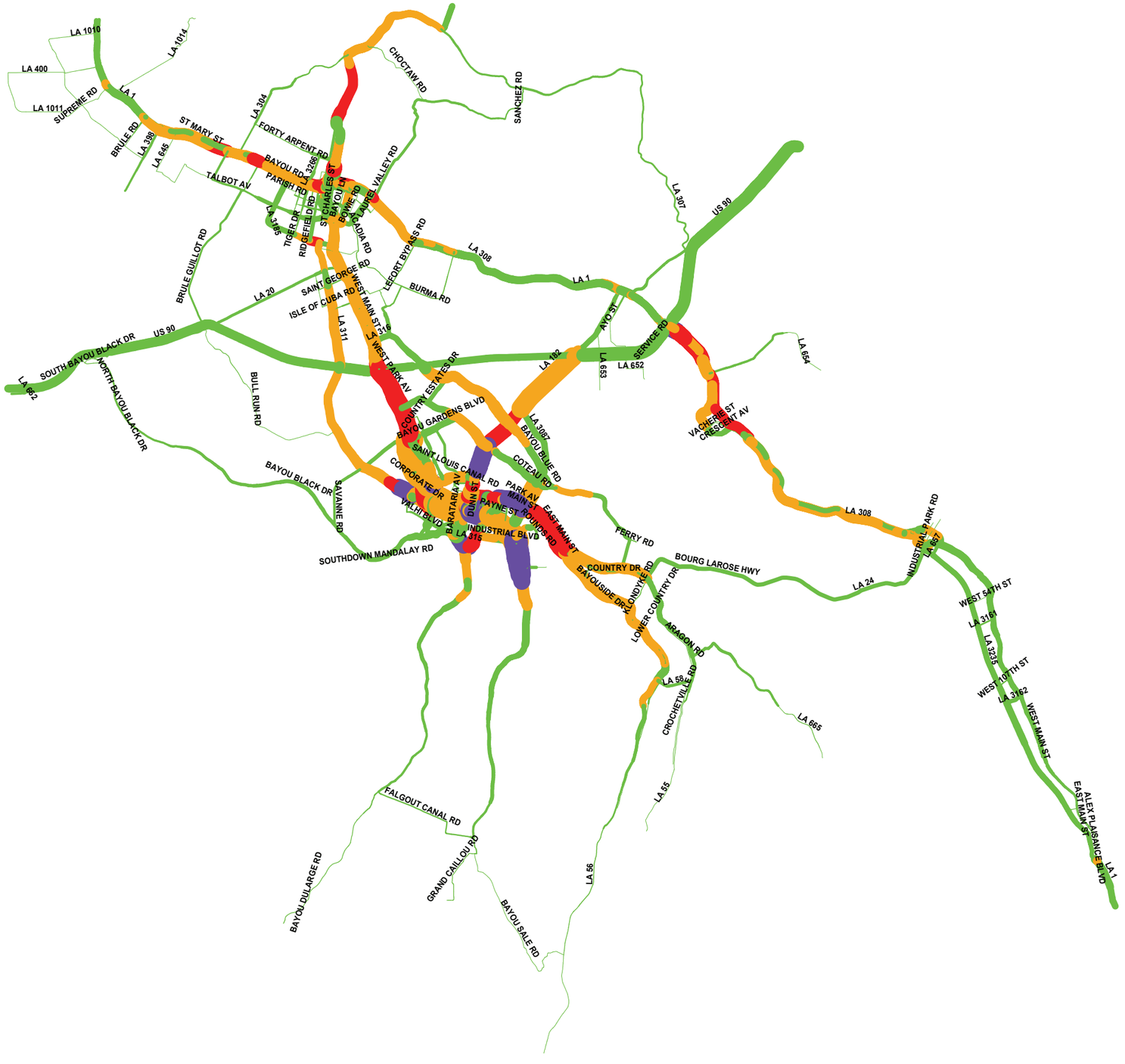
Figure 4-2

2007 Deficiency Map
Study Area



LEGEND

Volume/Capacity
- 0.00 to 0.50
- 0.50 to 0.75
- 0.75 to 1.00
- 1.00 to 10.00

Vehicle Flows

30000 15000 7500

0 3 6 9

Miles

2007 Network

Source: NSI

N W E S

Prepared for:

Louisiana's On The Move. DOTD Builds The Way

Houma-Thibodaux MPO

Prepared by:

NEEL-SCHAFFER
Solutions you can build upon

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Figure 4-3

2007 Deficiency Map
Houma Area

LEGEND

Volume/Capacity
- 0.00 to 0.50
- 0.50 to 0.75
- 0.75 to 1.00
- 1.00 to 10.00

Vehicle Flows

30000 15000 7500
0 .33 .67 1
Miles

2007 Network

Source: NSI

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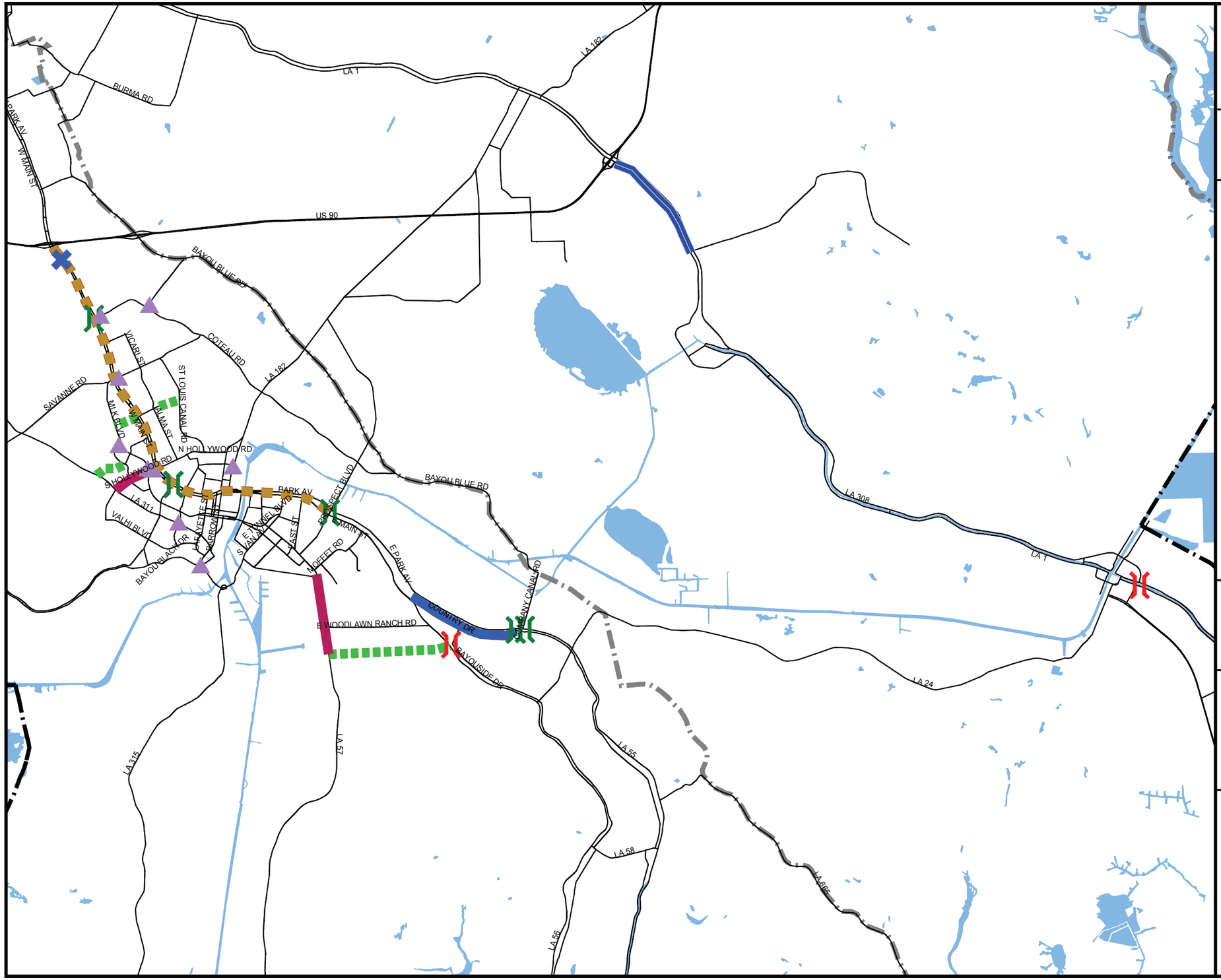
Figure 4-4

Committed Projects
Houma Area



LEGEND

- Study Area
- Parish Lines

Impvt_code

- Widen Add 2 Lanes
- New Roadway
- Reconstruction
- Center Turn Lane
- ITS Corridor
- New Bridge
- Replace Bridge
- Turn Lane
- Pedestrian Bridge

Source: LADOTD
HTMPO

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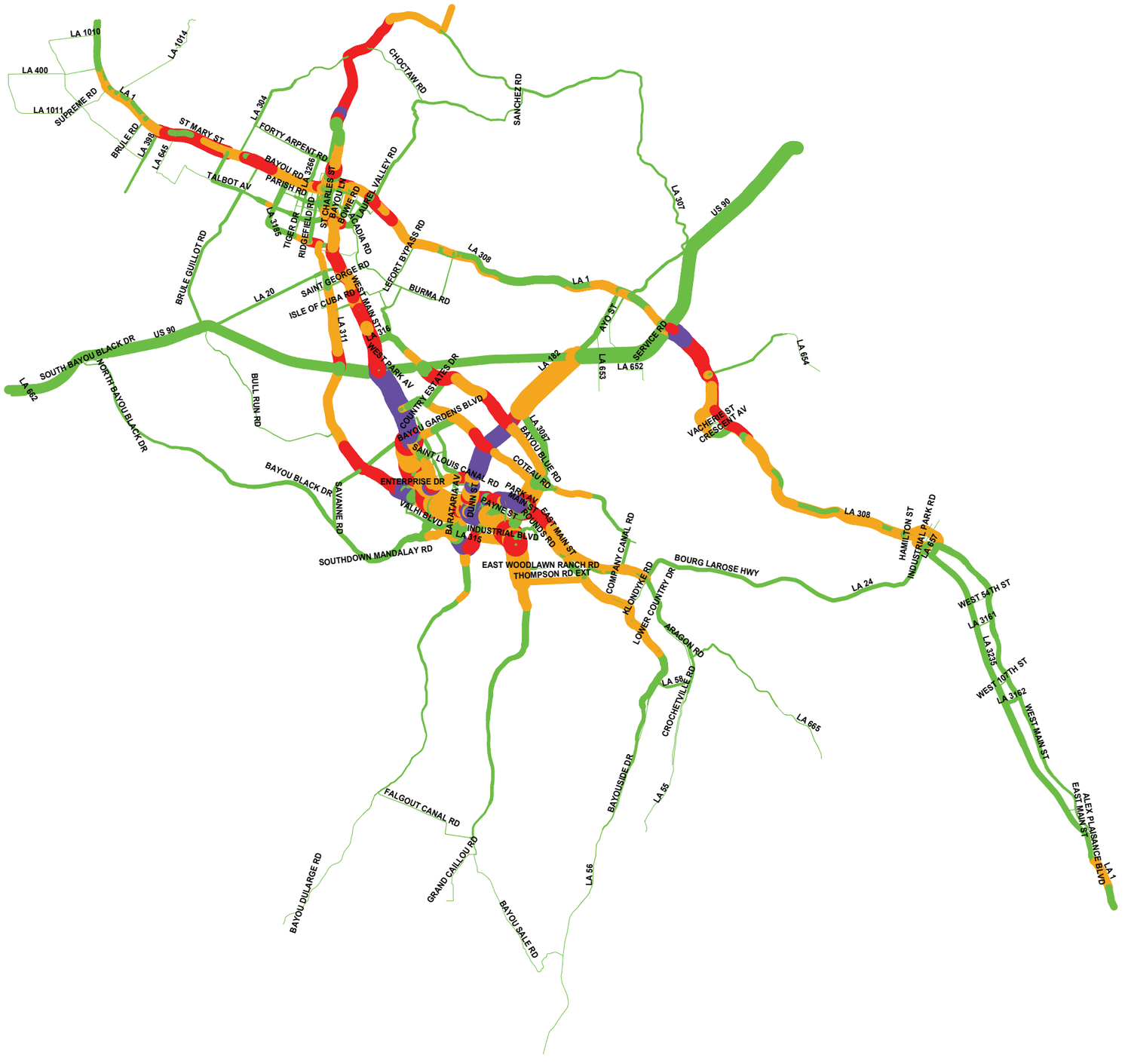
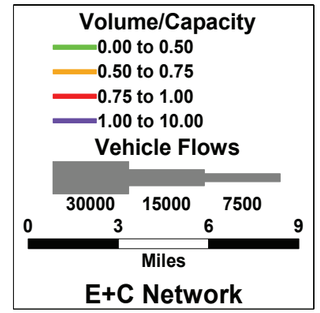
Figure 4-5

2035 Deficiency Map
Study Area



LEGEND



Source: NSI

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Figure 4-6

2035 Deficiency Map
Houma Area

LEGEND

Volume/Capacity
- 0.00 to 0.50
- 0.50 to 0.75
- 0.75 to 1.00
- 1.00 to 10.00

Vehicle Flows

30000 15000 7500
0 .33 .67 1
Miles

E+C Network

Source: NSI

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"protect the public investment" and improve highway safety (MTP 2035, p. 5-19). The plan's solution is to recommend "funding priority to system preservation" (Ibid). The plan, therefore, allocates a significant amount of funds available precisely for this purpose.

(ii) Transportation Demand Management (TDM) – With such a large percentage of journey-to-work trips made by single-occupancy vehicles, it would be cost-effective to implement methods and practices designed to reduce the number of vehicles on the road, thereby reducing traffic congestion, and, at the same time, improving air quality. The idea is to do this without the added (considerable) expense of additional capacity improvements to the roadway network. The plan suggests a number of potential TDM measures:

- Increasing carpooling and shuttle buses to major employment areas
- Supporting Flex-Time work schedules with major employers in order to reduce peak-time roadway congestion
- Support for telecommuting which will help to reduce peak-hour congestion
- Establishment of Park-N-Ride facilities
- Providing an educational program laying out the costs and benefits of carpooling, ride-sharing and other high-occupancy trip options available to the public

The potential improvement to air quality these suggestions represent should not be overlooked. Should the region fall into non-attainment in terms of the new ozone standard (expected shortly from the U.S. Environmental Protection Agency), a menu of these suggestions, if implemented, could greatly reduce local vehicle miles of travel (VMT) and help to reduce the amount of nitrogen oxide (NOx) pumped into the ambient air by the combustion of motor fuels. Along with volatile organic compounds (VOC), Nox is an ozone pre-cursor. When combined with sunlight, these two pre-cursors produce ozone. Within the state, further reduction of VOCs, although useful, will have only minor impact on the reduction of ozone in most metropolitan areas, according to the Louisiana Department of Environmental Quality (LDEQ). The largest gain in the reduction of the ozone will need to come from the Nox side of the equation. If necessary to meet the anticipated ozone standard, most metropolitan areas in the state, including Terrebonne Parish, will have to employ a variety of methods to reduce VMT's and, consequently, Nox production. Transportation Demand Management techniques can play a large role in such a strategy.

(iii) Traffic Operational Improvements – A range of operational improvements were proposed which could increase efficiency within the roadway network. Many of these suggested improvements are relatively inexpensive and could be cost-effective measures to improve traffic operations locally and reduce delays.

There is no doubt that traffic and resultant delays are growing in Louisiana and, by extension, in Terrebonne Parish. According to the *2010 Urban Mobility Report,* produced by the Texas Transportation Institute of Texas A&M University, commuter delays (time lost while driving in traffic) have increased by 311% and 82.35% between 1982 and 2009 in Baton Rouge and New Orleans, respectively. These significant increases are related to a growth in commuter traffic, among other factors. Although this report does not contain similar data for Terrebonne Parish, anecdotal information and well as informal observation indicate that a similar situation, if less dramatic, exists locally and could be getting worse.

Traffic operational improvements could include:

- **Various Signalization Improvements** (new signals, synchronization, and signal interconnect)
- **Access Management**. Effective strategies in the area of Access Management have been used to preserve the traffic-carrying characteristics of minor and major arterials which are threatened with excessive and/or uncontrolled curb cuts. However, Access Management strategies are varied and can also include left-turn restrictions, prohibition of on-street parking, intersection and/or traffic signal spacing, the use of frontage roads to control direct access to land use, various types of turn lanes, including deceleration lanes, and roadway modifications which could include medians, sight distance setbacks, and roadway geometry improvements. Many times access management policies are written into transportation plans, subdivision regulations, or major thoroughfare plans. Given the range of Access Management techniques and their applicability in various situations, these improvements are particularly cost-effective and should be pursued by Terrebonne Parish particularly with new commercial centers and development.
- **Peak Hour Reversible Streets** – this strategy must be carefully applied and managed. It entails the reversing of street direction in peak hours such that two-way streets temporarily become one-way streets to increase roadway capacity in the peak direction.
- **Various Intersection Improvements** – one example of this is the recent spate of right-turn lanes constructed at many congested intersections throughout Houma. These have served to reduce peak hour congestion for minimal costs. Another example is the use of center turn lanes on LA 311 between So. Hollywood and Savanne Roads.
- **Traffic Control Signage Improvements** – use of regulatory, warning, and informational signage (in conformity with Manual on Uniform Traffic Control Devices) to reduce driver confusion where warranted.
- **Turn Prohibitions** – used to limit conflicting movements at intersections during peak hours. Such prohibitions can help to make pedestrian crossings safer.

- **Truck Routes** – Although a review of truck routing in Terrebonne Parish was not specifically mentioned in MTP 2035, a closer look at these is now warranted due to the impact large trucks have on plans for the revitalization of downtown Houma.

Currently, most truck routes are included on state highways in Terrebonne Parish. The state roadway network provides trucks with ample routes to access virtually every part of the parish. The LA 24 couplet, also referred to as Main Street and Park Avenue which bracket Bayou Terrebonne, runs through the center of downtown Houma. This couplet also includes two fixed span bridges over the Gulf Intracoastal Waterway (GIWW) at its intersection with Bayou Terrebonne. These bridges provide truck traffic with a reliable, not to mention attractive alternative to the Tunnel under the GIWW and the state route which incorporates two movable bridges farther to the west of the Tunnel. Use of the Tunnel, of course, is prohibited for trucks pulling certain types of cargo. These loads automatically gravitate toward the routes with bridges and, of these, the most reliable (due to being fixed spans) are the twin bridges over the GIWW in downtown Houma. The two movable bridges are frequently open to vessels on the GIWW or the Houma Navigation Canal (HNC), both of which carry a great deal of marine traffic. Frequent openings for vessel traffic result in delays for vehicular traffic on the approaching state roadways. In addition, one of these movable bridges (the one over the HNC) is occasionally out of service for routine maintenance or due to damage caused by marine vessel collisions. Such closures, while not frequent, are usually lengthy, causing motorists—and large trucks—to use the other alternatives. Of these, the fixed span bridge route in downtown Houma is the route of choice for most of this traffic.

When this happens, unfortunately, more truck traffic than normal is routed through downtown Houma. At a meeting held with downtown interests, both business and property owners, the removal of truck traffic from Main Street downtown was given high priority. This meeting was held in conjunction with the first two phases of this Comprehensive Plan Update. From a traffic operational standpoint, the rerouting of large trucks from the confined corridor of LA 24 in downtown Houma will bring about improvements, including increased capacity and reduction in traffic delays. In addition, rerouting will also allow revitalization efforts in the downtown area, which are very important to this planning update, to move forward. The pursuit of this strategy will require, however, careful study. There is no doubt that the

undertaking of a truck route feasibility study in Terrebonne is long overdue. Although there are alternative routes which are capable of removing large trucks from downtown Houma, the costs of doing so need to be carefully studied and documented before implementation can proceed.

- **A combination of two or more of the above strategies** – where warranted.

(iv) Public Transportation and Other Non-Traditional Modes

Public transit and other modes, such as pedestrian and bicycle now with the increasing emphasis on Complete Streets, have important roles to play in the overall transportation plan for Terrebonne Parish. These will be developed in subsequent sections.

(v) Intelligent Transportation System (ITS) – ITS strategies are based on the use of available technologies, such as traffic cameras connected via a fiber-optic system to computers, monitors, and traffic signal controllers which allow traffic signals (and sometimes roadside informational signage) to be manipulated from a remote location to improve traffic flow or to adjust to changing traffic conditions. Changes can be done in real time, as the need actually arises. Although relatively expensive initially, the cost of ITS applications has come down and its use could become more wide-spread. One such application is currently nearing completion in Houma and should be fully operational within the next six months.

In addition to adjusting traffic signals to allow for optimal traffic flow during peak hours, there are other applications for the ITS technology in urban traffic. These include:

- **Traffic Incident Management** – a system which monitors traffic in real time and has the ability when so designed to share incident information among several agencies for better coordination. When properly used, variable message boards can be used to inform motorists of delays, suggest alternate routes, or advise of accidents ahead.
- **Travel Information Services and Roadway Weather Information** – used by the state transportation department to provide weather and other information to motorists through use of roadside messaging signage which can be updated almost instantaneously. But citizens can access this information, including weather related travel information, in a variety of ways. Twitter is one of these.
- **Work Zone Management** – it is anticipated that DOTD will be able to minimize work zone traffic disruptions through the use of the ITS technologies being brought on line in the Parish.
- **Emergency Response and Homeland Security** – at some point in time, hurricane and other evacuations will be better facilitated and coordinated among the various responsible agencies through use of emerging ITS technologies in the Parish.

(vi) Roadway Capacity Improvements – The MTP 2035 indicated a need for roadway capacity improvements based on forecasted deficiencies in the planning horizon year. The roadway improvements recommended in this plan included those committed projects—for which funding has been allocated in the MPO's Transportation Improvement Program through FY 2014—and long-range projects. However, final recommendations must be based on the expected availability of future funding, meaning that the plan must be "fiscally constrained." Overall, this usually means that not all projects can be added in the long run, so MTP 2035 utilized a screening process to rank projects according to their ability to reduce congestion, based on the projects ability to generate system benefits in terms or reducing Vehicle Miles Travelled, Vehicle Hours Travelled, and Vehicle Hours of Delay. Through an iterative modeling process, projects were added to the E+C Network.

Ultimately, MTP 2035 generated a program of staged improvements to the transportation system over three time periods, or stages (2010-2015; 2016-2025; and 2026-2035), to preserve the necessity of recommending a system of roadway improvements that is fiscally constrained. All of these can be found in much greater detail, of course, in MTP 2035. The Stage 1, Stage 2, and Stage 3 Houma area/Terrebonne Parish transportation improvements are shown in Figures 4-7, 4-8, and 4-9, respectively.

With the completion of all these improvements by the year 2035, the projected V/C ratios for roadways in Terrebonne Parish are shown in Figure 4-10. It is obvious, based on this map, that roadway segments exhibiting serious capacity problems will still exist. To address these unfunded needs, MTP 2035 generated a great deal of maps, including one entitled the "Vision Plan," which included the additional, necessary transportation improvements for the parish, but improvements which are unfunded.

*"Whereas the '**Houma-Thibodaux MTP2035'** identifies all the existing and future needed transportation improvements, and the Staged Improvement Program identifies all funded transportation improvements, the Vision Plan identifies and focuses on the remaining unfunded transportation projects. The funded transportation improvements represent the best combination of transportation improvements within available funding to address existing transportation deficiencies. The remaining unfunded transportation improvements are no less important or effective, they just cannot [be] accommodated within the financially constrained budget."*
-MTP 2035, page 11-21

The decision to include these unfunded roadway improvements in the Vision Plan is deliberate. In this way, they will serve as a "constant

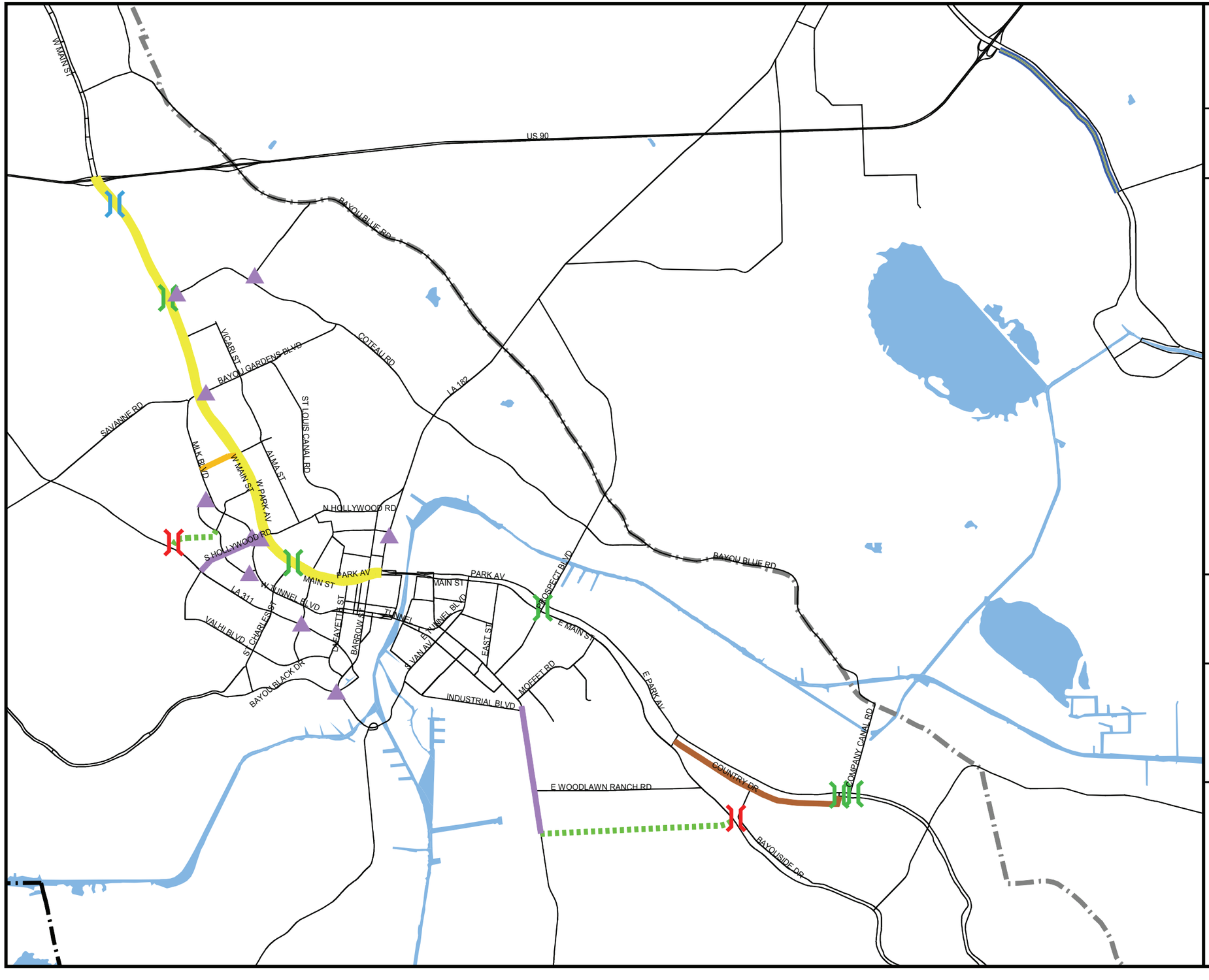

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Figure 4-7

Stage 1 (2010-2015)
Houma Area

LEGEND

- Study Area
- Parish Lines

Improvement

- Widen Add 2 Lanes
- New 2 Lane
- New 4 Lane
- Center Turn Lane
- Reconstruction
- ITS Corridor
- New Bridge
- Replace Bridge
- Pedestrian Bridge
- Turn Lane

Source: LADOTD
HTMPO

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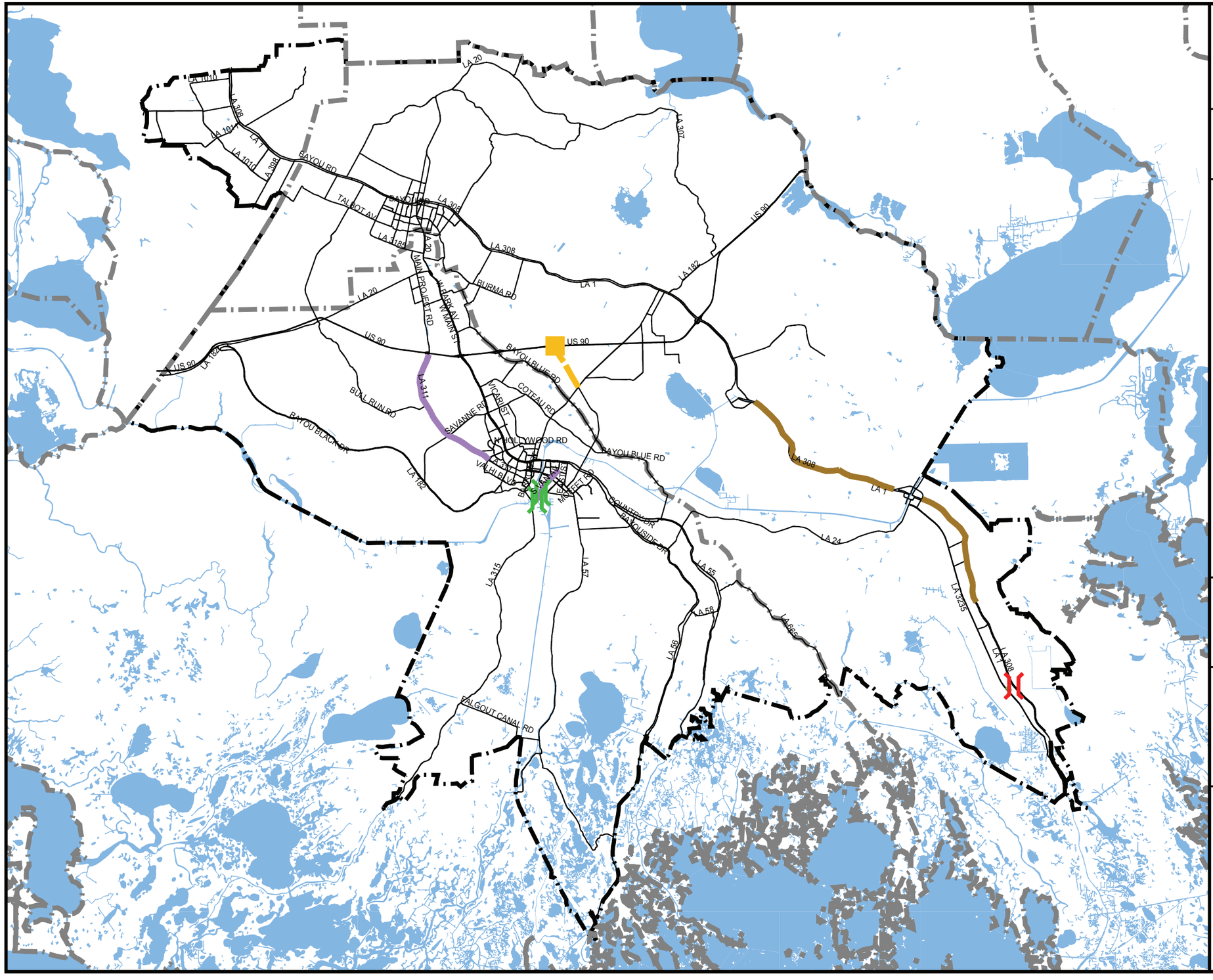
Figure 4-8

Stage 2 (2016-2025)



LEGEND

- Study Area
- Parish Lines

Improvement

- Widen Add 2 Lanes
- New 2 Lane
- New 4 Lane
- Reconstruction
- New Bridge
- Replace Bridge
- New Interchange

Source: NSI

N W E S

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Figure 4-9

Stage 3 (2026-2035)

LEGEND

- Study Area
- Parish Lines

Improvement

- Widen Add 2 Lanes
- Reconstruction
- Upgrade to I-49
- Replace Bridge

Source: NSI

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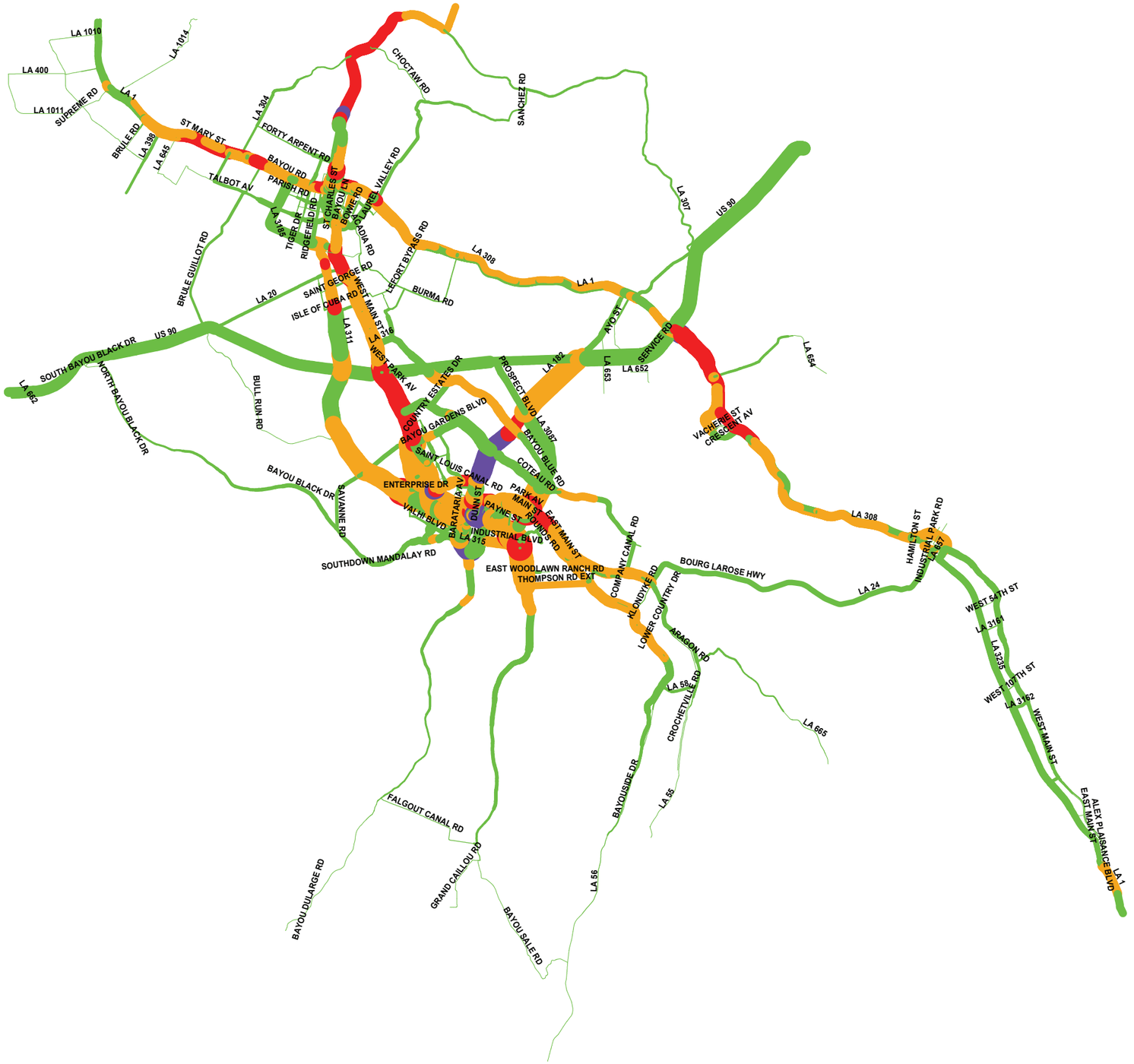
Figure 4-10

2035 Stage 3 VOC Map



LEGEND

Volume/Capacity

- 0.00 to 0.50
- 0.50 to 0.75
- 0.75 to 1.00
- 1.00 to 10.00
- Other

Vehicle Flows

30000 15000 7500

0 3 6 9

Miles

Stage 3 Network

Source: NSI

N W E S

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reminder" of continuing needs and help transportation planners re-evaluate the plan periodically to determine whether changes are needed. The 2035 Vision Plan for Terrebonne Parish is shown in Figure 4-11. The projected V/C ratios on the Terrebonne roadway network after construction of these improvements is shown in Figure 4-12.

One thing is clear, however: there is a direct link between land use and transportation. Virtually all land use types generate traffic, some more than others. But transportation improvements necessary to accommodate this traffic usually makes the land more accessible and, therefore, increases the likelihood of induced land development. In turn, transportation providers are increasingly being asked to assess the likely land development impacts of their transportation improvements and, in some cases, to mitigate these impacts.

Dispersed land development may contribute to growing environmental problems. Such development is characterized by lower densities, reduced transportation options, marked separation of residences, jobs, and shopping opportunities. Moreover, such development, according to the EPA, can exacerbate air and water pollution and increase habitat loss, as well as increase demands on the transportation system, reducing its efficiency. This is caused by the same number of people and same level of economic activity generating more and longer trips. However, if transportation and land use are planned in conjunction with each other, the challenges associated with managing these problems are reduced. This is why decision-makers in Terrebonne should use MTP 2035 as a resource to be consulted along with this Comprehensive Plan Update when choices regarding transportation and land use are presented.

PUBLIC TRANSPORTATION

According to the Houma-Thibodaux MTP 2035, there should be a resurgence of demand for regional transit "due to the aging Baby Boomer population and the desire for people to age in place" (p. 4-9). While it is true that the first wave of this generation turns 65 yrs. in 2011, their senior years may be characterized more by travel and mobility, rather than aging in place. Nevertheless, the lifestyle changes which are expected to accompany the aging of the 'Boomer generation—such as smaller households, leading to smaller dwellings on smaller lots—may lead to a surge in in-fill development in established urban areas. This development, in turn, could lead to the higher densities which are conducive to efficient transit operations.

These emerging conditions are reinforced by others, as well. According to the authors of an article (*"America Needs Complete Streets"* by Dan Burden and Todd Litman) appearing in the *ITE Journal* (April 2011, p. 36), rising fuel costs, in addition to an aging population, coupled with increasing traffic congestion, growing health and environmental concerns, and possibly changing consumer preferences "are all increasing demand for walking, cycling, *and public transit" [emphasis ours]*. If these trends continue—and there is every indication that they will—a community's ability to meet its future

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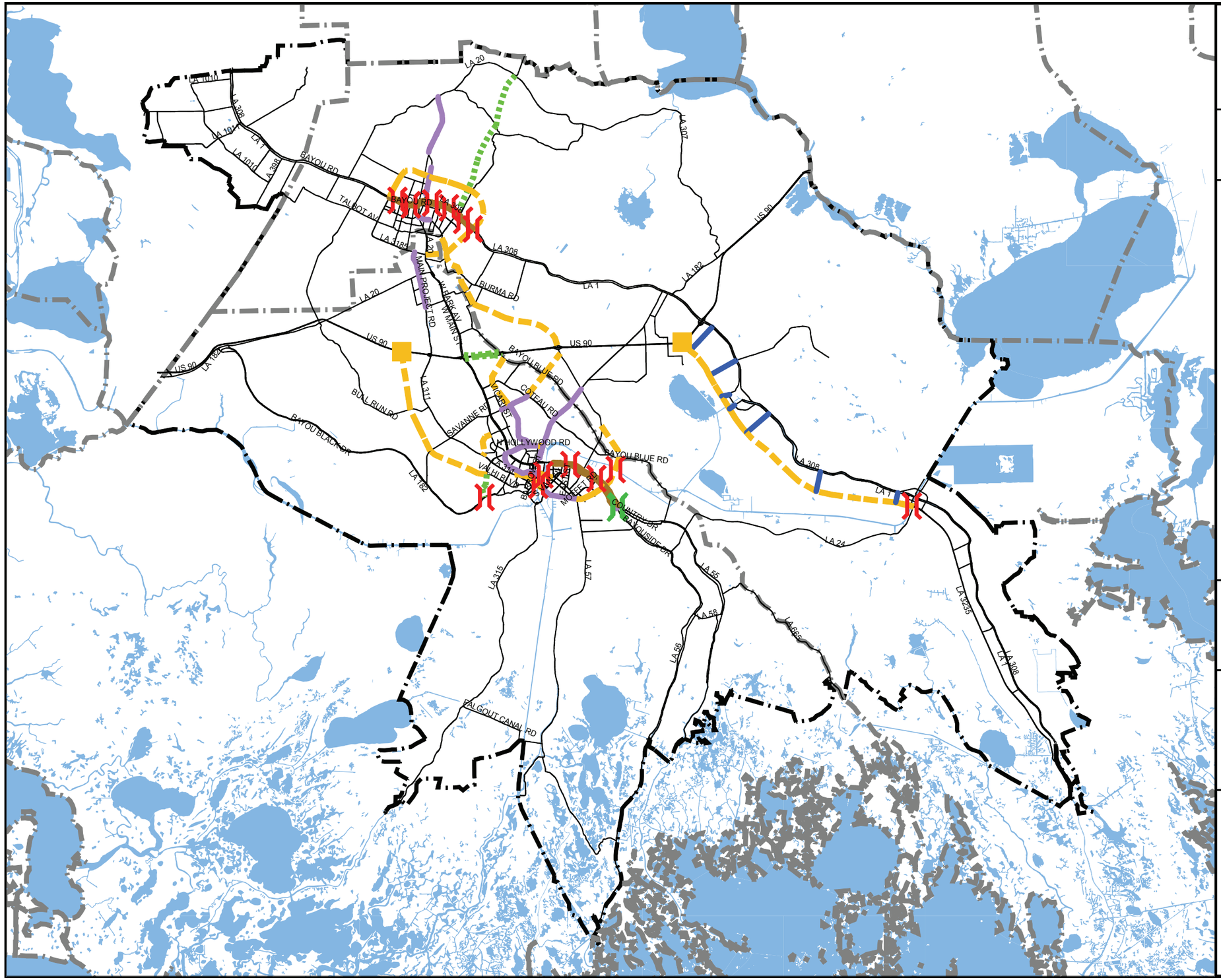
2035

Figure 4-11

Vision Plan



LEGEND

- Study Area
- Parish Lines

Improvement

- Widen Add 2 Lanes
- New 2 Lane
- New 4 Lane
- Reconstruction
- Local Connector
- New Bridge
- Replace Bridge
- New Interchange

Source: NSI

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Figure 4-12

2035 Vision Plan VOC Map

LEGEND

Volume/Capacity
- 0.00 to 0.50
- 0.50 to 0.75
- 0.75 to 1.00
- 1.00 to 10.00
- Other

Vehicle Flows

30000 15000 7500

0 3 6 9

Miles

Vision Plan

Source: NSI

N W E S

Prepared for:

Louisiana's On The Move... DOTD Builds The Way

Houma-Thibodaux MPO

Prepared by:

NEEL-SCHAFFER
Solutions you can build upon

In Association with:

ALLIANCE Transportation Group, Inc.

TBS T. BAKER SMITH, INC. PROFESSIONAL CONSULTANTS SINCE 1913

travel demands will depend significantly on its ability to offer the public an integrated selection of travel options.

> *"The major transportation problems facing most communities—traffic and parking congestion, excessive energy consumption and pollution emissions, the rate and severity of accidents, and inadequate mobility for non-drivers—can be addressed by creating multimodal transportation systems that allow the best mode for each trip: walking and cycling for local trips, public transit for travel on congested corridors and for non-drivers, and automobile travel to access dispersed destinations and for carrying loads."*
>
> -ITE Journal, April 2011; p. 36

a. "Complete Streets"

This type of integrated multimodal transportation system is the heart of the "Complete Streets" movement. This movement's central concept is that *choice* is key to improvements in transportation safety, service, comfort, and performance. Users of the transportation system must have the ability to choose which mode best works for them given the characteristics of a particular trip. The ability to choose a mode of transportation, given the needs of the trip, frees the traveler from exclusive dependency on the automobile, and streets must be able to accommodate all travel needs. All users—pedestrians, bicyclists, transit riders, and drivers—are served by an effective "complete streets" system which takes into consideration the needs of those with disabilities, the elderly, and even children.

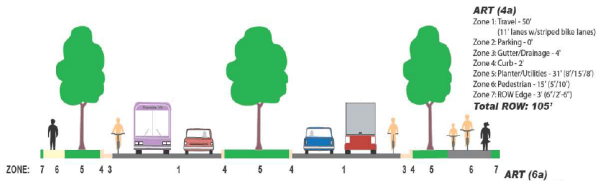
According to the National Complete Streets Coalition (www.completestreets.org), the benefits associated with implementation of a complete streets policy address a wide range of community issues and these benefits accrue to all communities, regardless of size or location. These benefits include:

- Economic growth and stability: a balanced transportation system which includes complete streets increases accessibility and connectivity between a variety of land uses and retail destinations. Increased access can result in increased sales, economic growth and stabilization of marginal areas.
- Safety improvements: through safety improvements designed to reduce pedestrian-vehicular conflicts, such as raised medians and the redesign of intersections and sidewalks have been shown to reduce risks to pedestrians by a significant amount.
- Public health improvements: increased use of bicycles and more walking, aspects of a well-designed complete streets policy, help to improve health through increased activity.
- Traffic congestion reduction and capacity increases: The existence of travel choices, engendered by a well-designed complete streets program, allows people to avoid congested travel corridors and, in doing so, increase transportation network capacity and reduce congestion. In this regard a complete streets policy is very effective in smaller communities.
- Child safety: Streets designed to safely accommodate bicycling and walking encourage children to more frequently engage in physical activity and gain independence. Sidewalks also encourage children to walk to school and provide a more positive image of the neighborhood. A complete streets program helps the Safe Routes to School program which is gaining in popularity around the country.

- Air quality improvements: According to the National Complete Street Coalition, in communities with 100,000 residents, if just one automobile trip were replaced by one bike trip by each resident just once a month, carbon dioxide (CO2) emissions would be reduced by more than 3,750 tons in the community annually. A complete streets program allows this to more easily take place. In communities faced with the prospect of ozone non-attainment status, the substitution of a bike trip for one automobile trip will also help to reduce nitrogen oxide (Nox) emissions which along with volatile organic compounds are ozone pre-cursors. In both instances, a complete streets program helps to achieve cleaner air in the community.
- Cost savings: It is always cheaper to include improvements for non-motorized travelers early in the planning and design for transportation projects and roadway projects in particular. The cost of retrofitting these projects to include facilities to accommodate the travel needs of pedestrians, bicyclists, and persons with disabilities are quite high.

BENEFITS OF A COMPLETE STREETS PROGRAM
Economic growth and stability
Traffic safety improvements
Public health improvements
Reduction in traffic congestion
Increased safety for children
Air quality improvements
Cost savings

Although Terrebonne Parish operates a public transit system, for the most part it is not capturing the *choice* riders, i.e., those who have access to an automobile, but who *choose* to use transit for some trips. There are several reasons for this inability of the transit system to attract this rider segment. First, headways should be no more than 15-minutes. This rider segment probably considers its time too valuable to wait for a transit bus longer than this. In Terrebonne Parish, the operation of transit routes with 15-minute headways during at least peak hours will require a fleet of buses close to three times the current fleet size. Such an expansion, not to mention the increased operating costs it will entail, cannot be justified in the current environment.



Second, travel costs in general have to be much higher than they are now. Travel costs generally include the price of fuel as well as all other fixed and variable costs associated with travel by automobile. At what point does the factor of travel costs reach a tipping point where a motorist is at least tempted to use public transit for a trip normally made by auto? The price of automotive fuel at the pump is certainly giving many motorists

pause, but, in Terrebonne Parish, the per-gallon price for gasoline is much less than in other parts of the country at this time.

Another factor which could cause motorists to switch to transit is the high cost of parking the automobile at the destination. In many areas of the country, particularly in some U.S. large cities, land for parking comes at a premium and the price paid reflects, at least in part, some of the lost opportunity costs associated with development of the property in a dense, urban environment. For this reason, hourly parking rates in these cities are quite high. In most of these cities, however, public transit usage is reflective of these high costs for rental of space for automotive parking. In Terrebonne Parish, even in Downtown Houma, this is certainly not the situation. Typically, metered on-street parking spaces go for $2.00 for an eight hour period. Even off-street spaces in leased parking lots are quite affordable.

GENERAL CONDITIONS NECESSARY FOR TRANSIT TO CAPTURE "CHOICE" RIDERS
High transit service reliability
Transit headways 15 minutes or less
High auto travel costs (gasoline; delays caused by congestion; etc.)
High auto parking costs at destination

In Terrebonne Parish, the automobile remains the dominant transportation mode for virtually all trips. For this reason, among others, the Parish not achieved an integrated multimodal transportation system.

Nevertheless, the focus in transportation in Terrebonne Parish must begin to shift from *mobility* (i.e., fast, cheap travel) to *accessibility* (i.e., the ability on the part of *all users* to reach desired activities, goods, services, and employment safely). The historic focus on transportation mobility has led to (in many places) outwardly expanding cities and towns, more and more costly highway capacity to counter congestion, the need for destination parking facilities (consuming land which could be devoted to more productive uses), and the intensification of highway-oriented land uses which greatly reduces accessibility for all other modes of transportation. In short, the focus solely on mobility has brought us to the point of unsustainability in our transportation systems in many communities. Complete streets policies, which include transit, are designed to balance access for all modes of travel in the urban setting. Such policies lead to a more sustainable transportation system for a particular community. In their article on the topic which appeared in *ITE Journal* in May 2008, the two authors, John LaPlante and Barbara McCann, offered a policy focus which contains a definition of complete streets:

A complete street is a road that is designed to be safe for drivers; bicyclists; transit vehicles and users; and pedestrians of all ages and abilities. The Complete Streets concept focuses not just on individual roads but on changing the decision-making and design process so that all users are routinely considered during the planning, designing,

building and operating of all roadways. It is about policy and institutional change.

-*ITE Journal*, Vol. 78, No. 5, p.24

Adoption of a complete streets policy locally for Terrebonne Parish can help direct transportation funds to streets supportive of a broader range of social, environmental, and community-building goals while improving accessibility for all, and helping to build sustainability into the transportation system. Transit can, and should, play a big part in building a more sustainable transportation system locally.

b. Good Earth Transit System

The transit system operated in Terrebonne Parish, the Good Earth transit system, began in the mid-1990's. It is owned and operated by Terrebonne Parish Consolidated Government.

Over the years the system has acquired new vehicles on a fairly regular basis and now operates a fleet of buses from a state-of-the-art transit operations center. Four additional buses are on order and delivery is expected in late 2011. These four will not replace others, but will be used for system expansion, primarily for a circulator route within the City of Thibodaux. At this time, most Good Earth's transit buses are no older than 2008 models.

The system operates six buses on four routes during weekday peak periods. Route maps can be found at the following address:

http://www.tpcg.org/view.php?f=public&p=routes_scheds_New.

The routes do not counter-circulate, but "pulse" from the transit terminal located in Downtown Houma. On this configuration, headways are between 30 and 45 minutes, depending on traffic. Obviously, a counter-circulating route system would require at least double the number of buses in service, but would effectively reduce headways by half and make some travel times for transit riders (depending on destination) much shorter.

Good Earth management is considering a technology application which would provide the perception of reduced headways, making the transit service in Terrebonne more attractive to "choice" riders. This application would permit a transit user to see the location of a bus along its route in real time through a smart phone application. This information would allow the rider to arrive at the bus stop just moments before the bus gets there, thus freeing up the rider's waiting time for more productive uses.

Good Earth transit also operates a demand-responsive, curb-to-curb service for disabled and handicapped persons in the Parish who have no other alternative for their transportation needs.

At the moment, Good Earth transit relies heavily on federal funding sources for both operating and capital assistance.

Terrebonne Parish now contributes approximately $500,000 annually to keep the transit system rolling. Local government's share of financial assistance to the Good Earth system has increased over the years and the parish's financial support is expected to increase again at some point in the foreseeable future, particularly if competition for available (and shrinking) federal funding increases. It is unfortunate that the system returns less than ten percent (10%) of its operating costs from fare box revenues. Good Earth expects fare box revenues to account for only 5% of its needed funding in FY 2012. In an austere budgetary environment at all levels of government, such ridership levels (as evidenced by fare box revenues) could give decision-makers pause to consider the level of benefits the system provides relative to its costs (as measured by the local public subsidy consumed).

In addition to the benefits to transit from adoption and implementation of a "Complete Streets" policy, Good Earth transit should consider positioning itself to take advantage of another trend that is emerging among the so-called "Millennials", or "Generation Y" age group. This generation is the most tech-savvy in history and their lifestyle may not have been possible even a decade ago. Today, however, in many areas, particularly in the country's largest cities, the travel habits of "Gen Y" are changing the face of American transportation (see *Planning,* May/June 2011, pp. 30-33). "Gen Y is much less car centric than other generations," according to John Martin, CEO of Southeastern Institute of Research (as quoted in *"Five Ways Market Research Paints Brighter Future for Public Transit."* Carolyn Sczcepanski. DC.STREETBlog.org. Oct. 19, 2011). This generation is much more likely to use public transportation for many of their daily transportation needs, particularly for the journey to/from work. Time spent aboard public transportation with their iPads, netbooks, and smartphones are used productively for a variety of personal tasks such as electronic bill paying, emailing, and connecting to the various social media (Facebook, Twitter, etc.) to check for messages, and connect to the digital versions of the local newspaper. The take-away for transportation planners and policy-makers

appears to be that younger travelers are placing a premium on tech-friendly environments and may thus create a new competitive advantage for the public transit mode which is considered slower than driving. This is confirmed by an article by James A Bacon citing a recent study published by Depaul University's Chaddick Institute for Metropolitan Development. Bus operators, particularly intercity operators, are benefitting "…from the rising interest among travelers in being able to continuously use portable electronic technology, which is difficult or impossible when flying or driving." With more states, including Louisiana, passing legislation prohibiting texting while driving and, in some jurisdictions, even making is illegal to use a cell phone while driving (unless completely hands-free), travel time can be made much more productive if one can stay connected and engaged while another does the driving.

Sczcepanski also points out in her article (see citation above) that there several measurable trends that are converging to favor a promising future for public transportation. Although some of these trends may be more pronounced in other regions of the country, they are, arguably, trends that will eventually impact Terrebonne Parish. These trends are:

1. A growing U.S. population, as much as 341 million by 2020 and as high as 400 million by 2040. Most of these will settle in cities. All these additional people and cars will create challenges in congestion, access, and mobility.
2. Demographic "sea change": There is a profound generational shift which is aligning with transit rather than the automobile. This shift may be more evident in larger cities at this time, but could eventually make its presence felt in smaller urban areas as well.
3. Continued climb in U.S. poverty rate: Automobile ownership and use is becoming a significant disproportional financial burden to low-income individuals, consuming as much as 40% of the family budget. Public transportation becomes a viable, more affordable option for many trips, including the important journey to work trip.
4. "Green" going mainstream: In some areas of the country, access to sustainable transportation options already plays a role in attracting and retaining residents. Perhaps that phenomenon will show up in survey results in this region of the country in the foreseeable future.
5. A new "consumer craze": Americans seem to want more out of what they buy; more "bang for their buck." Perhaps, shifting demographics, coupled with a growing environmental ethic will cause consumers to stress access to goods and services without actually purchasing them. One example cited is the "meteoric rise in car sharing" in a few locations in the country. Another is time-shared vacation homes, or even sharing or "swapping" homes for vacations. "Transit serves the same model, freeing consumers from stuff without cramping their lifestyles."

In Terrebonne Parish, full realization of this phenomenon may require a more compact urban environment, one made so through infill development at higher densities, as well as a restructuring of the Good Earth route system to directly serve more employment centers in the Parish.

It is interesting to note that the overall number of *intercity* bus departures in the U.S.

grew by six percent in 2010. In the largest cities, ridership on *inner* city transit lines grew by an estimated 23%. Even Amtrak's ticket sales have risen for sixteen straight months, with year-to-year growth averaging about six percent. By contrast, airline travel grew only 2.2 percent during 2010. Also, it is interesting to note that vehicles miles of travel have declined in 2010 about ten percent below the long term trend (USDOT 2010), after growing steadily during over the last thirty years. This leads to the conclusion that, at least nationwide, there is a resurgence in mass transportation usage. Also, since the two most "tech-unfriendly" travel modes, comparatively speaking, are the private automobile and the airplane at this time, equipping Good Earth vehicles with Wi-Fi could help to attract riders. In addition, mobile applications ("apps"), as discussed above, which provide the user with schedules and even when to expect the bus at a particular stop in real time, and the availability on each bus of newer third- and fourth-generation wireless technologies (3G and 4G), which promise connection and download speeds comparable to direct internet connections, would be even better and hand Good Earth transit a potentially very effective marketing advantage.

NON-MOTORIZED TRANSPORTATION

> "*Forty-seven thousand cyclists and pedestrians have died during the past decade, often because we lack the necessary infrastructure for them to be safe.*"
>
> -*Kartik Sribarra,* Director of Policy Outreach, Rails-to-Trails Conservancy

A metropolitan transportation plan is required to consider the needs and safety of the non-motorized element or sector of the regional transportation system. This is in accordance with the guidance found in the 2005 federal transportation legislation, "*Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users*", commonly referred to as "SAFETEA-LU." Among the numerous goals of this legislation are the reduction of traffic congestion, increased intermodal connectivity, and laying the ground work for future challenges.

Non-motorized transportation holds promise of helping to achieve all three of these goals in the urban setting. Such transportation modes generally refer to pedestrians and bicycle users. A non-motorized transportation plan is a way of identifying methods to improve pedestrian and bicycle user travel within the urban setting. Such plans contain vision and goal statements, an assessment of current conditions and needs, identification of the improvements that will be necessary to meet the vision and goals developed in the early stages of the plan, incorporation of pedestrian and bicycle improvements into the MPO transportation plan and the MPO's transportation improvement program (TIP), public involvement, periodic progress evaluations.

Although this region is lacking in official recognition of such needs and the development of a comprehensive bicycle and pedestrian plan, the MTP 2035 suggests an approach which will lead to such a plan. Actually, Terrebonne Parish has been successful in securing grant funds to develop its bike path network and has plans to expand it (see figure 4-13).

In the MTP 2035 (Chapter 7), this approach is presented in the form of non-motorized transportation goals for the MPO region. Among others, these include:

- Creation of a bicycle/pedestrian advisory panel or board
- Inclusion of bicycle and pedestrian facilities in all street projects. **[Note: this can be achieved through the adoption of a "Complete Streets" policy by the Planning Commission and Parish Council.]**
- Construction of ADA-compliant pedestrian facilities where warranted throughout the parish.
- Connecting the existing pedestrian infrastructure.
- Collection of traffic accident data to increase the safety of pedestrians and bicyclists
- Evaluation of all regulations that pertain to pedestrians and bicyclists, and including the existing pedestrian/bicycle infrastructure, and update these regulations as needed.

a. Pedestrian Characteristics, Design Considerations, and Recommendations

Pedestrian planning must take into consideration the basis "user groups" which are broadly characterized by age: children, teens, adults, and senior citizens. While the pedestrian needs of each are generally the same, their individual group characteristics are quite different and require that facilities are designed to safely accommodate each group. Included in this general pedestrian group can be persons with disabilities, including the blind, those in wheelchairs, and those with other disabilities which could restrict or impair their ability to safely travel within the pedestrian environment.

According to ITE, design considerations in the development of facilities which accommodate pedestrians must account for their needs in many areas, depending on context (see "*Design and Safety of Pedestrian Facilities: A Recommended Practice."* Institute of Transportation Engineers. Washington, D.C. 1998). These include:

- Pedestrians with disabilities
- Sidewalks and paths
- Signing and signalization
- Crosswalks and stop lines
- Lighting
- Pedestrian barriers and refuge islands
- Grade-separated crossings
- School practices
- Neighborhood traffic control
- Transit stops
- Work zone pedestrian safety; and,
- Pedestrian malls and street closures.

"A good pedestrian system is one that is continuous and connects people to desired destinations. When pedestrians can travel in a predictable manner…there is an increased atmosphere of safety."

-MTP 2035, p. 7-2

Terrebonne Parish has worked to make all areas of Downtown Houma accessible to pedestrians, including those with disabilities in accordance with ADA guidelines. In other areas, sidewalks have been constructed through grants from DOTD's Transportation

FIGURE 4-13

Westside Bike Trail Route

51 Miles of Shared Use Roads and Shoulder Biking

Legend

Shoulder Provided -
Bike Trails Signs & Road Markings
Every 1/2 Mile

Shared Roadway -
Signs Provided Every
1/2 Mile

2010 Trails Grant -
Southdown On-Road
and Off-Road Loop

Main Project Road

Highway 20

Highway 311

Bull Run Road

Bayou Black Drive

Trailhead

Equity Boulevard

Valhi Boulevard

Civic Center
Boulevard

N
W E
S

0 11,000 22,000 44,000 Feet

Enhancement program. However, a more comprehensive approach needs to be taken to facilitate the type of safe and efficient connectivity which pedestrians require. Specific policy recommendations, if adopted, would begin to more comprehensively address pedestrian needs in the parish. These include:

1) The completion of all ADA-required improvements in Downtown Houma. This will require a more comprehensive approach to connectivity, including crosswalks, signage, stop lines, additional wheelchair ramps, the widening of sidewalks where necessary, and seamless, or at least unimpeded pedestrian access from the Downtown Marina to the Good Earth Transit station. Although the Bayou Walk can be a significant part of this connectivity, it should not be the only method of pedestrian connectivity downtown.
2) Coordinate and incorporate pedestrian connectivity needs downtown with the design suggestions to enhance downtown gateways, and other improvements shown in another section of this plan.
3) Completion of a detailed assessment of ADA-related needs in some of the more heavily traveled commercial corridors in the parish, and the implementation of needed improvements to enhance or promote pedestrian connectivity and safety.
4) Coordination of connectivity and ADA requirements relative to transit stop and transit shelter locations along all Good Earth Transit routes.
5) Amendment to existing subdivision regulations to require sidewalks, wheelchair ramps, and better pedestrian connectivity and safety in every new subdivision, whether residential or commercial.

"While traffic engineers have a responsibility to provide for the relative safety and efficient flow of all types of road users, streets and highways are too often designed with the sole interests of motorists in mind, and pedestrian are left to fend for themselves on streets with inadequate crossing times, confusing traffic control devices, excessive delays, and construction zones with little or no provisions for those who walk."

-Design and Safety of Pedestrian Facilities. ITE. 1998. P. 117

b. Bike Travelers, Their Characteristics, Design Considerations, and Recommendations

The American Association of State Highway and Transportation Officials (AASHTO) lists three categories of bicyclists based on skill level: advanced, basic, and children (see AASHTO. *Guide for the Development of Bicycle Facilities.* Washington, D.C.: AASHTO, 1999. Page 5). These categories and their functional definitions are intuitive. If bicycle usage among these three user groups, as well as for appropriate trips, is to be encouraged, then safe, convenient, and well-designed bicycle infrastructure and facilities are necessary.

"Bicyclists have the same mobility needs as every other user of the transportation system and use the highway system as their primary means of access to jobs, services, and recreational activities."

-Guide for the Development of Bicycle Facilities," p. 5

According to *MTP 2035,* prepared for the Houma-Thibodaux Metropolitan Planning Organization (MPO) by Neel Schaffer, Inc. and adopted in May 2010, a good bicycle transportation plan should address at least six specific elements.

ELEMENTS OF STRONG BIKE TRANSPORTATION PLAN
Trails
Bike Lanes
Shared lanes
Bicycle-friendly intersections
Signage, and
Parking

Bike lanes, shared lanes, and intersections are areas where bicyclists and automobiles and other motor vehicles often interact in close proximity to each other. Because of the inherent vulnerability of the bicyclist in these areas, design standards for these facilities and signage are of the utmost importance. As reported in *MTP 2035* (Table 7-3, p. 7-8), AASHTO has provided minimum standards for several of these elements. Separate, delineated bike lanes are to have a minimum of four-feet clear width to lip of the gutter pan. In shared lanes, where there is no stripe separating bicycles from motor vehicles, the outside lane is to be designed to a 14-feet minimum width. Regarding signs, when and where bicyclists are present, information conveyed to both motorists and bicyclists must be clear, easily understood, and timely. In addition, signage must be placed so as to not block a clear path for bicyclists.

Intersections, where motorized and non-motorized modes of travel come into direct conflict with each other, are particular challenging from a design standard. They must be designed so that they encourage use by all modes. This requires that intersections and their components possess the following qualities (*MTP 2035,* p. 7-10):

- Clarity – so that each mode can easily and clearly see the other
- Predictability – crosswalks need to be reliably located and designed
- Visibility – crosswalks must be easily visible to the motorists, and while in use the motorists and crosswalk users must be easily visible to each other
- Short wait – in general, according to studies, pedestrians will attempt to cross after a 30-second wait
- Adequate crossing time for all users, motorists and non-motorized users alike
- Limited exposure – minimized potential points of conflict between motorists and non-motorized users
- Clear crossing – no barriers or obstructions in the crosswalk.

Mindful of the growing number of bicyclists in the parish, Terrebonne Parish Consolidated Government has begun to address the need for designated bike paths in the parish. Recently, Parish Government published a map (Westside Bike Trail Route) with the existing and planned bike paths or routes in Terrebonne Parish (see Figure 4-13). The existing and proposed bike route provides fifty-one miles of shared use and road shoulder biking roughly in a loop along Bayou Black Drive (LA 182), Hwy 20, Main Project Road/Hwy 311, and the Houma-Terrebonne Civic Center. Most of this loop will utilize shoulders. Bike trail signs and road markings will also be provided.

The major shared roadway portion of the Westside Bike Trail Route is the trail which follows Bull Run Road from Hwy 311 to Hwy 20. Along this portion of the overall system, bike trail signs will be installed approximately every half-mile.

A third component of the Westside route is the proposed Southdown On-Road/Off Road Loop. This loop will utilize LA 311, Civic Center Blvd., Valhi Blvd., and Equity Blvd. for its on-road section. The off-road portion will be constructed in that undeveloped area southwest of Valhi Blvd. around the Southdown drainage pump station and lagoon system. This portion of the bike route system waits approval of a Trails Grant before it can be constructed. The map on the following page provides details of the Westside Bike Trail Route. In Chapter 6 of this Comprehensive Plan Update, additional bike trails are proposed for the southern part of the Parish.

Bike paths or routes can provide a great deal of connectivity in the community, giving cyclists access to jobs and services, in addition to recreational opportunities. But, to achieve connectivity, bike paths must allow reasonably convenient (and safe) travel from residential areas to major shopping and employment centers around the parish. With the ability of the Good Earth Transit buses to carry up to two bicycles each, cyclists have a convenient method to reach a starting point for a bike path or route.

Policy Recommendations:

A sustainable transportation system begins with a thorough understanding of the challenges which must be overcome, as well as the broader purposes of the various components which comprise the community's transportation system. In a broad sense, transportation is "connectivity." The transportation system facilitates our desire to travel from Point A to Point B. Both air travel and rail travel accommodate this desire. Surface (highway) transportation, on the other hand, is more nuanced. For example, highways connect places (Point A to Point B), and serve an important logistical function in our regional and national economies. While roads connect places, and have a certain logistical function, they also allow intermediate stops to accommodate a variety of needs. Streets, on the other hand, create real "places" and generate value for the community by creating connectivity within the community and by accommodating all users, ideally, not just motor vehicles. Roads and highways cannot effectively satisfy the needs of all users since they have a purely transportation function (Point A to Point B).

Streets, however, have a much broader function; they are not purely or solely transportation related in that they should provide a safe haven for pedestrian, cyclists, and public transportation, as well as parked vehicles, and, through design techniques and features, integrate surrounding land uses into

a space or corridor which actually becomes an inviting "place" within the urban community. Roads and highways cannot do this.

"If streets fail to do this, then they also fail to create real value in the community and a measurable return on the public investment needed to help create the sense of place."

-Charles L. Marohn, Jr., PE, AICP, Executive Director, *Strong Towns*

The basic tenant, perhaps, is that streets are for people and roads are for cars. That distinction must be maintained in the urban environment if we desire to strengthen our community so that it can become a sustainable, better place for its residents.

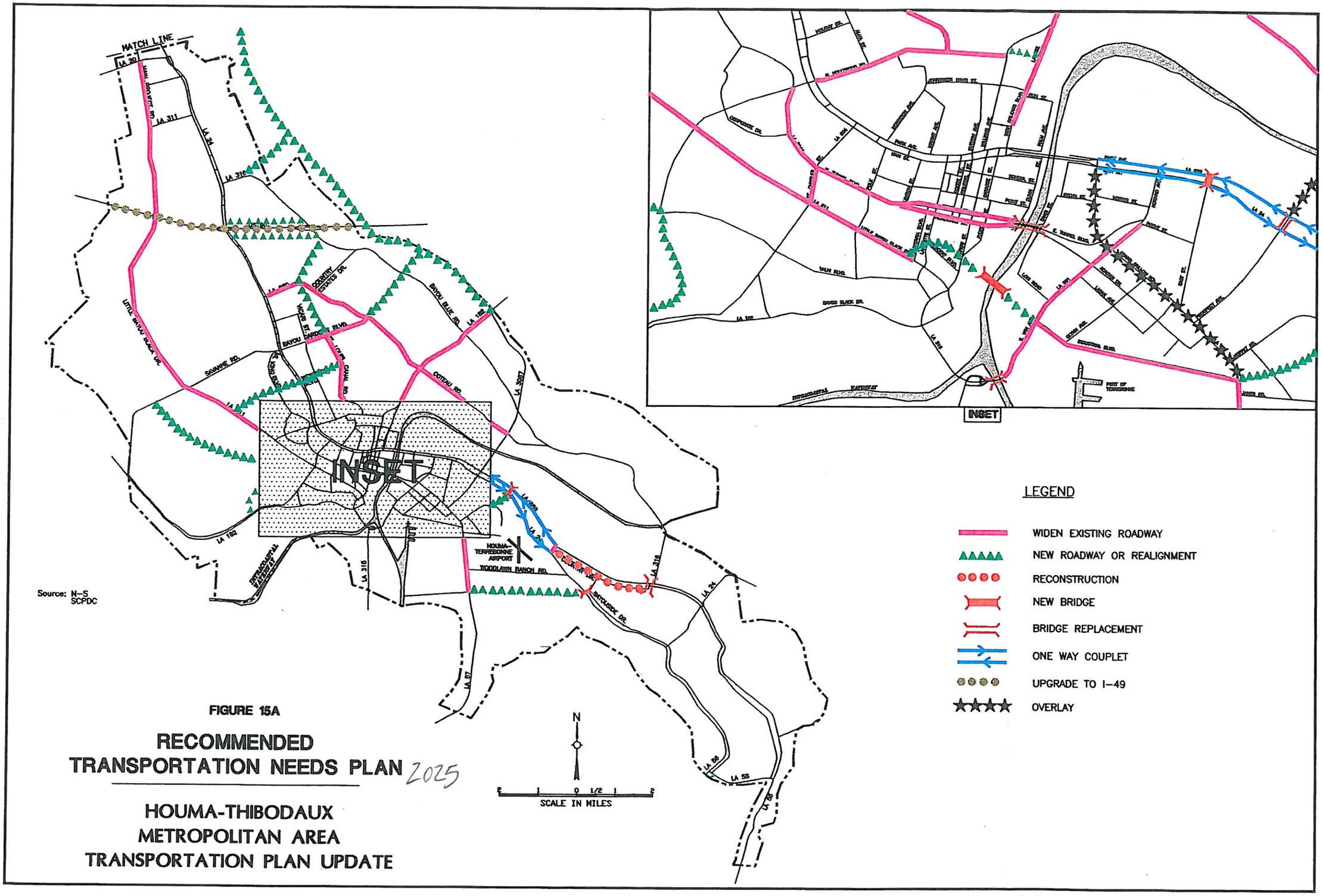
A few policies, adopted and implemented, will assist those charged with introducing sustainability into the transportation system overcome these challenges. These include:

- The overall "Complete Streets" policy development process should include a wide variety of stakeholders. All needs must be addressed.
- Policies which are put in place across all governmental levels tend to work best.
- Successful implementation goes beyond the initial policy document itself to include changes to zoning codes, plans, subdivision design standards, manuals, and procedures, as applicable.
- Early consideration of the needs of all road users helps avoid potential problems in the implementation phase, saves money, and encourages a "paradigm shift" in the approach to street design.
- Using every opportunity to improve multimodal accommodation speeds creation of a complete network and saves money.
- The first projects are often the most difficult to implement.

The potential rewards of "Complete Streets" to the community range from safety improvements to the creation of projects of more lasting value. But the process takes persistence, patience, and creativity. The engagement of all stakeholders—elected officials, planning practitioners, land developers, and citizens—provides an avenue for all members of the community to be part of creating livable streets that safely accommodate and welcome all users. Terrebonne Parish should give this top priority.

In addition, Terrebonne Parish must work in conjunction with the MPO to implement the staged highway improvements included in the MTP 2035 as they relate to Houma and Terrebonne Parish. Implementation of these improvements are, of course, contingent upon available funding, but the Financially Constrained plan is feasible and will help to alleviate some, though not all, of our highway deficiencies.

Local streets are important in the parish's overall transportation plan, too. The parish's Major Transportation or Street Plan (see Figure 4-14) shows all the proposed work to be performed on the existing network, as well as new roadways or realignments that are also recommended. Although this segment has not been included on the official map, the Planning Commission should consider extending Valhi Blvd.—currently under construction to Savanne Road—from Savanne Road to U.S. 90 and adding this segment to the Major Thoroughfare Plan. Consideration has already been given to extending a utility



Source: N-S SCPDC

FIGURE 15A

RECOMMENDED TRANSPORTATION NEEDS PLAN 2025

HOUMA-THIBODAUX METROPOLITAN AREA TRANSPORTATION PLAN UPDATE

corridor in an alignment to U.S. 90. Valhi Blvd. should also be shown as extended in this same general alignment. Future development in this general area of the parish is anticipated. A roadway and utility alignment could help to direct this future development and provide better access and connectivity.

Parish government should also find ways to improve transit service in the parish. There is considerable promise here, and transit will be an important part of the strategy designed to help the parish meet its air quality standards over the next several years. Also, an improved and upgraded transit system could also play a significant role in making affordable housing available to more people in the parish. Transportation and access to employment opportunities are important components in the affordable housing equation.

The adoption of a "Complete Streets" policy locally coupled with revisions to the parish subdivision regulations will promote connectivity within the parish and foster pedestrian travel and bicycling.

In addition, parish government, in conjunction with the Chamber of Commerce and South Central Industrial Association, should work to find ways to complete I-49. Although this highway is built to interstate standards for its length in Terrebonne Parish, it needs to be completed to these same standards from Morgan City to the Wax Lake Outlet Bridge in St. Mary Parish. This highway is important for hurricane evacuation purposes and, at this time, is the lowest cost segment of those between Lafayette and west bank Jefferson Parish yet uncompleted. Realistically, the segment between Morgan City and Wax Lake Outlet Bridge may be the only segment completed within the next 15 to 20 years because of funding constraints at the state and federal levels. While it would be ideal for this region to have a continuous interstate highway between Bayou Lafourche and Shreveport and beyond (in the near future), the segment through Lafayette is more problematic for this region—and largely out of our control—than the uncompleted segment in St. Mary Parish.

On another important front, the so-called North-South Hurricane Evacuation Corridor has languished for various reasons for a number of years, although recently, there has been some movement to bring this needed evacuation route to a decision. The completion of this route would provide the residents of Terrebonne Parish (and north Lafourche Parish) with a hurricane evacuation alternative that would permit much faster access to I-10 and I-55 so that evacuations to the north (where evacuees from here must head most of the time) could be effected. The current evacuation route, U.S. 90 east- or westbound, is jammed with very slow moving traffic in times of emergency, according to anecdotal information. This traffic situation can only be avoided by evacuating the area

well in advance of the time when landfall can be predicted with increasing accuracy. An alternate route could very well be a life-saver for Terrebonne Parish residents.

In conjunction with hurricane evacuation needs, the parish should be mindful of roads that are critical for evacuation that also flood in places. When this happens, traffic flow is greatly impeded, or stopped completely when the road of blocked due to high water. Although this is a complicated situation due to the fact that nearly all the roads needed for evacuation and which flood are also state roads, Terrebonne Parish should explore with LaDOTD the feasibility of a Memorandum of Understanding which would allow the parish to fill in the low spots on these roads with shell or aggregate when evacuation is recommended under a state of emergency. If the road is not flooded and passable, then evacuation is not impeded or blocked.

Also, Terrebonne Parish should consider revising its subdivision regulations to require at least one centrally located street in a proposed development to exceed height requirements to preclude the likelihood of flooding. If this was the case, then evacuations from the development could be facilitated.

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