

## **Lafayette, Louisiana**

Evangeline Thruway US 90/US 167 Corridor

S.P. No. 700-24-0073  
F.A.P. No. DE-0009(802)

### **BRIEFING PACKAGE PROPOSED DESIGN MODIFICATIONS TO FEIS SELECTED ALTERNATIVE**

April 16, 2008

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## **INTRODUCTION**

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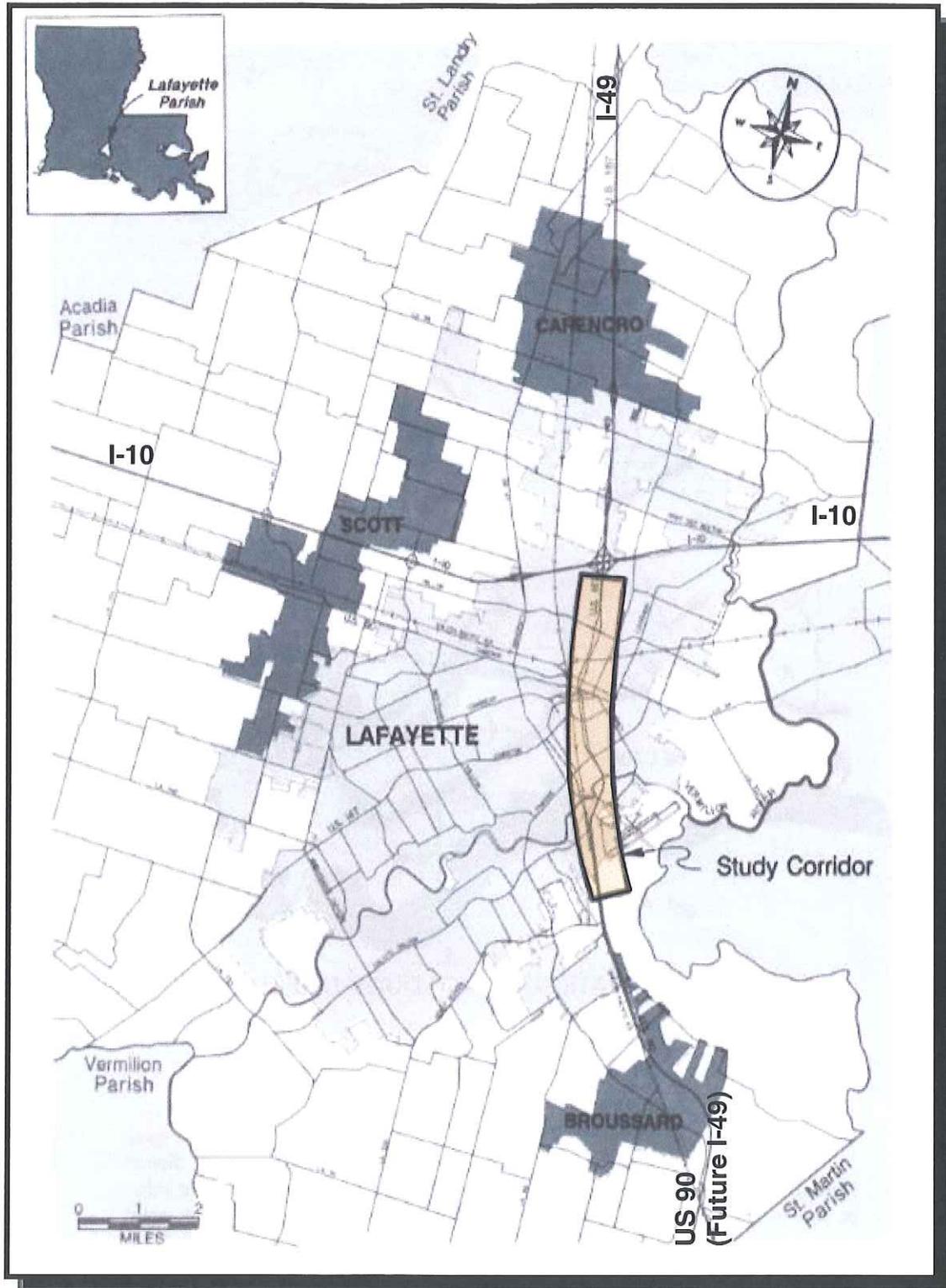
The purpose of this briefing package is to present pertinent information for the I-49 Connector project regarding potential design modifications to the Selected Alternative as presented in the Final EIS (2002) and Record of Decision (ROD) (2003) for the proposed project. Through the development process of the FEIS Selected Alternative since 2003 which has involved preliminary engineering and context sensitive solutions design, state and local officials have identified potential design modifications to the Selected Alternative based on factors such as community input on Context Sensitive Solutions (CSS), traffic and operations, and/or constructability. The contents of this briefing are intended to summarize the pertinent project history, the Selected Alternative described in the FEIS and ROD, and the potential design modifications under consideration by LaDOTD and FHWA along with the additional impacts potentially caused by these modifications. Based on the comments received from the reviewers of this package, the project team will determine required action(s) for advancing the project.

### **General Description of Project**

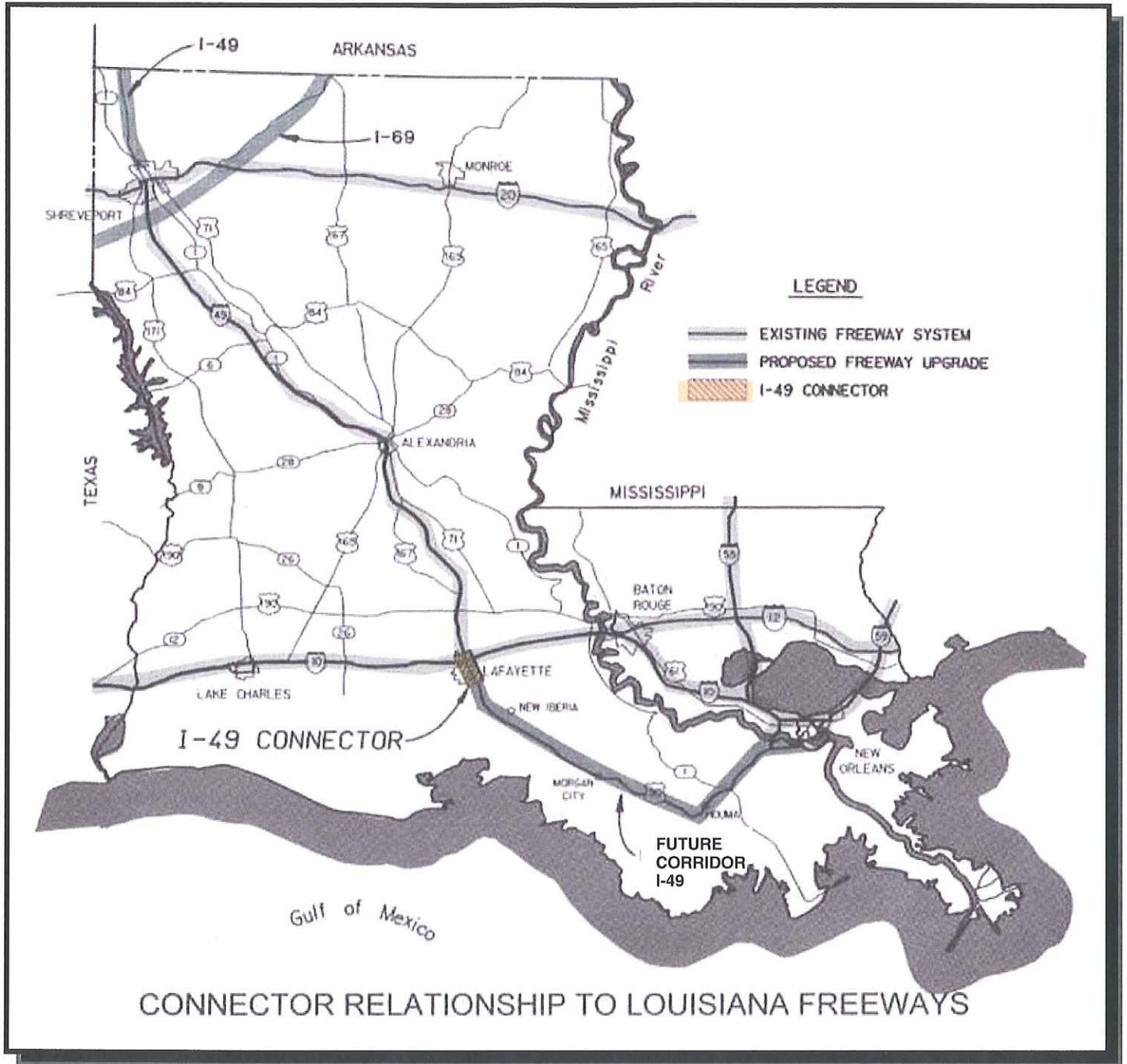
The proposed project is in Lafayette Parish, Louisiana, within the city limits of Lafayette (1990 pop. 94,440). The proposed action includes construction in the Evangeline Thruway U.S. 90/U.S. 167 corridor of a freeway with accompanying interchanges and flanking collector/distributor roadways for local traffic circulation and land access. LaDOTD has previously studied the freeway concept, which would be compatible with its long-range highway goals for U.S. 90 south of I-10 to New Orleans.

The existing Evangeline Thruway (U.S. 90 and U.S. 167) is a north-south arterial passing through the older part of Lafayette. It serves local residential and business traffic and also functions as an integral part of the federal-aid National Highway System (NHS) servicing south Louisiana. Construction and freeway implementation would begin just south of the Lafayette Regional Airport (commercial service) and continue north to the current southern terminus of I-49 at the I-10/I-49 interchange, a length of approximately five miles. This section constitutes the logical termini for the project as it is considered to have independent utility. Exhibit 1 presents the Evangeline Thruway study corridor.

U.S. 90 from Lafayette to New Orleans has been targeted in the LaDOTD's long-range planning to become a part of the state's freeway system, effectively serving as a southeasterly extension of I-49 (which currently terminates at its junction with I-10). In 1987, the U.S. Congress authorized and funded a demonstration study "to provide limited continuous access between an interstate route and a highway on the Federal-Aid primary system in Lafayette, Louisiana." In October, 1990, the Louisiana Department of Transportation and Development (LaDOTD) began a comprehensive Environmental Impact Statement (EIS) study of potential transportation improvements in the U.S. 90/U.S. 167 Evangeline Thruway corridor in Lafayette. Federal highway legislation enacted in 1998 (TEA-21) has designated this route as "Future I-49". Construction to freeway standards has been completed in some sections and is under study on other sections of the highway. As shown on Exhibit 2, implementation of the I-49 Connector would be the connecting link through Lafayette that is compatible with the I-49 planned freeway upgrade to the south.



**EXHIBIT 1**  
Project Location



**EXHIBIT 2**  
I-49 Connector Relationship to Louisiana Freeways

## **PROJECT HISTORY**

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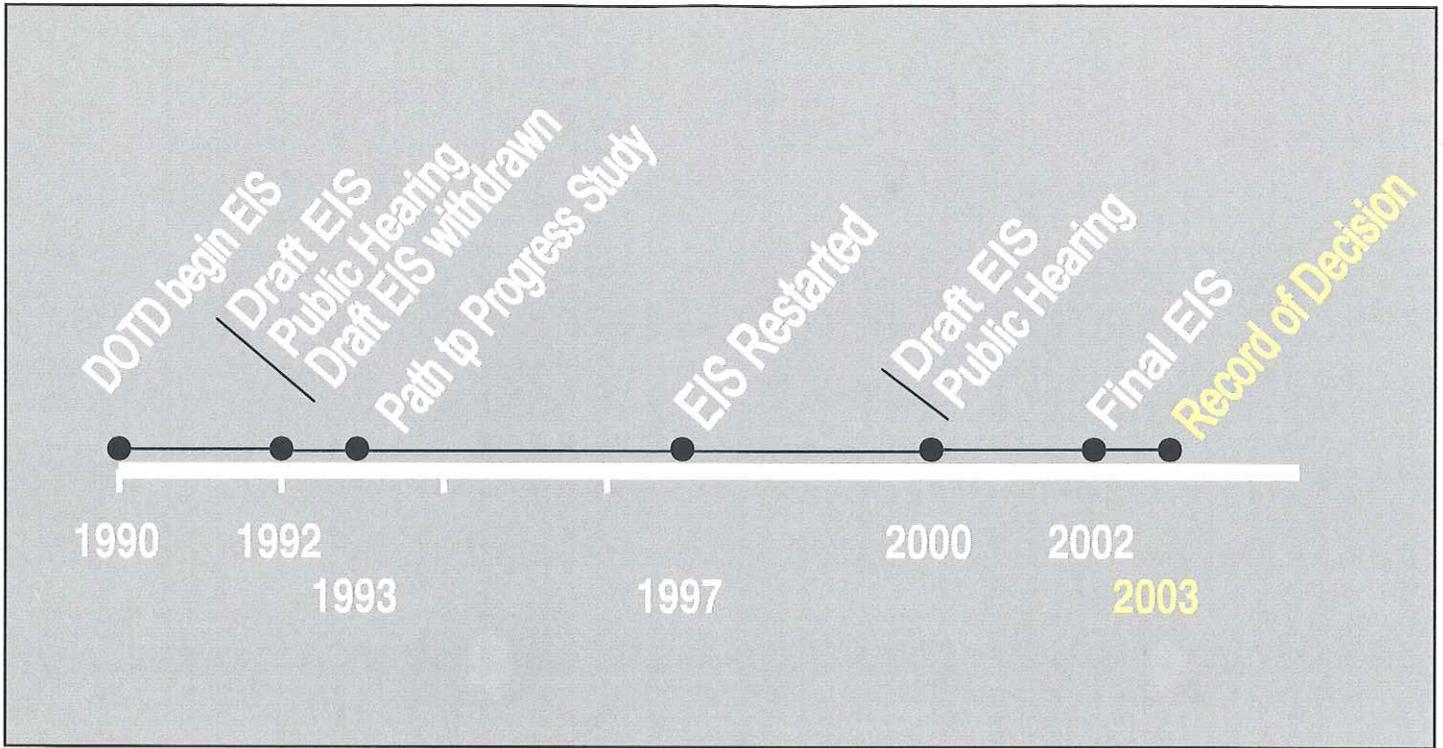
In 1987, the U.S. Congress authorized and funded a demonstration study “to provide limited continuous access between an interstate route and a highway on the Federal-Aid primary system in Lafayette, Louisiana.” In October, 1990, the LaDOTD began a comprehensive Environmental Impact Statement (EIS) study of potential transportation improvements in the U.S. 90/U.S. 167 Evangeline Thruway corridor in Lafayette. A Draft EIS was approved for public distribution and circulated in May 1992 and a Public Hearing was held on July 1, 1992. Following the Public Hearing, the Draft EIS was withdrawn on December 11, 1992, due to public comments and concerns.

In December 1997, LaDOTD restarted the project with a reconciled set of alternatives and the second Notice of Intent for the project was issued on April 14, 1998. The second Draft EIS was completed in November 2000 and a formal public hearing was held on December 14, 2000. Once comments were received (including those from federal, state, and local agencies as well as the public) and addressed a Final EIS dated September 2002, was approved for public distribution.

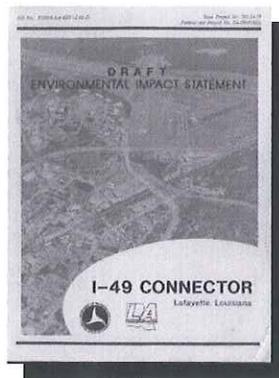
A Record of Decision was then issued by FHWA January 2003, based on analyses contained in the Draft EIS; the Final EIS; the comments of federal and state agencies, members of the public, and elected officials; and other information in the record in this matter. Following the approval of the ROD, the project has been able to begin provisions to preserve the I-49 Alignment through use of the LCG Corridor Preservation and Management Action Plan and as funding becomes available, design and construction will be implemented. Exhibit 3 shows the timeline for the project through the EIS phase and some of the key documents produced as a result of the studies.

Following the publication of the ROD, a lawsuit was filed in 2004 against FHWA by the Concerned Citizens Coalition, a group opposing the proposed project. The FEIS and ROD were successfully defended within the federal District court level and the 5<sup>th</sup> Circuit Court of Appeals.

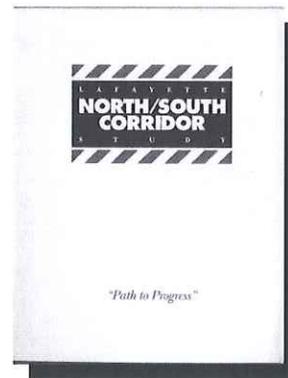
Concurrently, LaDOTD and FHWA in coordination with LCG advanced the project forward into the Functional Plan Phase which includes developing the geometric layout of the Selected Alternative at a larger scale with consideration to context sensitive solutions (CSS), setting preliminary right of way lines within the study area, and beginning corridor preservation. This phase of the project is ongoing and will continue to evolve as design details are addressed and state and federal officials await construction funds.



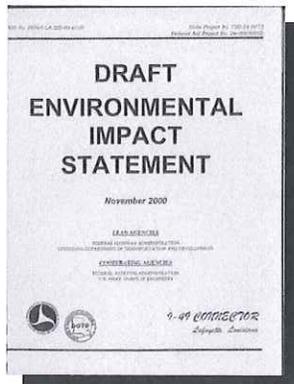
**EXHIBIT 3**  
I-49 Connector TimeLine of Planning/Environmental Studies



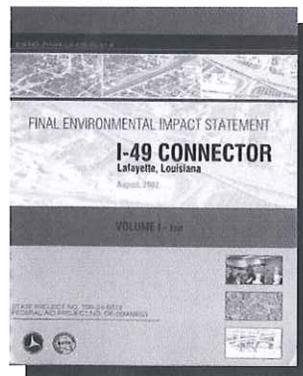
1992



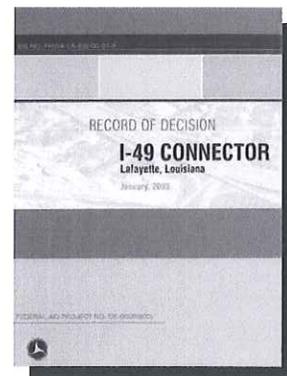
1993



2000



2002



2003

## **FEIS SELECTED ALTERNATIVE DESCRIPTION**

The Selected Alternative presented in the Final EIS (FEIS) and approved in the ROD is the Lafayette Consolidated Government's (LCG) locally preferred alternative, which has been identified as RR-4 Elevated in conjunction with the MPO Subalternative and Subalternative H. This alternative uses parts of the existing Evangeline Thruway alignment as well as a new alignment adjacent to the Union Pacific Railroad. Upon reviewing the Draft EIS, comments received following the Draft EIS Public Hearing, and local agency recommendations, the LCG adopted the RR-4 Elevated alignment as the locally preferred alternative for I-49 through Lafayette. The locally preferred alternative included a request by the LCG to keep two local collector streets open under the freeway. This request, identified as the MPO Subalternative, was determined to be feasible by the LaDOTD and has been included in the Selected Alternative. Subalternative H applies to the area north of Willow Street. The selected RR-4 alignment with MPO Subalternative and Subalternative F is shown on Exhibit 4.

The Selected Alternative shown in the FEIS and ROD includes 1) five miles of mainline freeway, approximately 3 ½ miles elevated; 2) one three level directional interchange at Kaliste Saloom Road, majority on structure; 3) two full diamond interchanges at University/Surrey Street and Willow Street; 4) two single point diamond interchanges at Johnston Street and 2nd/3rd Street with associated railroad grade separations and arterial cross street studies involved; and 5) various cross street connections at Pinhook Road, Jefferson Street, Mudd/Simcoe Street, Donlon Street, Castille/Martin Luther King Road, and several minor streets.

The Selected Alternative decision represents a balance of impacts, in which certain factors were weighed against others in reaching a decision. Three factors that stand out as the most favorable regarding the Selected Alternative are summarized below:

- The Selected Alternative would require the least number of residential displacements.
- The Selected Alternative moves traffic (both the proposed freeway and existing Evangeline Thruway) farther from the Sterling Grove Historic District than other alternatives (except RR-3, which is on the same alignment as the Selected Alternative in the area of the District). Thus, the Selected Alternative is more conducive for preserving and enhancing the District, including St. Genevieve Catholic Church and School.
- The Selected Alternative is on new alignment in the core area, and as such is geometrically able to offer more direct access opportunities to the central business district.

### **Profiles**

The mainline freeway profile for the proposed project will include elevated and at-grade sections depending on the land features and cross street access. The elevated and at-grade sections are shown on Exhibit 4. Note that the mainline freeway will be elevated in the central core area, with the possible exception of a

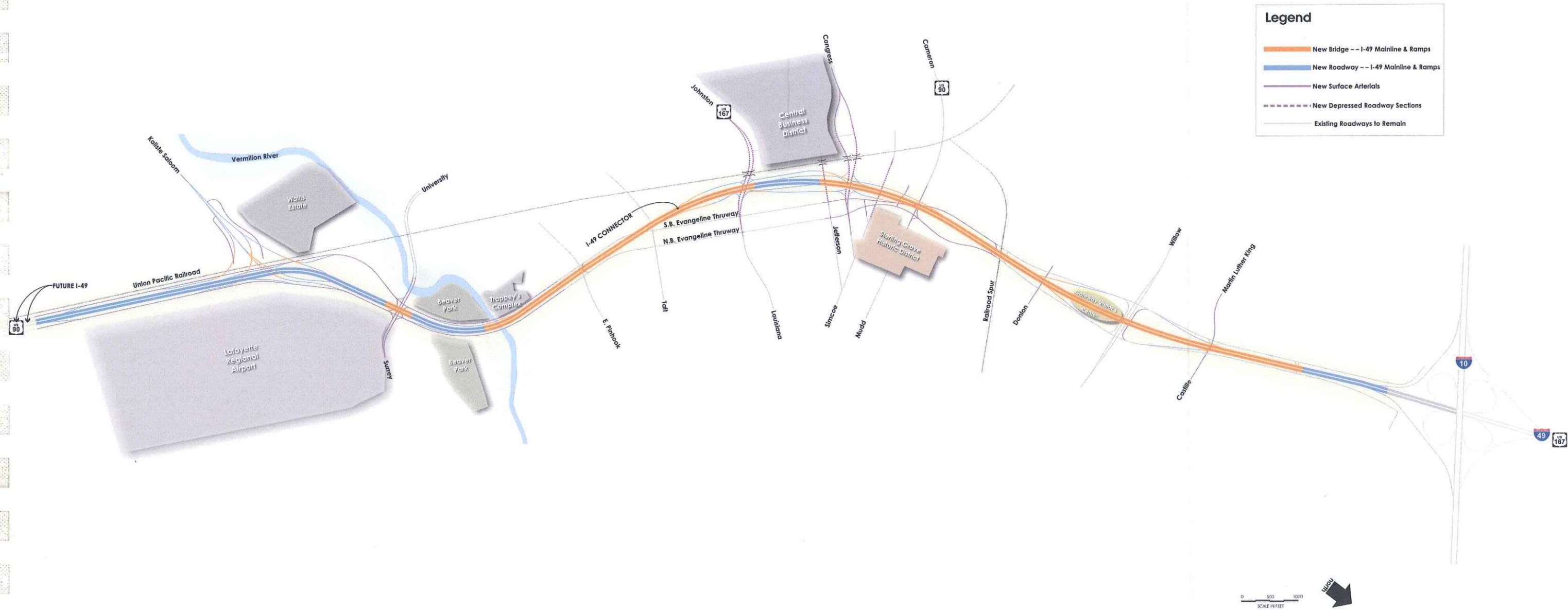
short section between Johnston and Taft streets which would be on embankment. Depressed profiles have been established for cross streets under the UP mainline railroad and for local streets in the core area to facilitate the MPO Subalternative, also established as locally preferred alternative.

### ***Typical Sections***

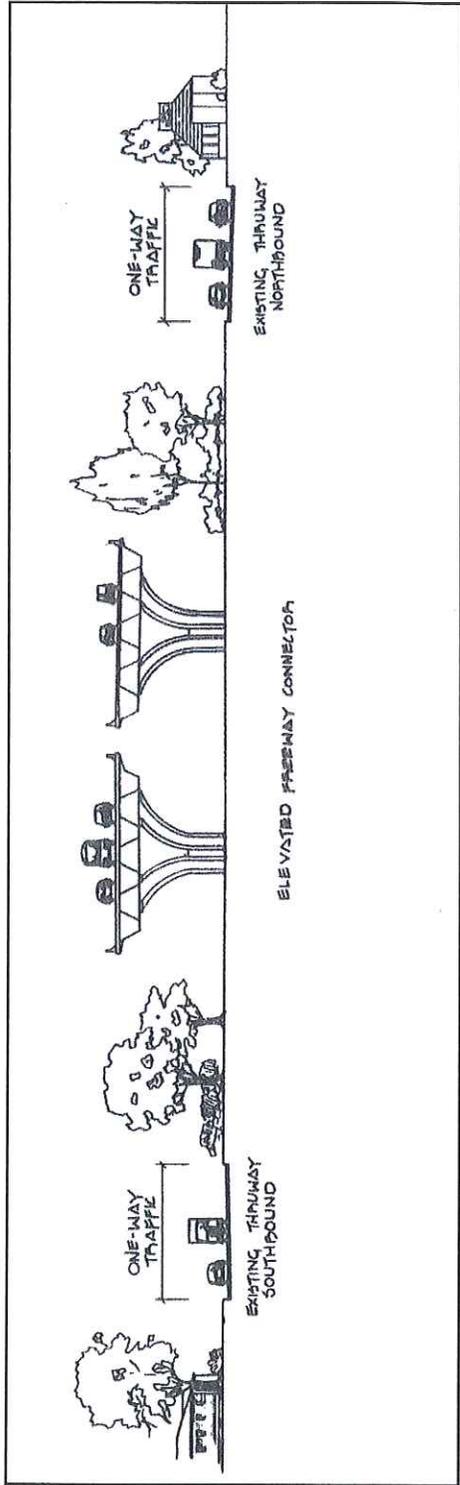
There are two general typical sections for the main corridor: 1) outside of core area and 2) central core area. As shown in Exhibit 5, both typical sections contain a mainline freeway with continuous one-way frontage roads for local traffic. The typical section for the outside of core area contains frontage roads running parallel to the freeway flanking both sides of the facility. The typical section for the central core area is similar but has the frontage roads running parallel to the freeway on one side. This is due to new freeway alignment adjacent to the railroad which allows for the future frontage road system to generally remain on the existing Evangeline Thruway alignment to the east of the freeway. As shown in the typical section in the core area, there will be 280' clearance from the elevated freeway to the face of the church.

Also, due to the densely populated urban nature of the project, the I-49 mainline typical section shown in the EIS uses a minimal separation between structures throughout the corridor as necessary outside and inside of the core area. The primary reason for this was to minimize the overall footprint of the proposed roadway and thus minimize impacts.

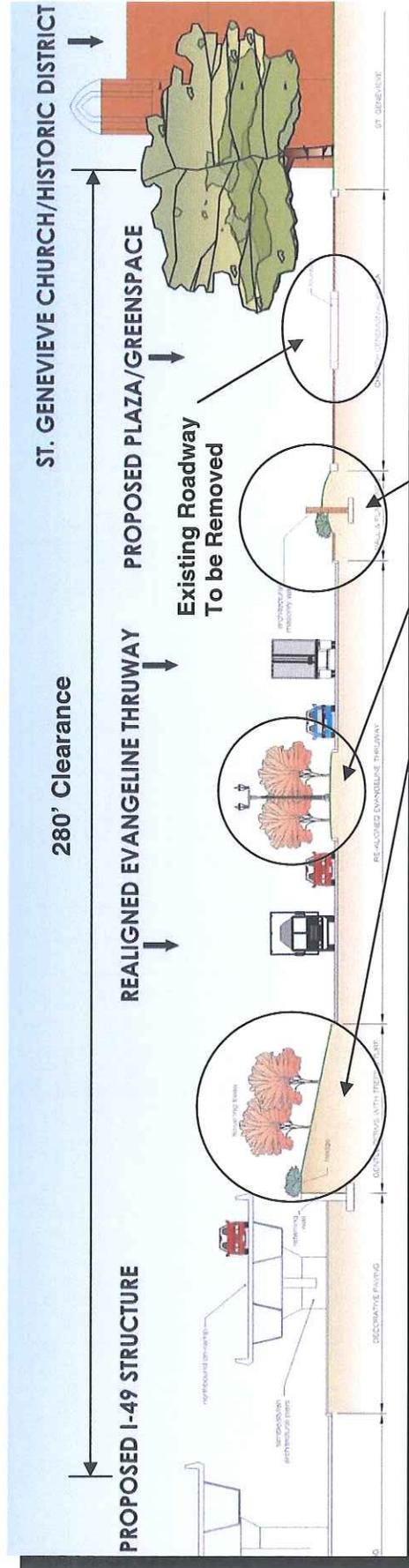
**EXHIBIT 4**  
**FEIS Selected Alternative**  
**(RR-4 with MPO Subalternative & Subalternative F)**



**Typical Section - Outside of Core Area**



**Typical Section - Core Area near Church**



**EXHIBIT 5**  
 Typical Sections

## **PROPOSED DESIGN MODIFICATIONS TO FEIS SELECTED ALTERNATIVE**

Through the development process of the Selected Alternative since 2003, state and local officials have identified potential design modifications to the Selected Alternative based on factors such as community input on Context Sensitive Solutions (CSS), traffic and operations. Currently, there are 5 potential design modifications under consideration for the proposed project including:

- 1) **30' Mainline Structure Separation** – Increases separation of mainline structures primarily in core area to 30'
- 2) **2<sup>nd</sup>/3<sup>rd</sup> At Evangeline Thruway** – Combines southbound and northbound Evangeline Thruway intersections at 2<sup>nd</sup>/3<sup>rd</sup> into one intersection
- 3) **Castille/Martin Luther King(MLK) Connection** - Eliminates Castille/MLK connection under I-49 Mainline
- 4) **Braided NB Ramps at University to 2nd/3rd and Johnston/US 167**- Combines two northbound exit ramps near University into one two lane exit feeding 2<sup>nd</sup>/3<sup>rd</sup> & Johnston
- 5) **Braided SB Ramps at Willow to 2nd/3rd and Johnston/US 167** - Combines two southbound exit ramps near Willow into one two lane exit feeding 2<sup>nd</sup>/3<sup>rd</sup> & Johnston

Three exhibits have been prepared to accompany this briefing package discussions. Roll No. 1 is plotted at 1"=200' and shows design modifications 1, 2, and 3 in the core and northern areas of the corridor with estimated changes in right of way impacts. Roll No. 2 shows the ramp spacing for the FEIS Selected Alternative design at 1"=400' scale for comparison. Finally, Roll No. 3 shows design modifications 4 and 5 and the potential changes in right of way impacts due to these two modifications.

In addition, Table 1 has been prepared to summarize the evaluations performed for each design modification regarding right of way, displacements, impaired use, traffic operations/safety, railroad relocations, context sensitive solution opportunities, and costs. A discussion below details the major influencing factors, design characteristics, and potential impacts for each design modification.

The exhibits and discussions presented as part of this briefing package have been prepared based on preliminary engineering analysis at a level of magnitude suitable for review and comment at this initial stage. More detailed analysis is warranted for these design modifications once LaDOTD and FHWA determine whether to proceed with any/all of the alternatives presented in this briefing package.

**TABLE 1**  
**I-49 CONNECTOR PHASE II - FUNCTIONAL PLAN**  
**PROPOSED DESIGN MODIFICATIONS TO FEIS SELECTED ALTERNATIVE**  
**EVALUATIONS MATRIX\***  
S.P.N. 700-24-0073  
F.A.P. DE-0009(802)



Date: 04/16/2008

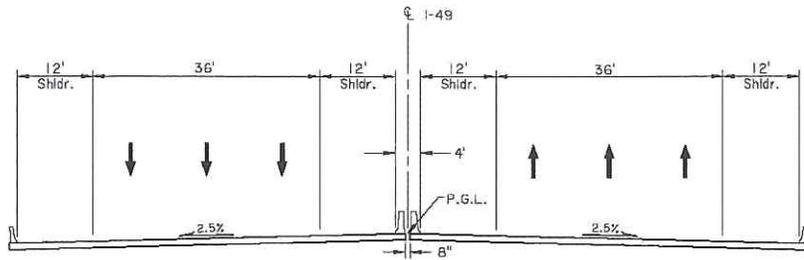
Description of Modification		Evaluation Category						Costs (\$ Millions)
		Right -of-Way	Displacements	Potential Impacts due to Impaired Use	Traffic Operations/Safety	Railroad Relocations	Context Sensitive Solutions	
1	30' Mainline Structure Separation	+4.9 acres -0.4 acres +4.5 net acres	+6 Res. +5 Bus.	+0 Res. +3 Bus.	Longer crossings at SPUIs may reduce interchange efficiency.	Will cause a section of railroad to be relocated at Johnston.	Fulfills LCG goals for community joint-use activities.	ROW (Res.): \$0.6 M ROW (Bus.): \$1.0 M Impaired Use (Bus.): \$1.4 M ROW (Land): \$0.2 M Construction Cost (RR): \$0.3 M 20% Contingency: \$0.7 M <b>TOTAL: \$4.2 M</b>
2	2 <sup>nd</sup> /3 <sup>rd</sup> @ Evangeline Thruway	+1.4 acres -0.1 acres +1.3 net acres	+2 Res. +3 Bus.	--	Improves traffic operations by combining intersections at Evangeline Thruway & 2 <sup>nd</sup> /3 <sup>rd</sup> into one intersection. This allows more distance from SPUI for longer queues and can be phased with SPUI more efficiently.	N/A	Provides a new potential CSS opportunity area.	ROW (Res.): \$0.2 M ROW (Bus.): \$0.6 M Less Signal Cost: -\$0.2 M 20% Contingency: \$0.2 M <b>TOTAL: \$0.8 M</b>
3	Castille/Martin Luther King Connection	+0 acres -1.0 acres -1.0 net acres	No change in number of buildings taken.	--	Improves traffic operations by eliminating frontage road intersections and allowing free flow use of U-turns at Willow and Chalmette to traverse from MLK to Castille. Reduced operating speed may be recommended.	N/A	Changes connectivity and pedestrian traffic flow.	Less ROW (Land): -\$0.1 M Less Signal Cost: -\$0.3 M Less Construction Cost: -\$0.9 M 20% Contingency: -\$0.3 M <b>(TOTAL: -\$1.6 M)</b>
4	Braided NB Ramps @ University, 2 <sup>nd</sup> /3 <sup>rd</sup> and Johnston	+5.8 acres -0 acres +5.8 net acres	+2 Res. +3 Bus.  Reduces impacts at water treatment plant between Vermilion River & Pinhook Rd.	--	Improves signing and traffic operations by combining 2 <sup>nd</sup> /3 <sup>rd</sup> & Johnston Street exit ramps into a double exit, allowing motorists more time for decision-making.  Improves access from Pinhook to I-49 NB.	N/A	New and longer ramp structures may create a greater presence in the community.  May reduce the size of a potential CSS opportunity area.	ROW (Res.): \$0.2 M ROW (Bus.): \$0.6 M ROW (Land): \$0.3 M Construction Cost: \$18.2 M 20% Contingency: \$3.9M <b>TOTAL: \$23.2 M</b>
5	Braided SB Ramps @ Willow, 2 <sup>nd</sup> /3 <sup>rd</sup> and Johnston	+6.2 acres -0 acres +6.2 net acres	+22 Res. +5 Bus.	--	Improves signing and traffic operations by combining 2 <sup>nd</sup> /3 <sup>rd</sup> & Johnston Street exit ramps into a double exit which separates later allowing motorists more time for decision-making.	N/A	New and longer ramp structures may create a greater presence in the community.	ROW (Res.): \$2.2 M ROW (Bus.): \$1.0 M ROW (Land): \$0.1 M Construction Cost: \$20.9M 20% Contingency: \$4.8M <b>TOTAL: \$29.0 M</b>
<b>DESIGN MODIFICATIONS TOTAL ESTIMATE:</b>								<b>\$55.6 M</b>

\*NOTE: These evaluations and assumptions are preliminary. More detailed design is warranted once decisions are made on which designs should move forward for public input.

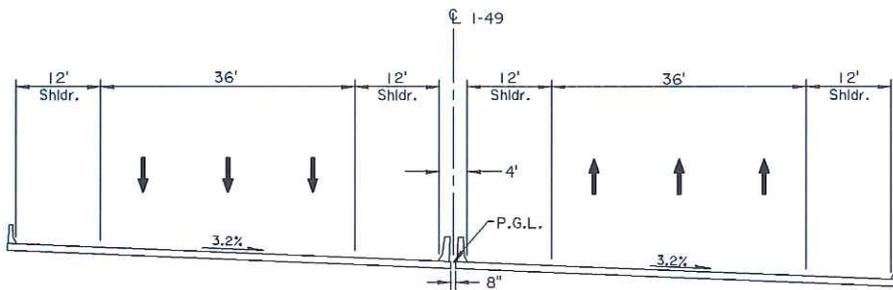


### 1) 30' Mainline Structure Separation

This design modification has been requested by local community groups and Lafayette Consolidated Government (LCG) based on input during the Context Sensitive Solutions (CSS) working group meetings in the summer of 2007. The main purpose of a wider separation was to improve under bridge use opportunities in the Core Area by allowing more sunlight between the two mainline structures. The Selected Alternative presented in the FEIS and ROD showed minimal separation to minimize impacts of the project, and thus, the original preliminary geometric layouts included less than a foot of separation between structures. The typical sections prepared for the core area geometric layouts during the preliminary design are shown in Exhibit 6.



NORMAL 6-LANE SECTION



SUPERELEVATED SECTION TREATMENT  
(Throughout Core Area)

EXHIBIT 6  
TYPICAL MAINLINE SECTIONS

As a result of this local input, LaDOTD and FHWA began the process to study impacts of widening the mainline structure separation within the core area primarily between Pinhook and Railroad Spur south of Willow. Based on commitments in the EIS & ROD, the following primary guidelines were used while developing this alternative in order to minimize impacts:

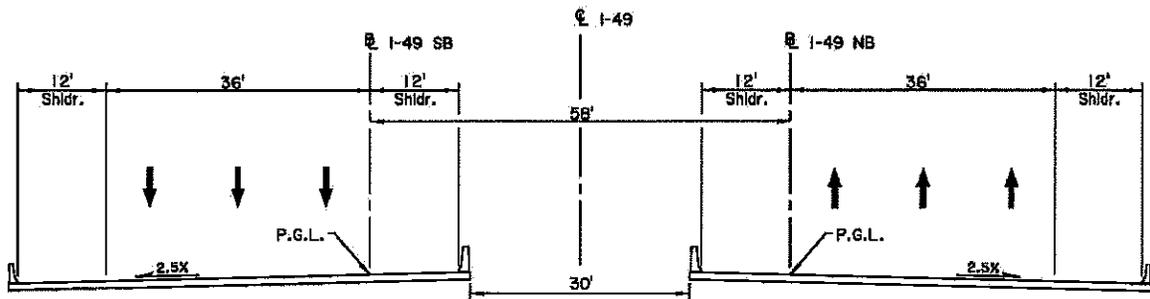
- Maintain proposed construction within existing right of way south of Vermilion River near Beaver Park and Trappey's Complex;
- Maintain I-49 mainline at a distance from Sterling Grove Historic District (including St. Genevieve Catholic Church) to the east near Simoce Street; and
- Maintain I-49 mainline and Northbound Ramp from Willow Street from negatively impacting Live Oak Tree No. 103.

This design modification is characterized by:

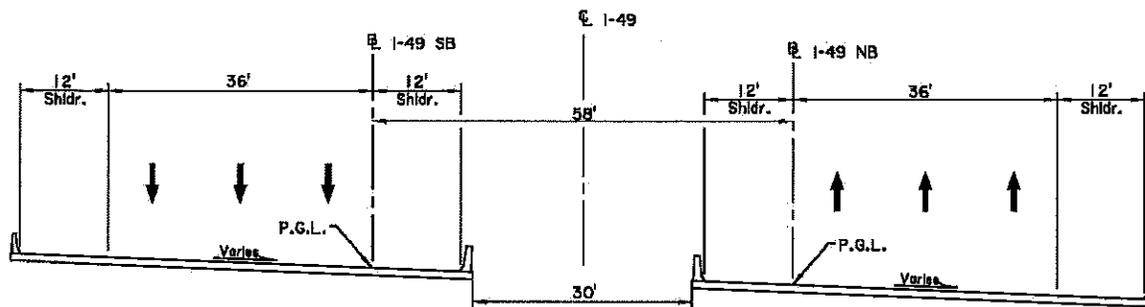
- A compound curve north of Vermilion River which is used to achieve transition between 4' and 30' transition;
- One simple curve (aprox. 5300' radius) along I-49 mainline between Pinhook Rd. and Mudd Ave. with 30' separation entire length of curve and tangents entering and exiting the curve. It is noted that this curve was created by offsetting the original northbound edge of pavement to achieve the 30' separation in order to minimize impacts to the east of the mainline, in particular to the Sterling Grove Historic District;
- As a result of the mainline being shifted further to the west, the railroad near Johnston St. Interchange will need to be relocated to allow for Johnston St. ramps and overall more right of way will be required to the west of the I-49 Connector mainline within this core area;
- Three centered compound curve on I-49 near Willow to achieve a transition from 30' to 17' median.

A typical section depicting the 30' separation of structures is shown in Exhibit 7.

Additional right of way (ROW) and displacements required for the new 30' structure spacing alternative is primarily on the western side of the corridor where the mainline was offset to avoid impacts to the Sterling Grove Historic District to the East. It is estimated that an additional 4.5 net acres, 6 residences and 5 businesses will need to be acquired and possibly 3 businesses will have impaired use with this design modification compared to the original EIS Selected Alternative geometric layout.



NORMAL 6-LANE SECTION



SUPERELEVATED SECTION TREATMENT  
(Throughout Core Area)

### EXHIBIT 7

#### TYPICAL MAINLINE SECTIONS

Regarding traffic operations/safety, this design modification would function in same fashion as the Selected Alternative with the same number of interchanges and ramp terminals in generally the same locations. One potential impact to operations would occur at the Johnston and 2<sup>nd</sup>/3<sup>rd</sup> Single Point Urban Interchanges (SPUI). The efficiency at the SPUI may be affected due to the longer distance required to go through the SPUI under the widened I-49 mainline and thus increasing signal time for certain phases. It is noted that using the 30' separation would have negligible impact on span lengths at the SPUIs and proposed signature bridges at these locations.

Opportunities for CSS associated with this design modification are desirable from local community standpoint based on their intentions to use under-bridge areas for joint use activities.

It is estimated that costs will increase with this design modification due to increased ROW, additional railroad coordination, and special considerations at railroad reconstruction area. It is estimated that this design modification will cost approximately \$4.2 M more than the Selected Alternative.

## **2) 2nd/3rd at Evangeline Thruway**

This design modification has been requested by LaDOTD's Geometric Section during their initial review of the Selected Alternative geometric layouts. The main purpose of implementing this design modification would be to improve traffic operations along 2nd/3<sup>rd</sup>, in particular, at 2nd/3rd SPUI directly to the west where there are heavy traffic volumes accessing the I-49 mainline. The redesign would include one intersection instead of two separate ones as previously shown in the EIS Selected Alternative.

This design modification would require an additional block of ROW, including 1.0 net acre, 3 businesses and 2 residences along Evangeline Thruway between Jefferson and 2nd/3rd. It is noted that with this relocation of the roadway it is possible to provide an additional CSS opportunity area between Evangeline Thruway and the I-49 mainline.

This design modification would improve traffic operations by allowing more distance from the SPUI for longer queues and therefore will be able to be phased with SPUI more efficiently. In addition, it is noted that at the 2nd/3rd's redesigned intersection with NBEV/SBEV, some of the turning movements could be eliminated to match the three-phased cycle with the 2nd/3rd SPUI under the Mainline.

It is anticipated that the overall costs would increase by approximately \$0.8 M with this design modification based on the need for more ROW even though signal costs will decrease by having one less signalized intersection.

## **3) Castille/Martin Luther King (MLK) Connection**

This design modification has also been requested by LaDOTD's Geometric Section to eliminate Castille/MLK roadway connection under the mainline. Instead, the U-turns at Willow and Chalmette would facilitate movements from MLK to Castille and vice versa. Primary reasons for considering this design is it would improve operations along frontage road in this area by reducing number of signals (by two) for motorists and potentially allowing for longer weave at Willow intersection approach from southbound exit ramp by eliminating critical vertical clearance point with MLK.

The ROW required for this design modification is less than the original Selected Alternative by 1.0 acre with no change in number of structures required. Based on traffic operations, the removal of this connection will directly improve the southbound exit ramp to Willow operations by lowering the ramp vertical alignment allowing shorter distance to tie into ground level frontage roads in advance of Willow intersection, resulting in a longer weave section along frontage road prior to Willow.

Without the connection under the I-49 mainline, vehicular traffic would utilize the U-turns between Willow and Chalmette to access MLK from Castille and vice versa. It was noted that vehicular traffic making this movement is fairly low. However, there is heavy pedestrian movement from MLK to Castille. Special care would need to be given in association with CSS studies to accommodate pedestrians in this area if design modification is adopted. The I-49 Connector elevated freeway will eliminate most of the vehicle/pedestrian conflicts that are present today.

Implementing this design would involve reduced construction and right of way costs by approximately \$1.6 M.

#### **4) Braided NB Ramps at University to 2<sup>nd</sup>/3<sup>rd</sup> and Johnston/US 167**

This design modification has been proposed by LaDOTD's Geometric Section for consideration based on potential signing issues associated with the closely spaced ramps of the FEIS Selected Alternative. The ramp spacing between interchanges for the FEIS Selected Alternative is noted on Roll No. 2. Each ramp spacing noted meets AASHTO recommended minimum ramp terminal spacing criteria for entrance/exit ramps (Exhibit 10-68 from AASHTO 2004 as shown in Appendix A). However, AASHTO also advocates that interchange spacing of 1 mile apart is desirable for freeway type facilities primarily for signing and safety reasons. As a result, LaDOTD has requested that this design modification be investigated for this project to maximize the distance between ramp terminals to ultimately increase interchange spacing without eliminating an interchange in the core area (in accordance with EDSM No. I.4.3.2, which is presented in Appendix B).

For northbound I-49, a potential opportunity exists to combine two exit ramp terminals into one exit ramp terminal by braiding northbound ramps between University/Surrey Street and Johnston/US 167. This would involve moving the University/Surrey Street northbound entrance ramp further north past the Pinhook Road intersection with an additional thru lane on the frontage road and a double exit braided ramp from northbound I-49 which would eventually feed Johnston and 2nd/3rd separately. This option would allow Taft Street to remain open, but would require 15th Street to close which would not have any effects to the overall surface street operations.

This modified ramp configuration compliments LCG's desire to have two interchanges (at Johnston/US 167 and 2nd/3rd) to feed the Lafayette CBD and LaDOTD's desire to improve signing and traffic operations at these closely spaced interchanges. By implementing this braided ramp design, the mainline operation is improved by transferring the driver decision points onto the two lane ramps passed the I-49 exit ramp terminals, thus maximizing the ramp spacing without eliminating an interchange.

Although the exit ramps leaving the mainline are combined initially into one ramp terminal, access to the interstate would remain the same as proposed in the Selected Alternative with an entrance ramp at both Johnston/US 167 and 2nd/3rd from the CBD. Accordingly, access to the mainline is not a problem regarding decision-making because there is no decision required for entrance ramps as merge areas – only diverges.

Access at Pinhook Road would be improved with this design because motorists would have the opportunity to use the northbound entrance ramp now located north of Pinhook. With the original scenario, motorists would travel along northbound Evangeline Thruway to Johnston/US 167 and access entrance ramp from SPUI.

It is noted that new and longer ramp structures associated with this design modification may create a greater presence in the community and thus require special attention during the CSS design. In addition, this alternative may reduce the size of a potential CSS opportunity area south of Johnston/US 167.

This design would involve 5.8 net acres, 2 residences and 3 businesses in addition to those required for the 30' separation design modification. However, it is anticipated that impacts would be reduced at the water treatment plant located east of the corridor and south of Pinhook Road.

Implementing this design will add costs of approximately \$23.2 M due to the increase in net structures and additional required ROW. It is noted that this estimate does not include potential additional impacts to Pinhook based on a possible increase in capacity near the new relocated ramp.

#### **5) Braided SB Ramps at Willow to 2<sup>nd</sup>/3<sup>rd</sup> and Johnston/US 167**

For southbound I-49, another opportunity exists to combine two exits into one exit by braiding ramps within the corridor to allow for longer ramp spacing in southbound direction south of the Willow interchange. This option would allow for a longer signing area by moving the southbound entrance ramp from Willow further south past the railroad spur and braiding the southbound CBD area exit ramp from I-49 in the same area. This exit ramp would be a two-lane ramp which would diverge into two separate one-lane ramps feeding traffic onto 2nd/3rd and Johnston/US 167. To adequately accommodate lane balance, a fourth lane would be provided on I-49 from Willow Street exit to the new two-lane ramp terminal location.

This modified ramp configuration compliments LCG's desire to have two interchanges (at Johnston/US 167 and 2nd/3rd) to feed the Lafayette CBD and LaDOTD's desire to improve signing and traffic operations at these closely spaced interchanges. By implementing this braided ramp design, the mainline operation is improved by transferring the main decision points onto the two lane ramps passed the I-49 exit ramp terminals, thus maximizing the ramp spacing without eliminating an interchange.

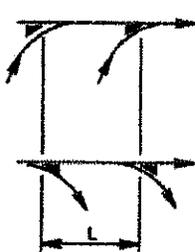
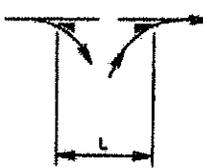
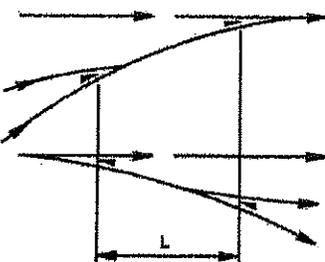
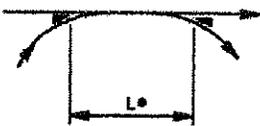
Although the exit ramps leaving the mainline are combined initially into one ramp terminal, access to the interstate would remain the same as proposed in the Selected Alternative with an entrance ramp at both Johnston/US 167 and 2nd/3rd from the CBD. Accordingly, access to the mainline is not a problem regarding decision-making because there is no decision required for entrance ramps as merge areas – only diverges.

Approximately 6.2 net acres, 22 residences and 5 businesses would be required in addition to those noted in the 30' separation design modification.

Regarding CSS opportunities, it is noted that the new and longer ramp structures associated with this design modification may create a greater presence in the community and thus require special attention during the CSS design. In addition, this alternative may reduce the size of a potential CSS opportunity area south of Johnston/US 167.

Also, the additional cost associated with this design modification is anticipated to be approximately \$29.0 M. This is due to the increase in net structure and additional ROW required.

## APPENDIX A

EN-EN OR EX-EX		EX-EN		TURNING ROADWAYS		EN-EX (WEAVING)			
									
						* NOT APPLICABLE TO CLOVERLEAF LOOP RAMPS			
FULL FREEWAY	CDR OR FDR	FULL FREEWAY	CDR OR FDR	SYSTEM INTER- CHANGE	SERVICE INTER- CHANGE	SYSTEM TO SERVICE INTERCHANGE		SERVICE TO SERVICE INTERCHANGE	
						FULL FWY.	CDR OR FDR	FULL FWY.	CDR OR FDR
MINIMUM LENGTHS MEASURED BETWEEN SUCCESSIVE RAMP TERMINALS									
300 m (1000 ft)	240 m (800 ft)	150 m (500 ft)	120 m (400 ft)	240 m (800 ft)	180 m (600 ft)	500 m (2000 ft)	480 m (1600 ft)	480 m (1600 ft)	300 m (1000 ft)

NOTES: FDR - FREEWAY DISTRIBUTOR ROAD      EN - ENTRANCE  
 CDR - COLLECTOR DISTRIBUTOR ROAD      EX - EXIT

THE RECOMMENDATIONS ARE BASED ON OPERATIONAL EXPERIENCE AND NEED FOR FLEXIBILITY AND ADEQUATE SIGNING. THEY SHOULD BE CHECKED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE HIGHWAY CAPACITY MANUAL (4) AND THE LARGER OF THE VALUES IS SUGGESTED FOR USE. ALSO, A PROCEDURE FOR MEASURING THE LENGTH OF THE WEAVING SECTION IS GIVEN IN CHAPTER 24 OF THE 2000 HIGHWAY CAPACITY MANUAL (4). THE "L" DISTANCES NOTED IN THE FIGURES ABOVE ARE BETWEEN LIKE POINTS, NOT NECESSARILY "PHYSICAL" GORES. A MINIMUM DISTANCE OF 90 m (270 ft) IS RECOMMENDED BETWEEN THE END OF THE TAPER FOR THE FIRST ON RAMP AND THE THEORETICAL CORE FOR THE SUCCEEDING ON RAMP FOR THE EN-EN (SIMILAR FOR EX-EN).

**Exhibit 10-68. Recommended Minimum Ramp Terminal Spacing  
 (AASHTO 2004)**

## APPENDIX B

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT OFFICE OF HIGHWAYS			<b>EDSM No: I.4.3.2</b>
<b>ENGINEERING DIRECTIVES AND STANDARDS</b>			
<b>VOLUME</b>	I	<b>Revision Date:</b>	
<b>CHAPTER</b>	4	<b>Effective Date:</b>	03/06/2006
<b>SECTION</b>	3	<b>Subject:</b>	NEW INTERCHANGE REQUESTS
<b>DIRECTIVE</b>	2		

**1. PURPOSE:**

The purpose of this directive is to establish an approval process for requests involving new access for interchange construction on existing controlled-access facilities, and to document the information needed for those requests.

**2. SCOPE:**

This directive applies to full and partial interchanges on interstate and non-interstate controlled-access facilities, as well as to connections to existing ramps and cross streets / roads, which are within existing control-of-access limits.

**3. POLICY:**

The construction of Interstate and non-Interstate controlled-access facilities requires the purchase of all access rights along the corridor, in accordance with state law.

Access to these facilities must be limited to interchange locations that meet spacing requirements and that coincide only with arterial and collector routes, so that the facilities function as intended and are capable of handling present and future traffic safely and efficiently. Temporary ramps / connections will not be permitted to these facilities, their ramps, or their interchange crossroads within control of access limits. Space between interchanges is necessary to allow for adequate signing, for the proper deceleration and acceleration of traffic, and to ensure that traffic can change lanes and merge properly.

These facilities must continue to provide the highest level of service in terms of mobility and public safety. Therefore, approval of additional interchanges must be strongly regulated.

Requests for new interchange access shall;

- a) come to the Department in writing,
- b) be from the appropriate municipal or parish authority,
- c) state the reason(s) for the new interchange access, and
- d) meet the following criteria regardless of funding:

1) A minimum interchange spacing of one mile in urban areas and three miles in rural areas should be maintained. A spacing of approximately two miles is acceptable if one interchange will be located in an urban area and one will be located in a rural area. Distances shorter than 1 mile may be allowed in urban areas if collector-distributor roads are used or if ramps are grade separated. Urban areas are generally those within the corporate limits of a community with a population of 5000 or more.

2) New interchanges must connect to public arterial or collector routes. Preference will be given to those routes already in the state transportation system.

3) Generally, new interchanges must provide for all eight traffic movements. However, if the interchange will serve only one side of the controlled-access facility, then a directional or trumpet interchange design may be utilized to provide for the four needed traffic movements.

4) The interchanging route must be a part of the metropolitan and/or statewide transportation plan, as appropriate.

5) The new interchange design must be developed in accordance with the Department's direction and with the appropriate AASHTO Policy on Geometric Design of Highways and Streets.

Construction of additional interchanges for local roads or commercial developments is not consistent with the establishment of a controlled-access facility and shall only be considered based on the above criteria. Local traffic needs from additional development can be addressed by modifying existing interchanges and/or extending frontage roads.

If the above criteria are met, then an interchange justification study will be prepared to demonstrate the need. The study shall include a traffic impact analysis that demonstrates that existing interstate access is not sufficient and / or cannot be improved, and that proposed improvements won't significantly impact the controlled-access facility. The Department will review the study and determine if additional information is needed.

If the need is demonstrated, an environmental document may also be required.

Upon approval, project feasibility will be established, and plan development may proceed, providing funding has been identified.

#### **4. LEGISLATION:**

A change in the control-of-access on any controlled-access facility (Interstate and non-Interstate) must be approved by the Chief Engineer and Federal Highway Administration. Following are excerpts from state law that apply to controlled-access facilities:

**R.S. 48:1(12)** *"Limited-access facility":*

*"Limited-access facility" is a highway or street especially designed for through traffic, over, from, or to which owners or occupants of abutting land or other persons have no right or servitude or only a limited right or servitude of access, light, air, or view by reason of the fact that their property abuts thereupon or for any other reason. These highways or streets may be parkways, from which trucks, busses, and other commercial vehicles shall be excluded; or they may be freeways open to use by all customary forms (of) street and highway traffic.*

**R.S. 48:301.** *Authority to establish and regulate controlled-access facilities:*

*The highway authorities of the state, parishes and municipalities of Louisiana, acting alone or in cooperation with each other or with any federal, state, or local agency or any other state having authority to participate in the construction and maintenance of highways, may plan, designate, establish, regulate, vacate, alter, improve, maintain and provide controlled-access facilities for public use whenever they determine that traffic conditions, present or future, justify such special facilities. However, within municipalities, the exercise of this power is subject to such municipal consent as is necessary by law.*

*In addition to the specific powers granted in this Part, they also have, relative to controlled-access facilities, all additional authority now or hereafter vested in them relative to highways or streets within their respective jurisdictions. They may regulate, restrict, or prohibit the use of controlled-access facilities by the various classes of vehicles or traffic in a manner consistent with R.S. 48:1(12).*

**RS: 48:302.** *Design of controlled-access facility; right of access:*

*The highway authorities may design any controlled-access facility and regulate, restrict, or prohibit access so as to best serve the traffic for which it is intended. The authority's determination of that design is final.*

*They may divide and separate any controlled-access facility into separate roadways by the construction of raised curbing, central dividing sections, or other physical separations, or by designating the separate roadways by signs, markers, stripes, and the proper lane for such traffic by appropriate signs, markers, stripes and other devices. No person has any right of access to, from or across controlled-access facilities to or from abutting lands, except at the designated points at which access is permitted upon the terms and conditions specified from time to time.*

**5. OTHER ISSUANCES AFFECTED:**

All directives, memoranda or instructions heretofore in conflict with this directive are hereby rescinded.

**6. EFFECTIVE DATE:**

This policy will be effective immediately upon receipt.

WILLIAM H. TEMPLE  
CHIEF ENGINEER