



Louisiana Statewide Transportation Plan

December 2015

prepared for
Louisiana Department of Transportation and Development

prepared by
CDM Smith Inc.
in collaboration with:
CH Fenstermaker & Associates, LLC
Gregory C. Rigamer & Associates, Inc.
HDR Engineering, Inc.
High Street Consulting Group
Neel Schaffer
Futurist.Com



Table of Contents

1. Introduction	1-1
1.1 Plan Highlights	1-1
1.2 Planning Context Plan Development	1-2
1.3 Plan Implementation Since 2003.....	1-4
1.4 Plan Coordination and Incorporation of Other Plans	1-4
1.5 Modal Analysis.....	1-5
2. Vision, Goals, Objectives, and Performance Measures	2-1
2.1 Highlights	2-1
2.2 Early Public Outreach	2-2
2.2.1 Legislative Questionnaire	2-2
2.2.2 Public Telephone Survey	2-4
2.2.3 Visioning Workshop Trends Analysis.....	2-8
2.3 Trends/Challenges for Louisiana's Transportation Systems.....	2-13
2.3.1 Projected Population and Employment Trends	2-13
2.3.2 Challenges.....	2-18
2.4 Louisiana's Vision.....	2-18
2.5 Goals, Objectives, and Performance Measures.....	2-19
2.5.1 Goal #1: Infrastructure Preservation and Maintenance.....	2-20
2.5.2 Goal #2: Safety.....	2-20
2.5.3 Goal #3: Economic Competitiveness	2-21
2.5.4 Goal #4: Community Development and Enhancement.....	2-21
2.5.5 Goal #5: Environmental Stewardship	2-22
2.6 MAP-21 Context	2-22
2.6.1 MAP-21 Performance Management	2-22
3. Public Involvement.....	3-1
3.1 Highlights	3-1
3.2 Public Involvement Plan	3-1
3.3 Project Website	3-2

Final Report
TABLE OF CONTENTS

3.4	DOTD Executive Staff Interviews	3-3
3.5	Legislative Questionnaire	3-3
3.6	Public Telephone Survey	3-4
3.7	Native American Tribe Consultation.....	3-5
3.8	Visioning Workshop.....	3-5
3.9	Advisory Councils and Policy Committee	3-6
3.10	Advocate Megaproject Presentations	3-7
3.11	Plan Development and Approval.....	3-7
4.	Transportation in Louisiana	4-1
4.1	Louisiana Transportation System at a Glance	4-1
4.2	Highlights	4-2
4.3	Highways.....	4-2
4.3.1	Pavements	4-3
4.3.2	Bridges	4-4
4.3.3	Intelligent Transportation Systems/Operations/Motorist Services	4-6
4.3.4	Traffic Safety.....	4-10
4.3.5	Mobility and Congestion.....	4-12
4.3.6	Trucking	4-20
4.4	Ports and Waterways.....	4-27
4.4.1	Navigable Waterway Corridors.....	4-27
4.4.2	Ports and Intermodal Land Connections	4-30
4.4.3	Port Commodities and Tonnages	4-31
4.4.4	Waterborne Freight Forecasts.....	4-32
4.5	Freight Rail	4-33
4.5.1	Class I Railroads	4-35
4.5.2	Local, Switching, Terminal Railroads	4-35
4.5.3	Rail Freight Commodities	4-37
4.5.4	Rail Freight Forecasts.....	4-40
4.5.5	Rail Crossing Safety.....	4-41
4.6	Aviation.....	4-41
4.6.1	Carriers and Enplanements	4-44
4.6.2	Air Cargo	4-45
4.6.3	Airborne Freight Shipment Forecasts.....	4-49

4.7	Public Transportation	4-50
4.7.1	Public Transportation Performance Objectives.....	4-50
4.7.2	Overview of Public Transportation Services.....	4-51
4.7.3	Urban Transit	4-52
4.7.4	Elderly and Persons with Disabilities Transit	4-52
4.7.5	Rural Transit.....	4-53
4.7.6	Intercity Transit	4-54
4.7.7	Passenger Rail.....	4-54
4.8	Bicycle and Pedestrian.....	4-54
4.8.1	Bicycle Safety	4-56
4.8.2	Pedestrian Safety.....	4-56
5.	Transportation System Needs.....	5-1
5.1	Definition of Needs.....	5-2
5.2	Types of Needs	5-2
5.3	Primary Sources.....	5-3
5.3.1	Pavement Needs.....	5-4
5.3.2	Bridge Needs.....	5-7
5.3.3	Operational and Motorist Service Improvement Needs	5-9
5.3.4	Safety Needs	5-10
5.3.5	Mobility and Congestion.....	5-10
5.3.6	Highway Needs Summary.....	5-11
5.3.7	Trucking Needs	5-12
5.3.8	Ports and Waterways Needs	5-14
5.3.9	Freight Rail Needs.....	5-16
5.3.10	Aviation Needs.....	5-17
5.3.11	Public Transportation Needs	5-20
5.3.12	Modernization of Services	5-20
5.3.13	Summary of Statewide Transit Needs	5-21
5.3.14	Bicycle and Pedestrian Needs.....	5-22
5.4	Needs Summary.....	5-23
6.	Funding Louisiana's Transportation Needs.....	6-1
6.1	Highlights	6-1
6.2	Recurring Funding Sources	6-1

Final Report
TABLE OF CONTENTS

6.2.1	State Motor Fuel Tax	6-2
6.2.2	TIMED Program.....	6-2
6.2.3	Registration Fees	6-2
6.2.4	Unclaimed Property.....	6-4
6.2.5	Federal Funds	6-4
6.2.6	Louisiana Capital Outlay Program	6-4
6.3	Revenue Scenarios.....	6-4
6.3.1	Current Roadway and Bridge Revenues	6-5
6.3.2	Current Transit Revenue.....	6-5
6.3.3	Current Port, Aviation, and Rail Revenue.....	6-6
6.3.4	Revenue Forecasts Key Assumptions	6-7
6.3.5	Inflation Indices	6-7
6.3.6	Scenario Definitions.....	6-8
6.3.7	History vs Forecast (Highway and Transit Revenue)	6-9
6.4	Funding Gap.....	6-10
6.5	Public-Private Partnerships	6-11
6.5.1	Louisiana Transportation Authority.....	6-11
6.5.2	Public-Private Partnerships	6-11
6.6	Potential State Funding Options.....	6-11
6.6.1	General Sales Tax.....	6-11
6.6.2	Motor Fuels Sales Tax (Percentage of Value)	6-12
6.6.3	Vehicle Miles Traveled Fee	6-13
6.6.4	Local Funding Options	6-13
6.6.5	Advanced Transportation District.....	6-18
6.6.6	Tolling	6-19
6.6.7	Indexing Motor Fuel Taxes	6-20
6.6.8	Project Specific Tax.....	6-20
6.6.9	Increase Registration Fees.....	6-21
6.6.10	Violation Surcharge	6-21
6.7	Feedback on Funding Uncertainty.....	6-22
7.	Megaprojects	7-1
7.1	Highlights	7-1
7.2	Megaproject Development.....	7-1

7.3	Completed/Funded Megaprojects	7-2
7.4	Prioritized Unfunded Megaprojects	7-5
7.4.1	Priority A Megaprojects.....	7-5
7.4.2	Priority B Megaprojects.....	7-8
7.4.3	Priority C Megaprojects.....	7-11
7.4.4	Priority D Megaprojects.....	7-14
8.	Recommendations	8-1
8.1	Highlights	8-1
8.2	Aviation.....	8-2
8.3	Community Development and Enhancement	8-2
8.4	Freight Rail.....	8-3
8.5	Ports and Waterways.....	8-4
8.6	State Highway Operations and Maintenance.....	8-4
8.7	Trucking	8-5
8.8	Budget Allocation 2012 compared to 2022 and 2042.....	8-6

List of Tables

Table 2-1: Description of Land Use Scenarios.....	2-9
Table 2-2: Description of Economic Scenarios.....	2-11
Table 2-3: Infrastructure Preservation and Maintenance Objectives and Performance Measures.....	2-20
Table 2-4: Safety Objectives and Performance Measures.....	2-20
Table 2-5: Economic Competitiveness Objectives and Performance Measures	2-21
Table 2-6: Community Development and Enhancement Objectives and Performance Measures	2-21
Table 2-7: Environmental Stewardship Objectives and Performance Measures	2-22
Table 2-8: Comparison of MAP-21 and Louisiana Plan Goals	2-23
Table 2-9: FHWA Performance Measure Groupings.....	2-24
Table 3-1: Overview of Public Involvement Activities	3-2
Table 4-1: Transportation in Louisiana at a Glance (as of January 2015).....	4-1
Table 4-2: Louisiana Highway System Centerline Mileage	4-3
Table 4-3: Roadway System Pavement Conditions, 2013.....	4-4
Table 4-4: Crash Types (All Roads)	4-11
Table 4-5: Journey to Work Transportation Mode by Metropolitan Statistical Area, 2013	4-15
Table 4-6: Distribution of Commuting Times by Urban Area (Minutes), 2013	4-15
Table 4-7: Estimated 2010 Congestion by Roadway Type	4-16
Table 4-8: Estimated 2044 Congestion by Roadway Type	4-18
Table 4-9: Truck Freight Commodities in Louisiana, by Tonnage and Value, 2012	4-22
Table 4-10: Forecast Truck Freight Tonnage by Commodity, 2012 and 2038	4-27

Final Report
TABLE OF CONTENTS

Table 4-11: Navigable Waterway Corridors in Louisiana by Major Segments.....	4-28
Table 4-12: Louisiana Ports	4-30
Table 4-13: Outbound and Inbound Water Freight Traffic by Major Commodities, 2012	4-31
Table 4-14: Total Water Freight Traffic by Major Commodities, 2012 and 2038.....	4-33
Table 4-15: Louisiana Rail Freight by Direction, 2012.....	4-37
Table 4-16: Forecast Rail Freight Tonnage by Commodity, 2012 and 2038	4-40
Table 4-17: Air Carriers Operating at Louisiana's Commercial Airports	4-44
Table 4-18: Historical Enplanements, 2003 to 2014.....	4-44
Table 4-19: Forecast Enplanements at Louisiana Commercial Airports, 2015 to 2040.....	4-45
Table 4-20: Historic Air Cargo Tonnage (Short Tons), 2006 to 2010	4-46
Table 4-21: Airborne Freight Shipments by Major Commodities, 2012	4-46
Table 4-22: Air Freight Traffic by Airport, 2012	4-48
Table 4-23: Air Freight Traffic by Major Commodities, 2038	4-49
Table 4-24: Louisiana Public Transit, FY 2014	4-51
Table 4-25: Urban Area Transit Providers.....	4-52
Table 4-26: FTA 5310 Program Ridership and Expenses.....	4-53
Table 4-27: FTA 5311 Program Ridership and Budget.....	4-53
Table 5-1: DOTD Primary Roles by Mode.....	5-2
Table 5-2: Pavement Needs by Roadway System (in millions of 2010 dollars)	5-5
Table 5-3: Miles of Pavement Improvements, Directional Total through 2044	5-5
Table 5-4: Pavement Needs, Existing and Future (in millions of 2010 dollars)	5-5
Table 5-5: Bridge Needs by Improvement Category (in millions of 2010 dollars, State System)	5-8
Table 5-6: Bridge Needs by State of Good Repair Activity (in millions of 2010 dollars, State System).....	5-8
Table 5-7: Total Bridge Needs (in millions of 2010 dollars)	5-9
Table 5-8: Operational and Motorist Service Improvement Needs – Historical and Projected (in millions of 2010 dollars)	5-10
Table 5-9: Safety Needs by Improvement (in millions of 2010 dollars).....	5-10
Table 5-10: Highway Mobility Needs (in millions of 2010 dollars)	5-11
Table 5-11: Summary of Highway Needs (in millions of 2010 dollars)	5-11
Table 5-12: Factors Influencing Truck Efficiency, a Carrier's View of Importance.....	5-12
Table 5-13: Industry Observations on 2008 Plan Recommendations.....	5-13
Table 5-14: Ports and Waterways Needs Totals for 30 Years (in thousands of 2010 dollars).....	5-16
Table 5-15: Summary of Short Range Freight Rail Needs (in millions of 2010 dollars)	5-17
Table 5-16: Summary of Long Range Freight Rail Needs (in millions of 2010 dollars)	5-17
Table 5-17: Louisiana Aviation System Needs over 30 Years (in billions of 2010 dollars).....	5-19
Table 5-18: Transit Maintenance and Preservation Needs (in millions of 2010 dollars).....	5-20
Table 5-19: Transit Modernization and Enhanced Service Needs (in millions of 2010 dollars)	5-21
Table 5-20: Total Public Transportation Needs (in millions of 2010 dollars).....	5-21
Table 5-21: Louisiana Passenger Rail Capital Needs (in millions of 2010 dollars)	5-22
Table 5-22: Forecasted Bicycle and Pedestrian Infrastructure Cost Estimates* (in millions of 2010 dollars)	5-23
Table 5-23: Total Transportation Funding Needs for Louisiana (in billions of 2010 dollars).....	5-23
Table 6-1: State Comparison of Fuel Tax	6-2

Table 6-2: State Comparison of Motor-Vehicle Fee Registration Schedules	6-3
Table 6-3: Revenue Scenario Totals by Mode through 2044 (in billions of 2010 dollars)	6-5
Table 6-4: FTA Apportionments to Louisiana FY 2011-2012 (in millions of dollars).....	6-6
Table 6-5: Needs versus Revenues (Funding Gap), FY 2012-2044 (in billions of 2010 dollars)	6-11
Table 6-6: State Examples of Advanced Transportation Districts.....	6-18
Table 7-1: Priority A Megaprojects	7-5
Table 7-2: Priority B Megaprojects	7-8
Table 7-3: Priority C Megaprojects	7-11
Table 7-4: Priority D Megaprojects	7-14
Table 8-1: Aviation Recommendations.....	8-2
Table 8-2: Community Development and Enhancement Recommendations	8-2
Table 8-3: Freight Rail Recommendations.....	8-3
Table 8-4: Ports and Waterways Recommendations.....	8-4
Table 8-5: State Highway Operations and Maintenance Recommendations.....	8-4
Table 8-6: Trucking Recommendations	8-5
Table 8-7: Forecast Funding Scenarios* FYs 2012, 2022, & 2042 Budget Line Items (\$M, in Year of Expenditure Dollars)	8-6

List of Figures

Figure 1-1: Statewide Transportation Plan Development Process	1-3
Figure 1-2: Louisiana DOTD Hierarchy of Plans	1-4
Figure 1-3: Statewide Transportation Plan Decision-Making Process.....	1-6
Figure 2-1: Responses to Question 3 of Legislative Questionnaire	2-2
Figure 2-2: Responses to Question 4 of Legislative Questionnaire	2-3
Figure 2-3: Responses to Question 5 of Legislative Questionnaire	2-4
Figure 2-4: Results of “Relative Importance of Transportation and Perception of Current Conditions” (Public Telephone Survey)	2-5
Figure 2-5: Results of “Importance of Investments” (Public Telephone Survey)	2-6
Figure 2-6: Results of “Choice Between Building New Roads or Improve Existing Roads” (Public Telephone Survey)	2-6
Figure 2-7: Results of “Prioritize between Focused Policy on Roads/Autos or on Broad Options” (Public Telephone Survey)	2-7
Figure 2-8: Results of “Revenue Options” (Public Telephone Survey)	2-7
Figure 2-9: Results of “Future Land Use Patterns” (Public Telephone Survey)	2-8
Figure 2-10: Land Use Scenario 1 – Status Quo Development Pattern	2-9
Figure 2-11: Land Use Scenario 2 – Town Centers Development Pattern.....	2-10
Figure 2-12: Land Use Scenario 3 – Urban Centers Development Pattern.....	2-10
Figure 2-13: Economic Scenario 1: Extractive and Resource Industry Jobs, 2040.....	2-12
Figure 2-14: Economic Scenario 2: Arts, Entertainment, Health Jobs, 2040	2-12
Figure 2-15: Technology Jobs, 2040.....	2-13
Figure 2-16: Louisiana Population, 1990 to 2040	2-14
Figure 2-17: Change in Population by Parish, 2010-2040, Louisiana.....	2-15

Final Report
TABLE OF CONTENTS

Figure 2-18: Louisiana Employment, 1990 to 2040	2-16
Figure 2-19: Change in Employment by Parish, 2010-2040, Louisiana.....	2-17
Figure 2-20: Comparison of MAP-21 Goals and Louisiana Plan Goals.....	2-23
Figure 3-1: Statewide Transportation Plan Website.....	3-3
Figure 3-2: Example Question and Responses from Legislative Questionnaire	3-4
Figure 3-3: Example Question and Results from Telephone Survey.....	3-5
Figure 3-4: Statewide Transportation Plan Approval Hierarchy	3-6
Figure 3-5: Advisory Council and Policy Committee Meetings Topics.....	3-8
Figure 4-1: Structural Bridge Condition Ratings by Deck Area and Functional Classification (On-and Off-System), 2014.....	4-5
Figure 4-2: Trends in Louisiana State System Bridge Condition and Spending (State System, 2010 Dollars)	4-6
Figure 4-3: DOTD 511 Website	4-9
Figure 4-4: Vehicle Miles of Travel in Louisiana Roads, 2003 to 2013.....	4-13
Figure 4-5: Estimated 2010 Weekday Traffic Volumes on Louisiana Highways	4-14
Figure 4-6: Estimated 2010 Volume to Capacity Ratios on Louisiana Roads.....	4-17
Figure 4-7: Estimated 2044 Volume to Capacity Ratios on Louisiana Roads.....	4-19
Figure 4-8: Tonnage of Commodities Shipped by Truck to, from or within Louisiana, 2012	4-21
Figure 4-9: Value of Commodities Shipped by Truck to, from or within Louisiana, 2012	4-21
Figure 4-10: Louisiana Truck Tonnage by Traffic Type, 2012	4-23
Figure 4-11: Inbound Truck Freight Shipments by State of Origin, 2012	4-23
Figure 4-12: Outbound Truck Freight Shipments by State of Destination, 2012.....	4-24
Figure 4-13: Highway Freight Tonnage Flows, 2012.....	4-25
Figure 4-14: Year 2038 Forecasts of Louisiana Truck Tonnages by Traffic Type	4-26
Figure 4-15: Louisiana Navigable Waterway Tonnage, 2012.....	4-29
Figure 4-16: Forecast Waterborne Freight Tonnage by Direction, 2012 and 2038	4-32
Figure 4-17: Louisiana Freight Rail System	4-34
Figure 4-18: Short Lines Not Capable of 286,000-lb. Weights.....	4-36
Figure 4-19: Louisiana Rail Freight Tonnage by Direction, 2012	4-37
Figure 4-20: Rail Freight Tonnage Flows, 2012	4-39
Figure 4-21: Forecast Rail Freight Tonnage by Direction, 2012 and 2038	4-40
Figure 4-22: Louisiana Railroad Crossing Incidents, 2002 to 2011	4-41
Figure 4-23: Louisiana Aviation System	4-43
Figure 4-24: Origin of Airborne Freight Destined for Louisiana, 2012.....	4-47
Figure 4-25: Destination of Airborne Freight from Louisiana, 2012	4-48
Figure 4-26: Forecast Airborne Freight Tonnage by Direction, 2012 and 2038	4-49
Figure 4-27: Forecast Percentage of Louisiana Population, Age 65 and Over.....	4-52
Figure 4-28: Statewide Bicycle Crashes by Year, 2005 to 2014	4-56
Figure 4-29: Statewide Pedestrian Injuries by Year, 2005 to 2014.....	4-56
Figure 5-1: Forecast Pavement Condition at End of Analysis Period, Full Needs Analysis	5-6
Figure 5-2: Forecast Pavement Condition at End of Analysis Period, Goal Needs Analysis	5-7
Figure 5-3: Investment Needs and Forecast Bridge Condition, by Year (in millions of 2010 dollars, State System)	5-9

Figure 5-4: Allocation of System Improvements (in millions of 2010 dollars).....	5-18
Figure 5-5: Historic Capital Improvement Expenditures at Louisiana's System Airports (in millions of 2010 dollars)	5-19
Figure 6-1: U.S. Consumer Price Index, 1996 to 2011	6-7
Figure 6-2: Historic vs. Forecast Revenues	6-10
Figure 6-3: States with Local Option Sales Tax	6-15
Figure 6-4: States with Local Option Property Tax	6-15
Figure 6-5: States with Local Option Vehicle Fees.....	6-16
Figure 6-6: States with Local Option Bonding.....	6-16
Figure 6-7: States with Local Option Income Tax	6-17
Figure 6-8: States with Local Option Gas Tax.....	6-17
Figure 7-1: TIMED Program Projects.....	7-3
Figure 7-2: TIMED Program Projects + Completely Funded Megaprojects	7-4
Figure 7-3: Priority A Megaprojects + TIMED Program Projects + Completely Funded Megaprojects	7-7
Figure 7-4: Priority A and B Megaprojects + TIMED Program Projects + Completely Funded Megaprojects	7-10

List of Appendices

Legislative Questionnaire Summary	Appendix A
Public Telephone Survey Summary	Appendix B
Indian Tribe Consultation Summary	Appendix C
Visioning Workshop Summary.....	Appendix D
Policy Committee Meeting Summaries	Appendix E
Megaproject Priority Lists.....	Appendix F
Megaproject Advocate Questionnaire and Evaluation Form	Appendix G
Population and Employment Forecasts.....	Appendix H
Acknowledgements.....	Appendix I