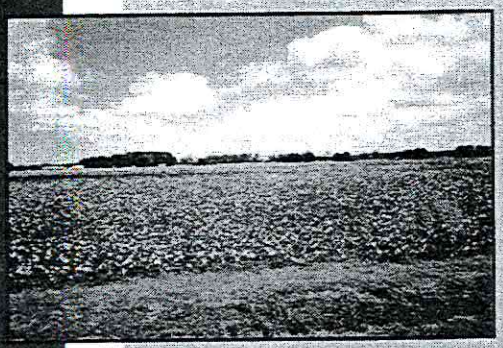
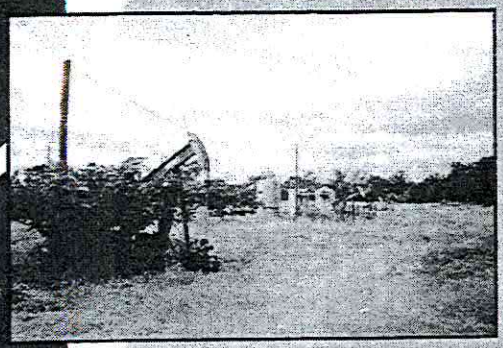
NORTH/SOUTH





Final Environmental Impact Statement

North-South Expressway

Interstate 220 to the Arkansas State Line Caddo Parish

E X P R E S S W A Y

FHWA-LA-EIS-99-01-F
State Project No. 700-09-0117
F.A.P. No. DPS-NHS-0021(003)

NORTH-SOUTH EXPRESSWAY
Interstate 220, Louisiana to the Arkansas State Line

Final Environmental Impact Statement

Submitted Pursuant to: 42 U.S.C. 4332(2)(c)

by the
U.S. Department of Transportation - Federal Highway Administration
and the
Louisiana Department of Transportation and Development

Cooperating Agencies:
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers – Vicksburg District
U.S. Fish and Wildlife Service
Arkansas State Highway and Transportation Department

1/3/2001
Date of Approval

Louisiana Department of Transportation and Development

1/3/01
Date of Approval

Federal Highway Administration

The following persons may be contacted for additional information concerning this document:

Vincent G. Russo Jr., P.E.
Environmental Engineer Administrator
Louisiana Department of Transportation and Development
P.O. Box 94245
Baton Rouge, LA 70804-9245
(225) 248-4190

William C. Farr
Program Operations Manager
Federal Highway Administration
Louisiana Division Office
7304 Flanders Drive, Suite A
Baton Rouge, LA 70808
(225) 757-7615

This project is a proposal to construct a four-lane, divided, fully controlled access highway facility located on new alignment between Interstate 220 in Shreveport, Louisiana and the Arkansas state line. The Selected Alignment of the proposed highway would be approximately 56 kilometers (35 miles) in length through Caddo Parish, Louisiana. Several alternatives were considered including the No-Action alternative.

TABLE OF CONTENTS

Title — Page

TABLE OF CONTENTS i

LIST OF TABLES v

LIST OF EXHIBITS vii

SUMMARY S-1

SECTION 1: PURPOSE AND NEED 1-1

1.1 PROJECT HISTORY 1-1
1.2 PROJECT DESCRIPTION 1-3
1.3 PROJECT PURPOSE 1-4
1.4 TRANSPORTATION NEED 1-6
1.4.1 Interstate System Linkage 1-6
1.4.2 Traffic Analysis 1-6
1.4.3 The Roadway Network and Social Services 1-10
1.4.4 Economic / Employment Demands 1-10
1.4.5 Intermodal Connectivity 1-11
1.4.6 Recreation Demand 1-11
1.5 SUMMARY 1-12

SECTION 2: ALTERNATIVES 2-1

2.1 THE STUDY PROCESS 2-1
2.2 THE NO-ACTION ALTERNATIVE 2-1
2.3 THE CORRIDOR STUDY 2-2
2.3.1 Summary Of 1995 Feasibility Study 2-6
2.3.2 Scoping Process 2-10
2.3.3 Environmental Inventory 2-12
2.3.4 Corridor Segments And Links Considered But Eliminated 2-15
2.3.5 Comparison Of Feasible Corridors 2-15
2.3.6 Corridor Decision-Making Process 2-17
2.3.7 Corridor Refinements 2-18
2.3.8 The Preferred Corridor For The North-South Expressway 2-22
2.4 ALIGNMENT STUDY 2-24
2.4.1 Alignments Developed 2-27
2.4.2 Public, Officials Committee, And Agency Involvement 2-28
2.4.3 Alignment Revisions 2-31
2.4.4 Evaluation Of Additional Alternatives – The Southern Terminus Study 2-31
2.4.5 Environmental Documentation and Public Hearings 2-38

SECTION 3: AFFECTED ENVIRONMENT 3-1

3.1 SOCIAL AND ECONOMIC ENVIRONMENT 3-1
3.1.1 Martin Luther King, Jr. Neighborhood 3-3
3.1.2 North Highland Neighborhood 3-4
3.2 ENVIRONMENTAL JUSTICE 3-4
3.2.1 Identification Of Minority And Low-Income Populations 3-4
3.2.2 Public Outreach 3-8
3.3 LAND USE 3-8
3.3.1 Agricultural Land 3-8
3.3.2 Oil And Gas Resources 3-10
3.4 WATER RESOURCES 3-12
3.4.1 Surface Water 3-12
3.4.2 Groundwater 3-14
3.4.3 Public Water Supply 3-16
3.5 FLOODPLAINS 3-17
3.6 WETLANDS 3-17
3.6.1 Wetland Methodology 3-17
3.6.2 Wetland Communities 3-18
3.6.3 Wetland Functions And Values 3-20
3.7 UPLAND COMMUNITIES 3-20
3.7.1 Upland Forests 3-20
3.7.2 Pastureland / Old Fields 3-22
3.7.3 Cropland 3-23
3.8 AQUATIC COMMUNITIES 3-23
3.9 THREATENED AND ENDANGERED SPECIES 3-24
3.9.1 State Species Of Special Concern 3-24
3.10 PUBLIC LANDS 3-25
3.11 CULTURAL RESOURCES 3-25
3.11.1 Prehistory And History Of The Study Area 3-25
3.12 AIR QUALITY 3-30
3.13 NOISE 3-31
3.13.1 Noise Sensitive Areas 3-32
3.13.2 Measured Noise Levels 3-32
3.14 HAZARDOUS MATERIALS 3-32

SECTION 4: ENVIRONMENTAL CONSEQUENCES 4-1

4.1 SOCIAL IMPACTS 4-1
4.1.1 Land Use Changes 4-1
4.1.2 Community Changes 4-4
4.1.3 Safety 4-7
4.1.4 Relocations 4-8
4.2 ENVIRONMENTAL JUSTICE 4-11
4.2.1 Methodology 4-12
4.2.2 Residential Minority And Low-Income Impacts 4-13
4.2.3 Minority Business Relocations 4-15
4.2.4 Summary Of Environmental Justice Considerations 4-15
4.3 ECONOMIC IMPACTS 4-15

4.3.1 Employment Opportunities 4-15
4.3.2 Secondary Economic Impacts 4-17
4.4 VISUAL 4-18
4.4.1 Views Of The Proposed Highway 4-18
4.4.2 Views From The Proposed Highway 4-18
4.5 OIL AND GAS RESOURCES 4-19
4.6 WATER QUALITY 4-19
4.6.1 Surface Water Resources 4-20
4.6.2 Groundwater 4-22
4.6.3 Public Water Supply 4-41
4.7 FLOODPLAINS 4-41
4.7.1 Floodplain Impacts 4-41
4.7.2 Secondary Floodplain Impacts 4-42
4.8 WETLANDS 4-42
4.8.1 Wetland Impacts 4-43
4.8.2 Wetland Finding 4-45
4.8.3 Secondary Wetland Impacts 4-45
4.8.4 Wetland Mitigation Requirements 4-45
4.9 NATURAL COMMUNITIES 4-45
4.10 THREATENED AND ENDANGERED SPECIES 4-47
4.11 PUBLIC LANDS 4-48
4.12 FARMLANDS 4-53
4.13 CULTURAL RESOURCES 4-54
4.13.1 Cultural Resource Efforts For Draft EIS 4-54
4.13.2 Cultural Resource Efforts for Final EIS 4-54
4.13.3 Future Cultural Resource Efforts 4-56
4.14 AIR QUALITY 4-56
4.14.1 Methodology 4-56
4.14.2 Air Quality Impacts 4-57
4.15 NOISE 4-58
4.15.1 Prediction Of Traffic Noise Levels 4-61
4.15.2 Traffic Noise Impacts 4-61
4.15.3 Noise Abatement 4-68
4.15.4 Determination Of Reasonableness And Feasibility 4-70
4.16 HAZARDOUS MATERIALS 4-76
4.17 ENERGY 4-77
4.18 CONSTRUCTION IMPACTS 4-77
4.18.1 Air Quality Construction Impacts 4-77
4.18.2 Construction Noise 4-78
4.18.3 Water Quality Construction Impacts 4-78
4.18.4 Maintenance and Control of Traffic 4-78
4.18.5 Public Health and Safety 4-79
4.18.6 Other Construction Impacts 4-79
4.19 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND LONG-TERM PRODUCTIVITY 4-79
4.20 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES 4-79

SECTION 5: LIST OF PREPARERS 5-1

SECTION 6: DISTRIBUTION OF STATEMENT 6-1

SECTION 7: COORDINATION AND PUBLIC INVOLVEMENT 7-1

7.1 1995 FEASIBILITY STUDY 7-1
7.2 SCOPING PROCESS 7-1
7.3 CORRIDOR STUDY 7-1
7.4 ALIGNMENT STUDY 7-2
7.5 SOUTHERN TERMINUS STUDY 7-2
7.6 ENVIRONMENTAL DOCUMENTATION 7-3
7.7 PUBLIC NOTIFICATION METHODS 7-3
7.8 TOPICS OF COMMENT LETTERS ON THE DRAFT EIS 7-3

SECTION 8: REFERENCES 8-1

APPENDIX

Level of Service Definitions ..... Appendix A

Agency Correspondence ..... Appendix B

Section 404 Permit Application ..... Appendix C

Farmland Conversion Impact Rating Form ..... Appendix D

Modeled Noise Locations ..... Appendix E

DOTD Highway Traffic Noise Policy ..... Appendix F

DOTD Acquisition of Right of Way and Relocation Assistance ..... Appendix G

LIST OF TABLES

TABLE S-1 IMPACT SUMMARY S-9
TABLE 1-1 DESIGN CRITERIA 1-3
TABLE 1-2 LEVELS OF SERVICE ON EXISTING ROADWAYS 1-8
TABLE 2-1 NORTH-SOUTH EXPRESSWAY SOUTHERN TERMINUS EVALUATION 2-37
TABLE 3-1 POPULATION DATA FOR THE STUDY AREA 3-2
TABLE 3-2 POPULATION CHARACTERISTICS FOR THE STUDY AREA 3-7
TABLE 3-3 STUDY AREA SURFACE WATER ASSESSMENT 3-15
TABLE 3-4 STATE SPECIES OF SPECIAL CONCERN WITHIN THE PREFERRED CORRIDOR 3-25
TABLE 3-5 NATIONAL AMBIENT AIR QUALITY STANDARDS 3-31
TABLE 3-6 MEASURED NOISE LEVELS WITHIN STUDY AREA 3-35
TABLE 3-7 POTENTIAL HAZARDOUS MATERIALS SITES – WITHIN THE PREFERRED CORRIDOR 3-37
TABLE 4-1 SUMMARY OF LAND USE IMPACTS 4-2
TABLE 4-2 RELOCATION SUMMARY 4-9
TABLE 4-3 POTENTIAL NUMBER OF IMPACTED EMPLOYEES 4-10
TABLE 4-4 CURRENT AVAILABLE HOUSING 4-11
TABLE 4-5 POPULATION CHARACTERISTICS WITHIN THE PREFERRED CORRIDOR 4-12
TABLE 4-6 PERCENTAGE OF MINORITY AND LOW-INCOME RELOCATIONS COMPARED TO REFERENCE POPULATIONS 4-14
TABLE 4-7 ESTIMATED EMPLOYMENT IMPACTS OF HIGHWAY CONSTRUCTION 4-16
TABLE 4-8 PRODUCING OIL AND GAS WELL IMPACTS 4-19
TABLE 4-9 FLOODPLAIN IMPACTS 4-41
TABLE 4-10 WETLAND IMPACTS 4-43
TABLE 4-11 NATURAL COMMUNITY IMPACTS 4-46
TABLE 4-12 PAUL LYNCH PARK IMPACTS 4-48
TABLE 4-13 FARMLAND IMPACTS 4-53
TABLE 4-13.1 A SUMMARY OF SITES WITHIN THE SELECTED ALIGNMENT 4-55
TABLE 4-14 PREDICTED HIGHEST 1-HOUR CO CONCENTRATIONS 4-57
TABLE 4-15 DOTD NOISE ABATEMENT CRITERIA (NAC) 4-59
TABLE 4-16 COMMON INDOOR & OUTDOOR NOISE LEVELS 4-60
TABLE 4-17 EXISTING AND PREDICTED (YEAR 2020) SOUND LEVELS 4-62
TABLE 4-18 NOISE IMPACT COMPARISON 4-68
TABLE 4-19 PRELIMINARY LOCATIONS WARRANTING NOISE ABATEMENT CONSIDERATION 4-73
TABLE 7-1 PUBLIC MEETINGS 7-5
TABLE 7-2 TECHNICAL ADVISORY COMMITTEE (TAC), SHREVEPORT AND RURAL OFFICIALS COMMITTEE MEETINGS 7-6
TABLE 7-3 AGENCY MEETINGS 7-6
TABLE 7-4 SHREVEPORT OFFICIALS COMMITTEE 7-7
TABLE 7-5 RURAL OFFICIALS COMMITTEE 7-8
TABLE 7-6 PUBLIC HEARINGS 7-8
TABLE 7-7 SUMMARY OF COMMENTS RECEIVED ON DRAFT EIS 7-9
TABLE 7-8 SUMMARY OF AGENCY COMMENTS AND RESPONSES ON DRAFT EIS 7-13

LIST OF EXHIBITS

EXHIBIT S-1 SHREVEPORT TO KANSAS CITY HIGH PRIORITY CORRIDOR S-3
EXHIBIT S-2 ALIGNMENT LOCATIONS AND THE SELECTED ALIGNMENT S-5
EXHIBIT 1-1 STUDY AREA 1-5
EXHIBIT 1-2 TYPICAL SECTION 1-7
EXHIBIT 1-3 INTERSTATE SYSTEM LINKAGE 1-9
EXHIBIT 2-1 STUDY PROCESS 2-3
EXHIBIT 2-2 CORRIDOR AND ALIGNMENT STUDY METHODOLOGY 2-5
EXHIBIT 2-3 ORIGINAL CORRIDOR LOCATIONS 2-7
EXHIBIT 2-4 CORRIDOR COMPARISONS 2-13
EXHIBIT 2-5 ORIGINAL CORRIDOR LOCATIONS 2-19
EXHIBIT 2-6 REFINED CORRIDOR COMPARISONS 2-21
EXHIBIT 2-7 PREFERRED CORRIDOR 2-25
EXHIBIT 2-8 PRELIMINARY ALIGNMENTS 2-29
EXHIBIT 2-9 REVISED STUDY PROCESS 2-33
EXHIBIT 2-10 SOUTHERN TERMINUS STUDY 2-35
EXHIBIT 2-11 ALIGNMENT LOCATIONS 2-41
EXHIBIT 3-1 NEIGHBORHOODS AND CENSUS TRACTS 3-5
EXHIBIT 3-2 TYPICAL FORESTED WETLANDS 3-21
EXHIBIT 3-3 NOISE MEASUREMENT LOCATIONS 3-33
EXHIBIT 3-4 HAZARDOUS MATERIALS LOCATIONS 3-39
EXHIBIT 4-1 WETLAND AND FLOODPLAIN IMPACTS 4-23
EXHIBIT 4-2 SELECTED ALIGNMENT INTERCHANGE CONCEPT 4-49
EXHIBIT 4-3 LINE 4 – INTERCHANGE CONCEPT 4-51