

FINAL PROJECT REPORT

VOLUME I

FAI ROUTE 270 (I-270)

SECTION 60B-1

MADISON COUNTY, IL & ST. LOUIS, MO



Replacement of S.N. 060-0035 carrying I-270 over the Mississippi River
connecting Madison County, IL to St. Louis, MO

Job No. P-98-001-15

Contract No. 76J90

Prepared for



District 8, Collinsville
Bureau of Program Development

July 9, 2018

TABLE OF CONTENTS

VOLUME I

FORMS IN THE BEGINNING OF THE PROJECT REPORT

- Phase I Report Approval (BDE 1201)
- Phase I Checklist (BDE 1210)
- Categorical Exclusion Determination and Approval (BDE 2301)

FOREWORD 1

1.0: NEED FOR IMPROVEMENT 1

 1.1: Project Location and Termini..... 1

 1.2: Description of Existing Conditions 2

 1.2.1: Land Use 2

 1.2.2: Existing Cross Section 2

 1.3: Operational and Safety Analyses 3

 1.3.1: Safety..... 3

 1.3.2: Pavement Condition..... 5

 1.3.3: Operational Concerns 5

 1.3.4: Existing Geometry and Profile 5

 1.3.5: Structural Deficiencies..... 6

 1.3.6: Local Interest 6

 1.3.7: Relationship to Other Projects..... 6

 1.4: Project Purpose 7

2.0: DESCRIPTION OF PROPOSED IMPROVEMENTS 7

 2.1: Introduction 7

 2.2: Design Criteria Utilized 7

 2.3: Geometric Improvements 8

 2.3.1: Proposed Cross Sections..... 8

 2.3.2: Intersections..... 8

 2.3.3: Vertical Alignment 8

 2.3.4: Horizontal Alignment 8

 2.4: Preliminary Pavement Design / Rehabilitation 9

 2.5: Pavement Drainage..... 9

 2.6: Design Exceptions..... 9

 2.7: Right of Way 9

 2.7.1: Acquisition Required 9

 2.7.2: Temporary Easements Required..... 10

 2.8: Structures 10

 2.8.1: SN 060-0035..... 10

 2.8.1.1: Feature Carried..... 10

2.8.1.2: Feature Crossed and Adjacent Land Use.....	10
2.8.1.3: Structure Number.....	10
2.8.1.4: Existing Structural Deficiencies	10
2.8.1.5: Proposed Scope of Work and Cross Section.....	11
2.8.1.6: Vertical Clearances	11
2.8.1.7: Foundation Borings	12
2.8.1.8: BCR Approvals	12
2.8.2: SN A1024 & A1025	12
2.8.2.1: Feature Carried.....	12
2.8.2.2: Feature Crossed and Adjacent Land Use.....	12
2.8.2.3: Structure Number.....	12
2.8.2.4: Existing Structural Deficiencies	12
2.8.2.5: Proposed Scope of Work and Cross Section.....	12
2.8.2.6: Vertical Clearances	13
2.8.2.7: Foundation Borings	13
2.8.2.8: BCR Approval	13
2.8.3: SN 060-2013.....	13
2.8.3.1: Feature Carried.....	13
2.8.3.2: Feature Crossed and Adjacent Land Use.....	13
2.8.3.3: Structure Number.....	13
2.8.3.4: Existing Structural Deficiencies	13
2.8.3.5: Proposed Scope of Work and Cross Section.....	13
2.8.3.6: Vertical Clearances	13
2.8.3.7: Foundation Borings	13
2.8.3.8: BCR Approvals	14
2.8.4: Alternative Development	14
2.8.4.1: Concept Alternates	14
2.8.4.2: Alternates	14
2.8.4.3: Preferred Alternate.....	15
2.8.4.4: Value Engineering Study.....	16
2.9: Traffic Signal Modernization / Installation	16
2.10: Lighting	16
2.11: Sidewalk/ADA Requirements	16
2.12: Bikeways / Trails.....	16
2.13: Pedestrian Overpass / Subways / Other Facilities	17
2.14: Mass Transportation.....	17
2.15: Utility Conflicts	17
2.16: Encroachments.....	18
2.17: Mail Delivery	18

2.18: Landscape / Roadside Development	18
2.19: Construction Site Stormwater Pollution Control	19
2.20: At-Grade Railroad Crossings.....	19
2.21: Surveillance	19
2.22: Pump Stations	19
2.23: Retaining Walls.....	19
2.24: Public Educational Facility Entrances.....	19
3.0: ENVIRONMENTAL RESOURCE SUMMARY	19
3.1: Special & Hazardous Waste.....	20
3.2: Biological Resources	20
3.2.1: Wetlands	20
3.2.2: Coordination with the U.S. Fish & Wildlife Service (USFWS) and the Illinois Department of Natural Resources (IDNR)	20
3.2.3: Trees.....	20
3.3: Cultural Resources	20
3.3.1: Tribal Coordination.....	20
3.3.2: Archaeology	21
3.3.3: Construction Vibration	21
3.4: Air Quality	21
3.5: Noise.....	21
3.6: Floodplain	22
3.7: Permits.....	22
4.0: PUBLIC INVOLVEMENT	22
4.1: Public Meetings	23
4.2: Community Advisory Group (CAG) Meetings	23
4.3: Stakeholder Meetings.....	24
4.4: Newsletters	24
4.5: Website.....	24
5.0: TRANSPORTATION MANAGEMENT PLAN (TMP) & RECOMMENDATIONS	25
6.0: ESTIMATE OF COSTS.....	25
7.0: COMMITMENTS.....	26
7.1: Environment.....	26
7.2: Other Agencies.....	27
8.0: PROJECT COORDINATION	27

TABLES

Table 1: Crashes By Type and Year

Table 2: Crash Severity Descriptions

Table 3: Level of Service Descriptions

Table 4: I-270 Project Area Existing & Projected (2045) LOS

Table 5: Right Of Way

Table 6: Utilities

Table 7: Stakeholder Meetings

EXHIBITS

Exhibit 1: Study Limit Comparison Map

Exhibit 2: Location Map

Exhibit 3: Existing Conditions

Exhibit 4: Typical Cross Sections (Existing & Proposed)

Exhibit 5: Photographs

Exhibit 6: Traffic Volume & Crash Data

Exhibit 7: Adjacent Projects

Exhibit 8: Proposed Conditions

Exhibit 9: Utility Conflicts

Exhibit 10: Erosion and Sediment Control Analysis Form & Soils Report

Exhibit 11: Wetland & Floodplain Map

Exhibit 12: Cost Estimate

APPENDICES

VOLUME II

A. Bicycle Accommodation Coordination

- Bicycle & Pedestrian Accommodation Coordination Concurrence Memo
- Bicycle & Pedestrian Accommodation Analysis
- Coordination with Great Rivers Greenway
- Letters sent to Bike Agencies January 2017

B. Environmental Correspondence

- Special Waste Clearance Memo
- PESA Review
- Missouri Special Waste Coordination
- Wetland Impact Evaluation
- Wetland Determination Report
- Avian Survey Report
- Mammal Survey Report
- IDNR Endangered Species Consultation Letter
- Natural Resource Review
- USFWS Endangered Species Consultation Letter and IPaC Review
- IDNR EcoCAT Review
- MoDOT Environmental & Historic Preservation Impacts to T&E Species in MO
- Missouri Department of Conservation Natural Heritage Review Report
- Conditional No Adverse Effect Memo for Cultural Resources
- Conditional No Adverse Effect BDE Letter to IL SHPO
- Archaeological Survey Email from ISAS to IDOT
- Archaeological Resources Memo
- Property Avoidance Memo
- Miami Tribe of Oklahoma Email
- Osage Nation Email
- MDNR Cultural Resource Survey Letter for the MoDOT I-270 North EA
- Noise Memorandum (Horner & Shifrin)
- Noise Memorandum (From Huff & Huff to Horner & Shifrin)
- Meeting minutes with IDOT-BDE, USFWS, and INHS
- IDOT BDE emails regarding bats, mist netting, and pallid sturgeon
- Field Memorandum
- USACE EA Emails

C. Project Coordination

- IDOT/FHWA Environmental Processing Meeting Minutes
- MoDOT Coordination Meeting Minutes
- FHWA Stakeholder Pre-Design Charrette Meeting Minutes
- River Hydraulics Analysis Meeting Minutes
- Charrette Planning Meeting Notes/Minutes Email
- Monitoring Meeting Minutes (10-27-16)
- Post Design Charrette Meeting Minutes
- IDNR Conference Call Summary regarding No Rise
- Monitoring Meeting Minutes (12-8-16)
- MoDOT Riverview Drive Coordination Meeting Minutes
- PSG Meeting – USACE EA Requirement for Section 408 Permission Meeting Minutes
- Monitoring Meeting Minutes (2-2-17)
- Monitoring Meeting Minutes (4-5-17)
- Discussion of Shoulder Alternatives & Safety Analysis Meeting Minutes
- Discussion of Alternative Analysis and Preliminary Findings
- Coordination with MoDOT Memo
- Discussion of Alternative Analysis & Findings Meeting Minutes
- MoDOT Project Update Meeting Minutes
- IDOT Letter to MoDOT Requesting Concurrence on the Selected Alternative
- Monitoring Meeting Minutes (8-22-17)
- MoDOT Letter to IDOT regarding Concurrence on the Selected Alternative
- Executive Summary (8-28-17)
- IDOT Letter to MoDOT providing the Executive Summary
- Geometrics Meeting Minutes
- Typical Sections Meeting Minutes
- Monitoring Meeting Minutes (12-2-17)
- USCG Email Coordination regarding Low Steel
- Monitoring Meeting Minutes (2-12-18)
- Great Rivers Greenway (GRG) Meeting Minutes (2-16-18)
- Hydraulic Report Memo (3-14-18)
- Final Revised Hydraulic Report Submittal Email (5-29-18)
- GRG Section 4(f) Coordination
- IDOT/Alderwoman Christine Ingrassia Email (6-22-18)
- MoDOT/Alderwoman Christine Ingrassia Email (6-25-18)
- Hydraulic Report Approval Memo (6-29-18)

VOLUME III

- D. Design Charrette Meeting Minute
- E. Value Engineering Report

TECHNICAL REPORTS

VOLUME IV

- A. Crash Analysis Report
- B. Traffic Analysis
- C. Safety Shoulder Technical Memorandum

VOLUME V

- D. Location Drainage Study

VOLUME VI

- E. Bridge Condition Report (BCR)
- F. Existing Substructure Evaluation Technical Memorandum
- G. Proposed Bridge Inspectability Technical Memorandum
- H. Existing Pier Removal Technical Memorandum
- I. Public Involvement Record

VOLUME VII

- J. Transportation Management Plan (TMP)
- K. Structure Typical Section Technical Memorandum

ACRONYMS

ADT:	Average Daily Traffic
AASHTO:	American Association of State Highway Transportation Officials
BBS:	Bureau of Bridges and Structures
BCR:	Bridge Condition Report
BDE:	Bureau of Design & Environment
BOL:	Bureau of Land
CAG:	Community Advisory Group
CERCLIS:	Comprehensive Environmental Response, Compensation, and Liability Information System
CSS:	Context Sensitive Solutions
DOT:	Department of Transportation
EA:	Environmental Assessment
EcoCAT:	Ecological Compliance Assessment Tool
EPG:	Energy Policy Guide
ESR:	Environmental Survey Request
FHWA:	Federal Highway Administration
HCS:	Highway Capacity Software
HSSD:	Horizontal Stopping Sight Distance
Ibat:	Indiana Bat
IDOT:	Illinois Department of Transportation
IDNR:	Illinois Department of Natural Resources
ICW:	Inspection of Completed Works
IEPA:	Illinois Environmental Protection Agency
INHS:	Illinois Natural History Survey
IPaC:	Information for Planning and Consultation
ISAS:	Illinois State Archaeology Survey
LOS:	Level of Service
MDNR:	Missouri Department of Natural Resources
MEPRD:	Metro East Parks & Recreation District
MoDOT:	Missouri Department of Transportation
MSD:	Metropolitan St. Louis Sewer District
NPDES:	National Pollutant Discharge Elimination System
NHS:	National Highway System
NLEB:	Northern Long-Eared Bat
NPDES:	National Pollutant Discharge Elimination System
NRHP:	National Register of Historic Places
NRR:	Natural Resource Review

PESA:	Preliminary Environmental Site Assessment
RCRA:	Resource and Recovery Act
ROW:	Right Of Way
SAFETEA-LU	Safe Accountable Flexible Efficient Transportation Equity Act-A Legacy for Users
SWIC:	Southwestern Illinois College
SWPPP:	Stormwater Pollution Prevention Plan
TMP:	Traffic Management Plan
USACE:	United States Army Corps of Engineers
USCG:	United States Coast Guard
USFWS:	United States Fish & Wildlife Service
VPD:	Vehicles Per Day
WIE:	Wetland Impact Evaluation



Key Route: FAI 270 Marked Route/Road Name: Interstate 270

Job No.: P-98-001-15 Contract No.: 76J90

Section: 60B-1 Project Length: 2.54 Mi

PPS No.: 8-82222-0000 County(ies): Madison

Location/Limits: Interstate 270 from west of Riverview Drive in St. Louis County, MO to west of new Chain of Rocks Canal Bridge in Madison County, IL

General Description of Existing Facility:

Need for Proposed Improvement:

Scope of Project: [] New Construction [X] Reconstruction [] 3R [] 3P [] SMART [] Other

General Description of Proposed Improvement: Replacing SN060-0035 with a new dual structure carrying I-270 over the Mississippi River. New roadway construction with future 6 lane capacity and full width shoulders. New interchange at Riverview Drive in Missouri, compliant with approved Missouri EA.

Environmental Processing: [] EIS [] EA [X] Federal Approved CE [] State Approved CE [] Other

Approximate Amount of ROW to be Purchased: 10 Parcels Totalling 30.72 Acres.

Number of Businesses 0 and Residences 1 to be Acquired. ROW Cost: \$ 11.3 million (year)

Estimated Program Cost: \$ 225,000,000 (in FY 19-24) Fund Type: Federal

Construction Cost: \$ 222,102,065 Utility Reloc. Cost: \$ 500,000 (year) Consultant PE Cost: \$ 6,500,000

Design Exceptions: [] Level One Required? [] Yes [X] No [] Level Two Required? [] Yes [X] No [] If yes, note date approved: Type of Public Involvement Activity: [] Public Hearing Offered? [] Yes [X] No [] Informational Meeting Held? [X] Yes [] No [] Property Owners Contacted? [X] Yes [] No

Regional Design Approval [Signature] IDOT Regional Engineer Signature Date: 7/11/18

Section I. Potential for Unusual Circumstances List for Categorical Exclusion (CE) Projects

Will the project:

1. Through consultation with the Illinois Department of Natural Resources (IDNR) under the Illinois Endangered Species Act, require an Incidental Take Authorization?
 Yes No If yes, see Section II-A(1)
2. Through Section 7 of the Federal Endangered Species Act consultation, result in a finding of "may affect, likely to adversely affect" a federally listed or candidate species, or proposed or designated critical habitat?
 Yes No If yes, see Section II-A(2)
3. Involve State designated Nature Preserves, areas listed on the Illinois Natural Area Inventory, and/or Land and Water Reserves?
 Yes No If yes, see Section II A(4)
4. Exceed the IDNR threshold for an increase in 100-year flood water surface elevations or has potential for a "significant encroachment" to floodplains, as defined in Executive Order 11988?
 Yes No If yes, see Section II A(7)
5. Involve impacts to a stream listed on the National Park Service's National Rivers Inventory?
 Yes No If yes, see Section II A(10)
6. Result in an "adverse effect" finding to a historic property, as defined in 36 C.F.R. 800.16(l)?
 Yes No If yes, see Section II-B
7. Require the use of properties as defined and protected by Section 4(f) of the Department of Transportation Act, 49 U.S.C. 303 that cannot be documented with either an FHWA *de minimis* determination or a programmatic Section 4(f) evaluation?
 Yes No If yes, see Section II-B(1)
8. Require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act of 1965 or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property?
 Yes No If yes, see Section II B(2)
9. Define as a "Type I project" per 23 C.F.R. 772.5 and therefore require a noise analysis?
 Yes No If yes, see Section II-E
10. Involve impacts that would require an Individual Section 404 Permit from the U.S. Army Corps of Engineers or involve stream channelization or stream relocations?
 Yes No If yes, see Section II-I(3)
11. Require a permit from U.S. Coast Guard under Section 9 of the Rivers and Harbors Act of 1899?
 Yes No If yes, see Section II I(3)
12. Require an individual Water Quality Certification from the Illinois Environmental Protection Agency (IEPA)?
 Yes No If yes, see Section II I(1)
13. Require the use of a temporary road, detour or ramp closure, unless the use of such facilities satisfies the following conditions, as applicable?
 - a) Provisions are made for access by local traffic and so posted,
 - b) Businesses dependent on through-traffic will not be adversely affected,
 - c) To the extent possible, there is no interference with any local special event or festival,
 - d) There is no substantial change to the environmental consequences of the action, and
 - e) There is no substantial controversy associated with such facilities.
 Yes No If yes, see Section II-J

14. Require substantial changes in access, access control, or travel patterns?
 Yes No See
15. Have potential for controversy on environmental grounds as determined by FHWA, or inconsistency with Federal, State, or local requirements relating to the environment or planning?
 Yes No If yes, see
16. Require one or more residential or business relocations and/or the acquisition of more than 10 acres (4 hectares) total for a non-linear improvement (spot improvement, e.g., bridge, intersection) or the acquisition of more than 3 acres per mile (0.75 hectares per kilometer)?
 Yes No If yes, see Section 2.7 of Project Report

Section II. Environmental and Engineering Issues

The following section serves to keep track of Phase I development documentation and coordination and can be presented during coordination meetings.

Did the project require the submittal of an Environmental Survey Request (Section 27-1)?

Yes No

A. Natural Resources

1. State Endangered Species Act Compliance (Sections 26-9 and 27-1):

BDE biological sign-off obtained?

Yes No

Natural Resource Review Memorandum sent to IDNR?

Yes No

IDNR Response received?

Concur Surveys required

Incidental Take Authorization granted by IDNR?

Yes No

Commitments required?

Yes No

Describe commitments: To protect the listed Pallid Sturgeon during the spawning season:

1. No explosives shall be used during demolition of the existing structures or during construction of the new structures.
2. During demolition, the superstructure shall not be dropped into the river.
3. To avoid the spawning season for the Pallid Sturgeon, piles shall not be driven between April 15 and June 30.
4. To protect the listed Indiana Bat and Northern Long-Eared Bat trees 3 inches or greater in diameter at breast height shall not be cleared April 1 through September 30.

2. Federal Endangered Species Act compliance (Section 26-9).

BDE Biological Sign-off?

Yes No

Natural Resource Review & U.S. Fish and Wildlife Services (USFWS) response?

Yes No

Commitments?

Yes No

Biological Assessment and Biological Opinion?

Yes No

Conservation Measures?

Yes No

3. Natural Areas and Land and Water Reserves (Sections 26-9 and 26-19).

Project impacts a Natural Area or a Land and Water Reserve?

Yes No

Natural Resource Review memorandum and IDNR Response?

Yes No

Land and Water Reserve finding?

Yes No

Commitments required?

Yes No

Describe commitments:

Mitigation?

Yes No

Describe mitigation:

4. Nature Preserves (Section 27-1).

Project involves a Nature Preserve?

Yes No

Coordination with the Nature Preserves Commission required?

Yes No

Commitments?

Yes No

Describe commitments:

5. Tree, Forest, Savanna, and Prairie Resources (Section 26-17 and D&E-18).

Project impacts areas of forest larger than 20 acres (8 hectares) in size?

Yes No

Project impacts the woody riparian corridor of a stream?

Yes No

Project involves tree removal in the urban or suburban area?

Yes No

Project involves prairie or savanna areas?

Yes No

Natural Resource Review memorandum and IDNR Response received?

Yes No

Tree Assessment Report?

Yes No

Commitments required?

Yes No

Describe commitments:

Trees three (3) inches or greater in diameter at breast height shall not be cleared April 1 through September 30. The trees shall be replaced in accordance with IDOT's D&E-18 policy "Preservation and Replacement of Trees."

Mitigation?

Yes No

Describe mitigation:

6. Coordination with U.S. Forest Service/USFWS for Federal Lands (Section 22-5).

Required for involvement with Federal Lands (e.g., Shawnee National Forest, Midewin National Tallgrass Prairie).

USFS/USFWS response regarding Federal Lands?

Yes No

7. Floodplains (Section 26-7 of BDE Manual and Section 3-004 of IDOT Drainage Manual).

Project occurs in the 100-year floodplain?

Yes No

Floodplain Encroachment Studies?

Yes No

Is a floodplain finding required?

Yes No

8. Wetlands (Section 26-8).

Were delineations performed?

Yes No

Does project affect wetlands?

Yes No

Wetland Impact Evaluation (WIE) form submitted?

Yes No

Has a compensation plan been approved?

Yes No

9. Surface Waters and Aquatic Habitat (Section 26-19).

Project affects stream classified as navigable?

Yes No

Project affects stream designated as a Biologically Significant Stream?

Yes No

Project affects stream rated as "A" or "B" for Diversity or Integrity?

Yes No

Project affects stream designated as an Illinois Natural Area?

Yes No

Project affects stream designated as Advanced Identification (ADID)?

Yes No

Project affects stream that contains endangered or threatened species?

Yes No

Project affects a listed Wild and Scenic River?

Yes No

Commitments required?

Yes No

Describe commitments: To protect the Pallid Sturgeon during the spawning season:

1. No explosives shall be used during demolition of the existing structures or during construction of the new structures.
2. During demolition, the superstructure shall not be dropped into the river.
3. To avoid the spawning season for the Pallid Sturgeon, piles shall not be driven between April 15 and June 30.

Stream Mitigation?

Yes No

Describe mitigation:

10. Nationwide Rivers Inventory (NRI) (Section 26-20).

Does project involve bridge work over a stream segment listed in NRI?

Yes No

If no, no need to continue.

Is a new bridge being proposed over this listed segment?

Yes No

If the bridge is existing, does the bridge require expansion or a new alignment?

Yes No

Does the project require new rip-rap, bank stabilization, or an erosion control structure?

Yes No

Is dredging or filling required?

Yes No

If yes to any of the above, coordination with the National Park Service is required due to the potential for adverse effect, and commitments may be needed.

Describe commitments:

B. Cultural Resources

1. Section 4(f) Evaluation (Section 26-2).

FHWA confirms the property and the proposed use are subject to Section 4(f)?

Yes No

Proposed use qualifies for a *de minimis* impact determination?

Yes No

Proposed use qualifies for a programmatic evaluation?

Yes No

Proposed use requires an individual Section 4(f) evaluation?

Yes No

2. Section 6(f) Land Conversion Request (Section 26-3).

Does project involve lands with Land and Water Conservation (LAWCON) funds?

Yes No

Will a conversion of the LAWCON funds be required?

Yes No

Has a conversion request been submitted?

Yes No

3. Open Space Land Acquisition and Development (OSLAD) Land Conversion Request (Section 26-4).

Does project involve lands with OSLAD funds?

Yes No

Will a conversion of the OSLAD funded lands be required?

Yes No

Has a conversion request been submitted?

Yes No

4. Historic Act Compliance (Section 26-5).

Are archaeological resource(s) present?

Yes No

Will historic building(s) be affected?

Yes No

Historic Bridge(s) affected?

Yes No

Historic District(s)?

Yes No

BDE Cultural Resources clearance granted?

Yes No If yes, date: February 14, 2018

State Historic Preservation Officer (SHPO) clearance granted?

Yes No If yes, date:

Commitments required?

Yes No

Describe commitments: To address potential construction vibration impacts to the historic Old Chain of Rocks Bridge, a geotechnical investigation shall be included in Phase II of the project that will include a risk analysis of construction induced vibrations on nearby transportation structures. If any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. The Osage Nation Historic Preservation Office has requested a copy of the planned cultural reconnaissance survey report, if one is deemed necessary.

Memorandum of Agreement?

Yes No

C. Water Quality (Section 26-21)

1. Impaired (303(d)) Streams.

Will the project affect any impaired (303(d)) listed streams?

Yes No

Stream name and impairment: The Mississippi River is impaired for fish consumption due to mercury and polychlorinated biphenyls. This project will not add to the impairment.

2. Total Maximum Daily Load (TMDL).

Project affects a waterbody with a draft/final TMDL?

Yes No

Project will comply with TMDL?

Yes No

Project will contribute to exceeding the TMDL threshold?

Yes No

If yes, coordination with IEPA is required.

Describe coordination:

D. Groundwater (Section 26-22)

1. Karst Topography.

Project is within a karst region?

Yes No

Project affects karst feature(s)?

Yes No

Are measures needed to minimize impacts to karst feature(s)?

Yes No

Discuss measures:

Commitments required?

Yes No

Describe commitments:

2. Ground Water Impacts

Will surface water pollution from project impact ground water?

Yes No

Commitments required?

Yes No

Described commitments:

3. Sole Source Aquifer (Section 26-22)

Project occurs within Mahomet sole source aquifer Project Review Area?

Yes No

Commitments required?

Yes No

Describe commitments:

4. Potable Water Supply Wells

Will the project create any new potential routes for groundwater pollution (e.g., dry wells, borrow pits) or any new potential sources of groundwater pollution (e.g., storage facilities for bulk road oil or de-icing salt)?

Yes No

If no, the following statement applies:

This project will not create any new potential "routes" for groundwater pollution or any new potential "sources" of groundwater pollution as defined in the Illinois Environmental Protection Act, 415 ILCS 5/3, et seq. Accordingly, the project is not subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells as set forth in 415 ILCS 5/14, et seq.

E. Agricultural Resources (Section 26-10)

1. Will the project affect agricultural resources that are located in unincorporated (city or village) lands?

Yes No

2. Is coordination with National Resource Conservation Service (NRCS) required (for federally funded projects)?

Yes No

If yes, NRCS Form AD-1006, Farmland Conversion Impact Rating (available online) is required.

If no, the following statement applies:

The impact of this project on farmland conversion has been evaluated in accordance with the requirements of the US Natural Resources Conservation Service (NRCS). The project will convert 3 acres or less of farmland per mile (0.75 hectares or less of farmland per kilometer) and the conversion will not result in more than minor impacts. Accordingly, the project conforms to the general Form AD-1006 prepared by NRCS. Therefore, further coordination with NRCS on this project will not be necessary.

Note: Projects that require coordination with NRCS will normally also require coordination with Illinois Department of Agriculture (IDOA).

3. Is IDOA coordination required (for State funded projects)?

Yes No

F. Noise (Section 26-6)

Is the project a Type I project?

Yes No

Has Noise Analysis been performed?

Yes No

If yes, describe the results of the analysis:

Is the project a Type III project?

Yes No

If yes, the following applies:

The referenced project meets the criteria for a Type III project established in 23 C.F.R. 772. Therefore, the proposed project requires no traffic noise analysis or abatement evaluation. Type III projects do not involve added capacity, construction of new through lanes, changes in the horizontal or vertical alignment of the roadway, or exposure of noise sensitive land uses to a new or existing highway noise source.

Will a noise wall be required?

Yes No

If yes, the following statement applies:

Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasible and reasonable criteria are identified in table reference table ID. If it subsequently develops during final design that constraints not foreseen in the preliminary design or public input substantially change, the abatement measures may need to be modified or removed from the project plans. A final decision of the installation of the abatement measure(s) will be made upon completion of the project's final design and the public involvement process.

Is construction noise a consideration for the project?

Yes No

If yes, the following statement applies:

Trucks and machinery used for construction produce noise that may affect some land uses and activities during the construction period. Residents along the alignment will, at some time, experience perceptible construction noise from implementation of the project. To minimize or eliminate the effect of construction noise on these receptors, mitigation measures have been incorporated into the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction as Article 107.35.

G. Air Quality

1. Air Quality Conformity Documentation (Section 26-11).

Is the project within a nonattainment or maintenance area?

Yes No

If no, the following statement applies:

No portion of this project is within a designated nonattainment or maintenance area for any of the air pollutants for which USEPA has established standards. Accordingly, a conformity determination under 40 C.F.R. 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans is not required.

Is the project exempt from conformity requirements?

Yes No

If yes, the following applies and no further analysis is needed. If no, continue below.

This project is located within a designated nonattainment or maintenance area but is a project type which the U.S. Environmental Protection Agency (USEPA) has designated as exempt from regional emissions analyses of transportation plans and Transportation Improvement Programs for purposes of determining conformity with the State Implementation Plan (SIP). This designation is based on USEPA's determination that the nature of the project is such that it would not affect the outcome of a regional emissions analysis.

If the project is within a nonattainment or maintenance area and is not exempt, check the following:

The National Ambient Air Quality Standards (NAAQS), established by the U.S. Environmental Protection Agency, set maximum allowable concentration limits for six criteria air pollutants. Areas in which air pollution levels persistently exceed NAAQS may be designated as “nonattainment.” States where a nonattainment area is located must develop and implement SIP containing policies and regulations that will bring about attainment of NAAQS. Areas that had been designated as nonattainment, but that have attained NAAQS for the criteria pollutant(s) associated with the nonattainment designation, will be designated as maintenance areas. All areas of Illinois currently are in attainment of the standards for four of the six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead. For the eight-hour ozone and PM2.5 standards, Cook, DuPage, Kane, Lake, McHenry, and Will Counties, as well as Aux Sable and Goose Lake Townships in Grundy County and Oswego Township in Kendall County, have been designated as nonattainment areas. Jersey, Madison, Monroe, and St. Clair Counties in the St. Louis area also have been designated as moderate nonattainment areas for the eight-hour ozone standard. In addition, Madison, Monroe, St Clair, and Baldwin Township in Randolph County are nonattainment for PM2.5. The Lake Calumet area and Lyons Township in Cook County have been designated as a maintenance area for the particulate matter (PM10) standard. In addition, Oglesby and several adjacent townships in LaSalle County and Granite City Township and Nameoki Township in Madison County have been designated as maintenance areas for the PM10 standard. All other areas of Illinois currently are in attainment for the ozone and PM10 standards.

Is Chicago Metropolitan Agency for Planning (CMAP) the Metropolitan Planning Organization (MPO)?

Yes No

If yes, the following statement applies:

This project is included in the FY (indicate year) Transportation Improvement Program (TIP) endorsed by the Metropolitan Planning Organization Policy Committee of CMAP for the region in which the project is located. Projects in TIP are considered to be consistent with the (indicate year) regional transportation plan endorsed by CMAP. The project is within the fiscally constrained portion of the plan. On (indicate date), FHWA and the Federal Transit Administration (FTA) determined that the (indicate year) regional transportation plan conforms to SIP and the transportation-related requirements of the 1990 Clean Air Act Amendments. On (indicate date), FHWA and FTA determined that TIP also conforms to SIP and the Clean Air Act Amendments. These findings were in accordance with 40 C.F.R. 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans. The project’s design concept and scope are consistent with the project information used for the TIP conformity analysis. Therefore, this project conforms to the existing SIP and the transportation-related requirements of the 1990 Clean Air Act Amendments. The TIP number for this project is .

Is project served by MPO other than CMAP?

Yes No

If yes, the following statement applies:

This project is located within an area that the USEPA has designated as nonattainment or maintenance in relation to the national ambient air quality standards for (insert name(s) of applicable criteria pollutant(s)). The project is outside of an area served by MPO. The FHWA has reviewed the results of a regional emissions analysis prepared by the Illinois Department of Transportation that includes the proposed project. Based on the results of this analysis, FHWA has determined that the project will not cause or contribute to any new localized violations of the standard[s] for (insert name(s) of applicable criteria pollutant(s)) nor increase the frequency or severity of any existing violations of the (insert name(s) of applicable criteria pollutant(s)) standard(s). Therefore, this project conforms to the transportation-related requirements of the 1990 Clean Air Act Amendments.

Is project a “Regionally Significant” non-Federal Project within a Nonattainment or Maintenance area?

Yes No

This project is located within an area that USEPA has designated as nonattainment or maintenance in relation to the national ambient air quality standards for (insert name(s) of applicable criteria pollutant(s)). The project does not involve approvals or funding from FHWA but has been determined to be “regionally significant” under 40 C.F.R. 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans.

The IDOT has confirmed that there is a currently conforming transportation plan and transportation improvement program and has determined that the plan, transportation improvement program, and project are consistent with 40 C.F.R. 93.121, Requirements for adoption or approval of projects by other recipients of funds designated under Title 23 U.S.C. or the Federal Transit Act.

2. Transportation Conformity Project-Level Qualitative Hot-Spot Analysis in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas (Section 26-12).

As of 2015, Illinois is "unclassifiable" for PM_{2.5} and PM₁₀ because this classification is subject to change, check with BDE Coordination Unit for current status.

3. Microscale Carbon Monoxide (CO) Analysis (Section 26-14).

Does the project add through lanes or auxiliary turning lanes?

Yes No

If no, microscale analysis is not needed.

If yes, does the project have greater than 5,000 vehicles per hour (vph) or 62,500 Average Daily Traffic (ADT)?

Yes No

If no, the project is exempt from microscale analysis.

If yes, use COSIM 4.0 to predict future build CO levels.

4. Mobile Source Air Toxics (MSAT) (Section 26-13).

A. Project with lower potential MSAT effects.

Will the project have meaningful impacts traffic volumes or vehicle mix such as found in 23 C.F.R. 771.117 or 40 C.F.R. 93.126?

Yes No

If no, no analysis or discussion of MSAT is necessary.

a. If yes, does project include minor widening that is less than 150,000 AADT?

Yes No

If yes, insert language found in Section 26-13.03(b) under project documentation type 1.

If no, the project is subject to a quantitative analysis for MSAT.

For each build alternative carried forward in this project report, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables (e.g., fleet mix) are the same for each alternative. The VMT estimated for each of the Build Alternatives carried forward is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to USEPA's MOVES 2014 model, emissions of all of the priority MSAT decrease as speed increases.

Because the estimated VMT under each of the Build Alternatives carried forward are nearly the same, varying by less than 1 percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce annual MSAT emissions by more than 90 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great, even after accounting for VMT growth, that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under each Build Alternative carried forward there may be localized areas where ambient concentrations of MSAT could be higher under certain Build Alternatives than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built at Riverview Drive. However, the magnitude and the duration of these potential increases compared to the No-build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts.

In summary, where a highway is widened, the localized level of MSAT emissions for the Build Alternative carried forward could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion, which are associated with lower MSAT emissions. Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

- b. Will the project include plans to construct travel lanes closer to populated areas?
 Yes No

If yes, insert language found in Section 26-13.03(b) under project documentation type 1 and include additional paragraph.

See previous subsection

- c. Will the project include a new interchange connecting an existing roadway with a new roadway?
 Yes No

If yes, insert language found in Section 26-13.03(b) under project documentation type 2.

- d. Will the project include a new interchange connecting new roadways?
 Yes No

If yes, insert language found in Section 26-13.03(b) under project documentation type 3.

- e. Will the project include minor improvements or expansions to intermodal centers or other projects that affect truck traffic?
 Yes No

If yes, insert language found in Section 26-13.03(b) under project documentation type 4.

B. Projects with higher MSAT effects (Section 26-13.03(c))

MSAT qualitative or quantitative analysis required?

- Yes No

H. Special Waste

1. Special Waste Assessment (SWA) (Section 27-3).

Special waste screening is required for all State highway projects to identify the possible presence of regulated substances, pursuant to Departmental Policy D&E-11, Identifying and Responding to Regulated Substances in Highway Project Development. See Section 27-3 for details.

Level I or II screening completed?

- Yes No

Level I or II screening successful indicating PESA is unnecessary:

- Yes No Provide screening documentation. Prepare and submit ESR.

PESA performed?

- Yes No If yes, see BDE's PESA review transmittal memorandum.

Did PESA identify Recognized Environmental Condition(s) (REC(s))?

- Yes No

REC(s) involved with project?

Yes No See district's PESA response documentation.

Any hazardous water or hazardous substance sites in proximity to project (i.e., CERCLIS/SEMS sites, NPL sites, RCRA Corrective Action sites)?

Yes No If yes, provide the PESA site number(s) and report date:

All Appropriate Inquiry (AAI) assessment recommended?

Yes No If yes, provide the AAI report number and date:

Commitment: Project evaluated for additional assessment (e.g., PSI) in Phase II?

Yes No See district's PESA Response/Work Order documentation.

Remedial Investigation/Feasibility Study (RI/FS) and Risk Assessment required?

Yes No

Avoidance or remediation of hazardous waste site?

Avoidance Remediation N/A

2. Validity of Special Waste Results (Section 27-3.08).

More than six months elapsed since last SWA (Level II screening or PESA)?

Yes No If yes, provide Level 2 screening documentation:

New REC(s) identified?

Yes No N/A If yes, identify and discuss:

New REC(s) involved with project?

Yes No N/A If yes, identify and discuss:

New RI/FS and Risk Assessment?

Yes No N/A

Additional Remediation?

Yes No N/A

More than three years will elapse between last PESA and anticipated letting date?

Yes No If yes, see BDE's PESA review transmittal memo for the new PESA (validation). Begin checklist again.

More than five years will elapse between last PSI (or RMP) and anticipated letting date?

Yes No If yes, see district's PESA Response/Work Order documentation. Begin checklist again.

I. PERMITS AND CERTIFICATIONS

1. Section 402 National Pollutant Discharge Elimination System (NPDES) (Chapter 40).

Will the project involve more than one acre of ground disturbance and thus an ILR10 permit is required?

Yes No

2. Section 404 Permit (Section 28-2).

Project involves discharge(s) of dredged or fill material subject to Section 404?

Yes No

If yes, which type of permit is being sought?

Nationwide permit (except Chicago Corps District?)

Yes No

Permit type: 14

Regional permit?

Yes No

Permit type:

Discharge(s) require individual permit?

Yes No

Discuss which General Conditions cannot be met:

3. Section 401 Water Quality Certification (Section 28-2).

Is Individual Water Quality Certification required?

Yes No

Is an Antidegradation Assessment required?

Yes No

4. Section 9 Permit (Section 28-2).

Yes No

5. Section 10 Permit (Section 28-2).

Yes No

6. IDNR/Office of Water Resources (OWR) Floodway Permit (Section 28-3).

Yes No

7. IDNR/OWR Public Waters Permit (Section 28-3).

Yes No

8. IDNR/OWR Permit for Floodway Construction in Northeastern Illinois (Section 28-3).

Yes No

J. COORDINATION ISSUES

1. District Monthly Coordination Meeting (Section 22-5.03).

Date(s) of Coordination Meeting:

8/27/2014

12/15/2015

10/27/2016

12/8/2016

12/16/2016

2/2/2017

4/5/2017

6/19/2017

8/22/2017

8/28/2017

10/26/2017

12/12/2017

12/14/2017

2/14/2018

2. Coordination required with Aeronautics (Section 11-2)?

Yes No

Commitments?

Yes No

Describe commitments:

3. Coordination required with FAA for publicly-owned airports (Section 11-2)?

Yes No

Response from FAA received?

Yes No

Commitments required?

Yes No

Describe commitments:

4. Railroad coordination required due to project involving a railroad crossing?

Yes No

Response from railroad company received?

Yes No

5. Drainage District Coordination required for projects involving in-stream work affecting a water body under the jurisdiction of a drainage district?

Yes No

Response from drainage district received?

Yes No

6. Has public involvement been implemented for this project?

Yes No

Described public involvement as necessary:

7. Context Sensitive Solutions (CSS) Coordination (Section 19-2).

CSS Coordination implemented?

Yes No

8. Other Coordination.

Coordination responses:

Yes No

K. OTHER ANALYSES

1. Hydraulic Analysis/Report (Section 2-602 of the IDOT Drainage Manual).

Hydraulic analysis/report?

Yes No

2. Crash Data and Analysis (Section 11-2).

Reference report: See Section 1.3.1 in Project Report; Technical Report A: Crash Analysis Report; and Technical Report C: Safety Shoulder Technical Memorandum

3. Bridge Condition Report (Chapter 39).

Bridge Condition Report Approval Letter?

Yes No

4. Pavement Design (Chapter 54).

Yes No

5. Transportation Management Plan (BSPE Policy 3).

Transportation Management Plan?

Yes No

6. Geotechnical Report (Section 11-2.10).

a) structure Yes No

b) roadway Yes No

7. Mailbox Supports (Chapters 49 and 58).

Have supports been investigated and property owners contacted?

Yes No

8. Bicycle accommodations (Chapter 17).

Have accommodations been considered and investigated?

Yes No

9. Accessibility for the disabled (Chapter 58).

Required for all projects in an urban section.

Provisions for disabled access?

Yes No

10. Asbestos Determination Certification form (BBS 2536).

If the structure has been determined to involve asbestos, place a copy of the form in the commitment file.

Asbestos Determination form?

Yes No

L. Commitment Summary

While commitments can be addressed for specific issues in previous sections, this section can be used to summarize all environmental or engineering commitments required for this project or add more information if needed.

Examples of commitment summary could be tree clearing restriction, tree replacement, temporary fencing, stream protection, detours, emergency vehicle access, etc.:

Commitment 1: To protect the state and federally listed Pallid Sturgeon during the spawning season:

1. No explosives shall be used during demolition of the existing structures or during construction of the new structures.
2. During demolition, the superstructure shall not be dropped into the river.
3. To avoid the spawning season for the Pallid Sturgeon, piles shall not be driven between April 15 and June 30.

Commitment 2: The Bat Bridge Assessment, completed in August 2016, is valid for two years and an expired assessment will need to be updated prior to construction. Per email discussion (IDOT-BDE) with Mr. Matt Mangan with the USFWS, "Once the dates of construction are known, the USFWS will be contacted to discuss whether additional survey is warranted."

Commitment 3: To protect the federally endangered Indiana Bat and threatened Northern Long-Eared Bat, trees three inches or greater in diameter at breast height will not be cleared April 1 through September 30.

Commitment 4: To address potential construction vibration impacts to the existing FAI 270 over the Mississippi River Bridge directly adjacent to the project and the truss bridge, locally known as the Old Chain of Rocks Bridge, located a quarter mile downstream of the project; a geotechnical investigation shall be included in Phase II of the project that will include a risk analysis of construction induced vibrations on nearby transportation structures. The Phase II Consultant shall provide recommendations of mitigation measures based on the geotechnical findings.

Commitment 5: If any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery.

Commitment 6: The Osage Nation Historic Preservation Office has requested a copy of the planned cultural reconnaissance survey report, if one is deemed necessary.

Commitment 7: Investigate the possibility of filling in the culvert (SN 060-2013) during Phase II.

Commitment 8: Wetlands adjacent to the work area and not impacted by this project shall be marked by a fence not allowing equipment access during construction.

Commitment 9: Phase II will investigate alternative slope treatments in areas where slopes exceed 3:1.



Key Route

FAI 270

Marked Route/Road Name

I-270

Section

60B-1

Job Number

P-98-001-15

County(ies)

St. Louis City, St. Louis Co, MO and Madison Co, IL

Contract Number

76J90

State Approved Categorical Exclusion (CE)

IDOT has addressed all environmental requirements for this project and determined that it has met the following requirements for a State Approved CE in the CE Programmatic Agreement (approved 10/14/15): (1) the scope is consistent with the project scope listed in Appendix A or B, item number [] and (2) none of the circumstances in Section V exist. Therefore, on behalf of FHWA, IDOT hereby approves this project as a State Approved CE.

Approved by

Signature of Regional Engineer

[Signature box]

Date

[Date box]

Federal Approved Categorical Exclusion

After reviewing the project information provided, FHWA has determined that this project will not have any significant impacts on the human environment and approves its designation as a Federal Approved CE.

Approved by

Signature of FHWA Representative

[Signature]

Date

6/13/2018

Wetland Impacts Involved

Yes No

The FHWA issued a programmatic Wetland Finding for CEs on October 14, 2015, in compliance with Executive Order 11990, Protection of Wetlands. The programmatic Wetland Finding is contained in the CE Agreements, available online in the BDE Manual Appendix A.

FOREWORD

This project report provides information regarding the Illinois Department of Transportation's (IDOT) Phase I study to replace the bridge that carries I-270 over the Mississippi River, locally known as the Chain of Rocks Bridge. IDOT's study limits for this project extends along I-270 from east of Waterworks Road in Illinois to just west of Riverview Drive in Missouri. Preceding IDOT's Phase I Study, the Missouri Department of Transportation (MoDOT) had begun studying the widening of I-270 from the Chain of Rocks Bridge west to I-70 in Missouri. This study was an Environmental Assessment (EA) and was completed in May 2017. Essentially, the study limits of the IDOT Phase I Study and the MoDOT EA study limits overlap in the Riverview Drive area. Due to the Riverview Drive interchange's close proximity to the Chain of Rocks Bridge and the fact that any geometric changes to the I-270 bridge alignment would affect the Riverview Drive interchange, IDOT included this interchange as part of this study.

The purpose of the IDOT Phase I study is to identify the best possible solution for the replacement of the Chain of Rocks Bridge whereas MoDOT's EA focuses on the widening of I-270 up to the Chain of Rocks Bridge. Therefore, the details and impacts discussed within this project report focus on the I-270 Chain of Rocks Bridge. It is to be noted that IDOT's proposed design for the bridge replacement functions with the preferred reconfigured Riverview Drive interchange option identified and studied in the MoDOT EA.

Please see **Exhibit 1** that provides a comparison of the IDOT and MoDOT study limits.

1.0 NEED FOR IMPROVEMENT

1.1 Project Location and Termini

The proposed project is to replace the bridge carrying FAI 270 (I-270) over the Mississippi River connecting Madison County, Illinois with St. Louis, Missouri. The bridge is locally known as the Chain of Rocks Bridge and will be referred to as such throughout this project report.

The project is located within unincorporated Madison County, the city of St. Louis, Missouri, and a portion within unincorporated St. Louis County, Missouri. East of the bridge in Illinois is an "island" referred to as Chouteau Island, lying between the Mississippi River and the Chain of Rocks Canal. From the bridge heading east, I-270 continues over the Chain of Rocks Canal and intersects with IL Route 3. Heading west from the Chain of the Rocks Bridge along I-270 is Riverview Drive in St. Louis, Missouri. See **Exhibit 2** for a location map for the project.

The study limits for the project extend along I-270 from east of Waterworks Road in Illinois to just west of the Riverview Drive interchange in Missouri. Please see **Exhibit 3** for the locations of these roadways.

I-270 is a Class I Truck Route on the Interstate Highway System and is a National Highway System (NHS) Route.

This project is being processed as a Federally Approved Categorical Exclusion (Project Report) which is the required NEPA document for this project.

1.2 Description of Existing Conditions

1.2.1 Land Use

Illinois: The existing adjacent land use on the Illinois side is primarily agricultural ground. There are also two closed landfills located within the project study area; one directly south of I-270 and another one further south located south of Chain of Rocks Road. A private levee is located on Chouteau Island. This levee is located approximately a quarter mile east of the Mississippi River and runs parallel to the Mississippi River. In addition, there are two bicycle and pedestrian trails that exist on Chouteau Island. The first is a bicycle and pedestrian trail utilizing the historic Old Chain of Rocks Bridge located approximately a quarter mile south of the Chain of Rocks Bridge. The trail begins in Missouri where it connects into the St. Louis Riverfront Trail, crosses the Old Chain of Rocks Bridge, and then continues along Chain of Rocks Road, located on Chouteau Island. A second trail is located on the east side of Chouteau Island named the Metro East Parks and Recreation Department's (MEPRD) Eagle Points Trail which runs north-south along the Chain of Rocks Canal levee. Please refer to **Exhibit 3**.

Missouri: On the Missouri side, land use is a combination of parks, light commercial, and agricultural ground. There is a proposed commercial development just north of the existing bridge. This proposed development is bounded by the I-270 right-of-way on the south, Riverview Drive on the west, agricultural land to the north, and the Mississippi River to the east. The Missouri Welcome Center is located in the northwest corner of the I-270 and Riverview Drive interchange along Dunn Road in close proximity to the project area. Dundee Park is located in the southwest corner of the I-270 and Riverview Drive interchange. Please refer to **Exhibit 3**.

Mississippi River: This portion of the Mississippi River is navigable but does not transport barges due to the existence of the chain of rocks. Barge traffic utilizes the Chain of Rocks Canal located to the east.

1.2.2 Existing Cross Section

The Chain of Rocks Bridge carries four lanes of traffic, two in each direction. The lanes are 12-foot wide with shoulders less than a foot wide. The bridge deck is approximately 6 ½ inches thick with a 2 ½ inch microsilica concrete overlay with a total thickness of approximately 9 inches.

The existing I-270 roadway leading up to the bridge is a divided expressway with open shoulders consisting of two 12-foot lanes in each direction and 4-foot inside and 10-foot outside bituminous shoulders and a grass median. Guardrail is present on the outside shoulder throughout the project corridor due to high fill slopes. The roadway consists of approximately 10 inches of bituminous concrete. No parking is allowed on the interstate. Please see **Exhibit 4** for the existing typical cross sections.

Open drainage ditches are present along the I-270 corridor. A combination of open ditches and inlets lie along the eastbound exit ramp and westbound entrance ramp of the Riverview Drive interchange. Chouteau Island lies in a floodplain and is prone to frequent flooding. A private levee provides protection from 25-year floods. It is located just to the west of the east abutment of the Chain of Rocks Bridge. Please see **Exhibit 3** for the existing condition plan sheets, **Exhibit 4** for the existing typical cross sections, and **Exhibit 5** for photographs of the study area.

1.3 Operational and Safety Analyses

1.3.1 Safety

Overall, crashes in this project area corridor are a concern. The crash rate for the analysis area is double the Illinois statewide average for interstates and there are two IDOT 5% Selected Segments in the analysis area. 5% Selected Segments are defined under the Safe Accountable Flexible Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU) Act as the top 5% of public roadways with the most severe safety needs in the State. According to the “IDOT Five Percent Report Summary” document on the Federal Highway Administration (FHWA) Safety Improvement Program, the purpose of identifying the top 5% of the highway locations exhibiting the State’s most pressing safety needs is to gain an understanding of the nature and extent of the safety problem and identify solutions. A crash analysis was performed and the results are summarized in the **Table 1** below.

TABLE 1: CRASHES BY TYPE AND YEAR									
CRASH TYPE	2010	2011	2012	2013	2014	2015	TOTAL	INJURIES	FATALITIES
Rear End	14	10	15	15	15	18	87	34	1
Fixed Object	8	12	10	10	6	13	59	19	1
Sideswipe	5	5	12	4	10	6	42	5	0
Other	8	6	5	6	5	4	34	9	1
TOTAL	35	33	42	35	36	41	225	57	3

Crash Severity refers to the severity of the injuries resulting from a crash. The severity for each crash is assigned a letter K, A, B, C or O. This designation is consistent with the KABCO severity scale (National Safety Council, 1990) typically used by the investigating police officer on the scene to classify injury severity for occupants with five categories as shown in **Table 2**.

TABLE 2: CRASH SEVERITY DESCRIPTIONS	
Injury Type	Description
K	Crash in which a fatality occurs.
A	Crash involving one or more disabling injury. This is the most severe injury classification where there has not been a fatality.
B	Indicates a crash involving one or more people with evident injuries.
C	Indicates crash with possible injuries.
O	No Injury

Source: National Safety Council, 1990.

Of the 225 total crashes, three resulted in fatalities, 11 were Type A crashes, and 44 were Type B crashes. The crash analysis revealed the dominant crash types were rear-end, fixed object, and sideswipe within the project corridor. These three types of crashes account for 88 percent of the injuries caused by crashes. The most injuries occurred in rear-end crashes, resulting in 29 of the 55 injuries. The second highest number of injuries (17) occurred during fixed-object crashes. These two types of crashes account for two of the fatalities for crashes within the project limits. Another fatality occurred during an “other” type of crash.

The absence of shoulders and low median barrier may be contributing factors to the high crash rate in the corridor. The current narrow less than one-foot shoulders allow virtually no room for disabled vehicles without blocking a lane or maneuvering to avoid crashes. The results of having narrow shoulders and high traffic volumes can be seen in the crashes experienced along the corridor.

Several countermeasures were evaluated and recommended based on the crash history through the corridor. Those countermeasures include:

- Increase Shoulder Width: Will improve the margin for error for a vehicle drifting toward the shoulder and give drivers more sense of comfort. Wider shoulders will provide a space to possibly avoid a rear-end collision, refuge for disabled vehicles, and areas for emergency vehicle response.
- Improved Lighting: Designed to address the higher rate of night time crashes through the corridor. Lack of lighting was noted on several crash reports.
- Increase Number of Through Lanes: Although not part of this project, the anticipated future lanes that the proposed bridge will be designed for will improve the capacity which should also reduce the potential for crashes. An increase in lanes is a countermeasure for fatal, rear-end, and sideswipe crashes.
- Glare Shields: Designed to eliminate glare from headlights from opposite direction of travel.
- Lengthening Acceleration / Deceleration Lanes: Designed to help compensate for the speed differential between ramp traffic and mainline traffic.

To better evaluate the necessary shoulder width increase, a predictive safety analysis was performed for various proposed shoulder widths to help determine their effectiveness in reducing crashes. The safety analysis allowed crash rates to be projected for the study period using proposed width alternatives. The alternatives included varying inside and outside shoulder widths from 4-feet to 12-feet. The baseline scenario utilized 12-foot inside and outside shoulders, consistent with design criteria. This was used to establish a datum for comparison in analysis. The auxiliary lanes were also analyzed for 4-foot and 6-foot outside shoulder widths.

Minor reductions in shoulder width increased crashes by one per month; while larger reductions in shoulder width increased crashes to 7 per month or 88 more crashes annually. In essence, the narrower the shoulder, the greater the increase in crashes.

The minimum shoulder width acceptable for the mainline was determined to be 8-feet for safety. It was also determined that the auxiliary lanes require a 4-foot minimum shoulder width to maintain safety and drainage considerations. An 8-foot mainline inside shoulder would predict to have 31 more crashes over the 20-year study period than a 12 foot shoulder.

The proposed shoulder widths will be investigated further during Phase II, preparation of contract plans and specifications. For Phase I, the Bureau of Design and Environmental (BDE) design criteria was utilized, consisting of 12-foot inside and outside shoulders. Selection and use of narrower shoulders during Phase II will require design exceptions. Please see **Exhibit 6, Technical Report A: Crash Analysis Report** and **Technical Report C: Safety Shoulder Technical Memorandum** for more information regarding crashes within the project study area.

1.3.2 Pavement Condition

The Condition Rating Survey (CRS) rating for the existing pavement on the Illinois approach is 8.0 on a 10 scale (Excellent Condition). The western limits of the project tie into the I-270 MoDOT EA project previously discussed and was not considered for additional pavement improvements.

1.3.3 Operational Concerns

The Chain of Rocks Bridge has seen a significant increase in traffic from an average daily traffic (ADT) of 19,800 vehicles per day (vpd) in 1975, to over 51,000 vpd, with approximately 17 percent of these trips being truck traffic. The traffic is projected to increase to 56,900 vpd by 2030. The Highway Capacity Software (HCS) program was used to determine the existing and projected (2045) LOS for the no-build as shown below in **Table 4**.

TABLE 4: I-270 PROJECT AREA EXISTING & PROJECTED (2045) LOS					
YEAR	DIRECTION	PERIOD	PEAK HR VOLUME	NO-BUILD	
				DENSITY	LOS
2016	EB	AM	1,281	14.1	B
	WB	AM	3,140	30.6	D
	EB	PM	2,862	26.8	D
	WB	PM	1,687	17.2	B
2045	EB	AM	1,709	18.8	C
	WB	AM	4,190	---	F
	EB	PM	3,819	38.8	E
	WB	PM	2,251	22.9	C

Please see **Exhibit 6** and **Technical Report B: Traffic Analysis** for more information regarding traffic within the project study area.

1.3.4 Existing Geometry and Profile

The existing I-270 alignment has a posted speed limit of 55 mph in Illinois and 60 mph in Missouri. The horizontal curves are within policy. Superelevations within the corridor range from

approximately 3 to 3.5 percent. The eastbound and westbound Missouri approach alignment splits just to the west of Riverview Drive. The profile is relatively flat on the Illinois approach, but increases in grade west of Riverview Drive. The westbound exit ramp profile is within policy for 60 mph to 40 mph deceleration. The westbound entrance ramp profile is within policy for 40 mph to 60 mph acceleration. The eastbound exit ramp profile is within policy for 60 mph to 40 mph deceleration. The eastbound entrance ramp profile is substandard for 40 mph to 60 mph acceleration. This ramp has deficient length to achieve the appropriate speed required.

1.3.5 Structural Deficiencies

The existing I-270 bridge over the Mississippi River was constructed in 1966 making the bridge over 50 years old. The age of the Chain of Rocks Bridge has resulted in rising maintenance costs. The Bridge Condition Report (BCR) for the Chain of Rocks Bridge notes the existing structure is in need of numerous repairs. The deck and beams were reported in “fair” condition, with multiple cracks, spalling, and exposed rebar in the deck. Many steel repairs were reported for the beams. The expansion joints were recommended to be replaced. The abutments and piers yielded a “fair” rating as many cracks were observed. A majority of the river span piers have experienced scour at the bottom of the footings. The combination of these factors resulted in the determination that the reuse of the existing substructure was not feasible.

The Riverview Drive structures, built in 1962, are maintained by MoDOT. The inspections resulted in a “good” condition rating. However, MoDOT recommended the existing structures be replaced for the following reasons: age of these structures, observed rapid deterioration of other structures in this corridor constructed in the same time period, substandard vertical clearance over Riverview Drive, and limitations of re-using the existing alignment.

See **Technical Report F: Bridge Condition Report (SN 060-0035)** for additional detail.

1.3.6 Local Interest

The Chain of Rocks Bridge is of great interest to the surrounding local communities as it serves as a commuter bridge and also carries a substantial amount of truck traffic, which is vital to the local and regional economy. Throughout the project IDOT held stakeholder meetings, Community Advisory Group (CAG) meetings, and public informational meetings. Due to these meetings, IDOT was made aware of the interests the locals had regarding this project including: increasing the safety of the bridge as the narrow shoulders are believed to have been a factor in many of the crashes on the bridge. In addition, the locals have repeatedly requested that IDOT keep the bridge open during construction for the continued movement of regional and national goods and services as well as allowing those who use the bridge to commute to their jobs.

1.3.7 Relationship to Other Projects

Two projects encompass the Chain of Rocks Bridge replacement project corridor.

MoDOT EA: As previously mentioned, MoDOT conducted a study to determine a solution for the widening of I-270 from the Chain of Rocks Bridge west to I-70 in Missouri. This study identified a

widening of I-270 to six lanes up to the Chain of Rocks Bridge. This study was an EA and was completed in May 2017.

IDOT I-270 6-Lane Widening: IDOT has recently begun a study of a six-lane configuration for I-270 from the Chain of Rocks Bridge east to IL Route 157. Please see **Exhibit 7** for a map with the location of these adjacent projects.

These projects were considered during this Phase I project as the proposed bridge design will accommodate up to six lanes and include wider shoulders. It will be striped for four lanes initially but will be constructed to be compatible with six lanes of traffic in the future when the aforementioned studies are completed and the connecting roads are widened to six lanes.

1.4 Project Purpose

The purpose of the project is to replace the existing Chain of Rocks Bridge carrying I-270 over the Mississippi River. The structure must be replaced due to the age of the structure, condition of the structure, increasing traffic volumes, and safety issues associated with the narrow shoulders on the bridge.

2.0 DESCRIPTION OF PROPOSED IMPROVEMENTS

2.1 Introduction

The scope of work for this Phase I Study included identifying a preferred bridge alternative to replace the Chain of Rocks Bridge with a structure capable of accommodating four lanes of traffic and the capacity to accommodate six lanes with wider shoulders to address the age and deteriorating condition of the bridge. A new alignment for I-270 is proposed just south of the existing Chain of Rocks Bridge. Due to the Riverview Drive interchange's close proximity to the Chain of Rocks Bridge, any geometric changes would affect the alignment of the interchange ramps and the crossing over Riverview Drive. IDOT investigated the interchange type and it was determined a diamond-type interchange was still the best fit as the preferred interchange reconfiguration type. MoDOT identified a diamond-type interchange in the EA. The proposed plan and profile can be found in **Exhibit 8**. The proposed typical sections for the Riverview Drive interchange can be found in **Exhibit 4**.

This Phase I Study identified any environmental concerns with the proposed bridge replacement and established the preliminary proposed right-of-way requirements for the project to the level of detail required by each state.

2.2 Design Criteria Utilized

This project was designed using criteria specified in the BDE Manual Chapter 44 "Rural and Urban Freeways" for improvements on the Illinois side of the project. The MoDOT Engineering Policy Guide (EPG) was utilized for all preliminary design of improvements on the Missouri side of the project.

2.3 Geometric Improvements

Several geometric improvements have been incorporated into the proposed design.

2.3.1 Proposed Cross Sections

The proposed design will feature 12-foot inside and outside shoulders on the Chain of Rocks Bridge and roadway mainline and two 12-foot lanes in each direction. A potential future 12-foot lane will also be constructed on the bridges, totaling a 60-foot typical section of each structure, measured shoulder to shoulder for each direction. This configuration will be compatible with the previously mentioned EA and IDOT's six-lane study. Auxiliary lanes at the Riverview Drive interchange will be 12-foot wide with 6-foot outside shoulders. Entrance and exit ramps will be comprised of a 4-foot inside shoulder, a 16-foot single lane, and a 6-foot outside shoulder, totaling a 26-foot typical section, measured shoulder to shoulder. The ramps at the interchange were lengthened significantly, dramatically increasing the length of the auxiliary lanes in a parallel offset ramp configuration. The proposed design provides MoDOT policy acceleration and deceleration lengths for both of the Riverview Drive entrance and exit ramps for improved overall safety. The proposed typical sections can be found in **Exhibit 4**.

2.3.2 Intersections

The proposed interchange is designed as a signalized intersection. It was designed as signalized because it is the most conservative design footprint. Through Vissim model analyses, the intersection of Riverview Drive with I-270 eastbound ramps fails as a stop condition in the PM peak hour for the Design year (2040). Alternative intersection treatments (roundabouts or signals) were evaluated and resulted in acceptable levels of service for all movements in the Design year. MoDOT will ultimately determine the proposed intersection treatment through their design process.

See **Technical Report B: Traffic Operational Analysis** for additional detail.

2.3.3 Vertical Alignment

The proposed vertical alignment follows both state Departments of Transportation geometric policies, with a 60 mph design speed and a vertical curve length of three times the design speed. Entrance and exit ramp profiles were designed with 45 mph for the high curve and 20 mph for the low curve approaching Riverview Drive. The proposed profile over the Mississippi River was raised to allow for proper clearance from low steel to the river. Also, the vertical clearance over Riverview Drive increased from 14-feet 8-inches to 16-feet 6-inches to improve mobility and safety for heavy truck traffic utilizing Riverview Drive. This clearance is in agreement with MoDOT's vertical requirements.

2.3.4 Horizontal Alignment

The proposed horizontal alignment is designed with a 60 mph design speed and meets IDOT policy. The max superelevation rate is 6.0, with 3.8 percent superelevation obtained on the Illinois approach. The horizontal stopping sight distance (HSSD) on the Illinois approach curve has been lengthened with the new policy curve. The entrance and exit ramps follow MoDOT standards, with

1,000 feet initial curves and 6.0 percent max superelevation rate (5.4% obtained). The ramp design speeds are 45 mph.

2.4 Preliminary Pavement Design / Rehabilitation

A roadway geotechnical report and the associated pavement design will be performed in Phase II. For the purposes of this study a 12-inch concrete pavement structure was assumed for I-270 mainline and ramps.

2.5 Pavement Drainage

A Location Drainage Study (LDS) was performed within the corridor. The existing drainage system on the Illinois approach is open drainage with ditch drainage on each side and in the median (with cross culvert drainage to relieve the median). The Missouri approach drainage consists of a combination of open ditch drainage on the mainline and open ditch with storm sewers on the ramps. Riverview Drive drainage also consists of open ditch drainage. Roadside ditches are adequate to accept current runoff from pavement surfaces and the surrounding ground surfaces. The existing drainage structures are adequate and function well.

The proposed drainage system in the corridor is open drainage outside of the shoulders. Because of the proposed median barrier, a storm sewer system will be installed throughout the center of the proposed alignment. The proposed storm sewers will connect to various cross road culverts along the corridor on the Missouri approach. The sewers are designed for a 20 year event in Missouri; proposed ditches for a 50 year event. Due to the close proximity of the closed landfill on the Illinois approach, a shallow swale is proposed (less than 0.5% slope). The storm sewers on the Illinois approach are designed for a 10 year event; proposed ditches for a 50 year event.

The LDS cited the need for compensatory storage on the Illinois approach. The approximate storage area is located on the north side of the Illinois approach east of the private levy. The amount of required storage is 100,880 cubic yards.

Please see **Technical Report D: Location Drainage Study** for further information regarding the proposed drainage improvements.

2.6 Design Exceptions

No design exceptions are anticipated for the project.

2.7 Right of Way

2.7.1 Acquisition Required

A summary of right of way requirements is shown below in **Table 5**. The one displacement shown below is a farm which has been affected by past flooding of Chouteau Island. Active farm outbuildings and grain storage were witnessed during site visits. No active dwelling was observed.

TABLE 5: RIGHT OF WAY			
STATE	PARCELS	ACRES	DISPLACEMENTS
Illinois	9	26.75	1
Missouri	2	4.07	0
TOTAL	10	30.72	1

2.7.2 Permanent Easements Required

One parcel of land has been identified to obtain a permanent easement for construction of a drainage ditch. The amount of permanent easement required is 0.10 acre.

2.8 Structures

Four (4) structures were identified in the project corridor.

2.8.1 SN 060-0035

2.8.1.1 Feature Carried

The existing Chain of Rocks Bridge carries I-270.

2.8.1.2 Feature Crossed and Adjacent Land Use

The existing Chain of Rocks Bridge crosses the Mississippi River and the accompanying floodplain. Adjacent land use is agriculture.

2.8.1.3 Structure Number

The existing Chain of Rocks Bridge is structure number 060-0035. The proposed twin structures are 060-0350 (eastbound) and 060-0351 (westbound).

2.8.1.4 Existing Structural Deficiencies

The existing Chain of Rocks Bridge has a HS20-44 design loading. The existing structure is comprised of 43 spans, 10 of which are approach spans. The deck is in fair condition with minor section loss. Transverse and longitudinal cracks, spalling, and exposed rebar were observed with the deck. Cracking, delaminations, and pop-outs were reported with the overlay. Cracking, unsound patches, spalling, and exposed reinforcement were observed with the parapet and curbs. The beams/structural steel components were rated as being in fair condition. Many structural steel repairs had been completed previously. It was reported that some loose bolts and areas of minor section loss were observed. The National Bridge Inspection System (NBIS) Report states that the existing expansion joints are debris filled and the troughs are installed on the inside of the steel. It was recommended that the expansion joints be replaced.

The west abutment and east abutment were reported to have cracking and minor section loss, yielding a condition rating of fair. Overall, the piers were rated as being in fair condition. Areas of cracking, spalling, and delaminations were observed on the piers. According to the NBIS Report,

the majority of the Mississippi River span piers have experienced scour to the bottom of the footings.

The substructure evaluation also included an analysis to determine the feasibility for reusing all or a portion of the existing substructure. It was ultimately determined the current requirements for seismic design, and the type of existing substructure (spread footing on rock), eliminated any cost benefit in using the existing substructure since costly retrofits and full replacements were still required of some critical substructure units. The net result of the retrofit substructure would be a similarly priced solution however it required re-use of the existing non typical span lengths, required use of the exact same alignment geometrics and would still include some refurbished substructure units built in the 1966. For additional information please see **Technical Report F: Existing Substructure Evaluation Technical Memorandum**.

2.8.1.5 Proposed Scope of Work and Cross Section

It is recommended the existing structure be replaced with twin structures (SNs 060-0350 and 060-0351). The lane configuration for the proposed twin structures will match the proposed roadway lane configuration. Each structure will have two 12-foot through lanes and an additional future 12-foot through lane, with 12-foot inside and outside shoulders, for an overall cross section width of 60 feet (excluding parapet walls).

Twin structures are recommended for both inspectability and maintenance of traffic during construction. For maintenance of traffic purposes it is recommended to stage the construction with the eastbound structure constructed first while both eastbound and westbound traffic utilize the existing structure. The westbound structure would be constructed in place of the current bridge after traffic shifts to the eastbound structure.

For more information please see:

- **Exhibit 4** for the typical cross sections of the preferred alternative
- **Exhibit 8** for the plan and profile of the preferred alternative
- **Technical Report G: Proposed Bridge Inspectability Technical Memorandum**
- **Technical Report H: Existing Pier Removal Technical Memorandum**
- **Technical Report J: Traffic Management Plan**
- **Technical Report K: Structure Typical Section Technical Memorandum**

2.8.1.6 Vertical Clearances

The profile for SNs 060-0350 and 060-0351 will be refined in Phase II to meet or exceed the existing vertical clearance and low steel elevation in the Mississippi River channel proper. The low steel elevation was designed to be 443.09 feet. Through additional coordination with the U.S. Coast Guard the minimum low steel requirement pertains to the Mississippi River channel proper as documented in the email found in **Appendix C** dated 12/14/17 and the Waterway Information Table found in the project Hydraulic Report. For additional information please see **Exhibit 8** for the plan and profile of the preferred alternative.

2.8.1.7 Foundation Borings

Borings were not performed during this study. They will be performed in Phase II of this project.

2.8.1.8 BCR Approvals

The BCR for the existing Chain of Rocks Bridge was conditionally approved on 5/9/2017. The revised Final BCR was submitted on 12/22/2017. The approval memos can be found in **Technical Report E: Bridge Condition Report**.

2.8.2 SN A1024 & A1025

2.8.2.1 Feature Carried

Twin structures currently carry I-270.

2.8.2.2 Feature Crossed and Adjacent Land Use

The twin structures cross over Riverview Drive in St. Louis, MO. The adjacent land use is commercial, residential, and recreational.

2.8.2.3 Structure Number

The two structure numbers for these bridges are A1024 and A1025.

2.8.2.4 Existing Structural Deficiencies

In 1999 the structures were widened and seismically retrofitted. The roadway width is 44 feet for each structure with two 12-foot lanes, 12-foot outside shoulders and 8-foot inside shoulders. The structures have a “good” rating. More detailed information of the current structures can be found in **Technical Report E: Bridge Condition Report** and **Technical Report F: Existing Substructure Evaluation Technical Memorandum**.

2.8.2.5 Proposed Scope of Work and Cross Section

Due to the proposed realignment of I-270 for the proposed river bridge it is recommended new twin structures be constructed over Riverview Drive. The twin structures will be similar in configuration to the proposed river bridge.

One dimensional (1-D) and 2-D hydraulic analyses were performed for the proposed bridge. During the refinement of the potential preferred alternative, very preliminary pier spacing was developed, with span lengths and structure depths assuming a steel plate girder bridge utilizing spans longer than the existing bridge. This preliminary bridge layout was developed primarily for use in the geometric layout of the associated roadways and cost estimating purposes. This layout was further refined, based on stipulations by the USCG to set the proposed bridge at or above the existing low steel elevations. This preliminary bridge layout was used in the development of the hydraulic analyses to allow the team a better understanding of the Mississippi River hydraulics and potential for scour for Phase I design approval. Final analysis will be performed in Phase II.

For more information please see:

- **Exhibit 4** for the typical cross sections of the preferred alternative

- **Exhibit 8** for the plan and profile of the preferred alternative

2.8.2.6 Vertical Clearances

Current vertical clearance for SNs A1024 and A1025 over Riverview Drive is 14 feet-8 inches for northbound traffic and 14 feet-9 inches for southbound traffic.

Vertical clearance over Riverview Drive will increase to a 16-foot 6-inch clearance, satisfying MoDOT's minimum clearance requirement. For additional information please see **Exhibit 8** for the plan and profile of the preferred alternative.

2.8.2.7 Foundation Borings

Borings were not performed during this study. They will be performed in Phase II of this project.

2.8.2.8 BCR Approval

Because these structures are within Missouri's jurisdiction, an IDOT BCR was not required for these structures.

2.8.3 SN 060-2013

2.8.3.1 Feature Carried

Within the limits of the project exists a 21-foot x 18 ½ foot box culvert protecting a water main under I-270.

2.8.3.2 Feature Crossed and Adjacent Land Use

The box culvert crosses under I-270. The adjacent land use is agricultural.

2.8.3.3 Structure Number

The structure number for the water main protective culvert is 060-2013.

2.8.3.4 Existing Structural Deficiencies

The culvert has a condition rating of 8. The sufficiency rating is 69.8. The ends of the culvert are blocked. The north side is blocked with concrete; south side with treated lumber.

2.8.3.5 Proposed Scope of Work and Cross Section

The culvert does not need to be extended as part of the proposed roadway work for the Chain of Rocks Bridge replacement project. See the proposed typical cross section in **Exhibit 4**.

2.8.3.6 Vertical Clearances

There is approximately 14.5' of fill material on top of the culvert from centerline of culvert to centerline of I-270.

2.8.3.7 Foundation Borings

Borings were not performed during this study. They will be performed in Phase II of this project.

2.8.3.8 BCR Approvals

The BCR for the water main protective culvert was approved on 1/19/2018.

The approval memos can be found in **Technical Report E: Bridge Condition Report**.

2.8.4 Alternative Development

2.8.4.1 Concept Alternates

Concept alternates were developed to be investigated. A design charrette was held November 14-16, 2016 with staff from IDOT District 8, IDOT Bureau of Bridges and Structures (IDOT-BBS), IDOT-BDE, FHWA-IL Division, FHWA-US, and MoDOT and the consultant team. The meeting goal was to discuss the alternatives developed to date and identify any additional alternatives not previously considered.

The concept alternatives investigated include five river crossing alternatives. These five alternatives are: North Alt A; Adjacent North Alt B; Existing Alignment (utilizing existing substructure elements) Alt C; Adjacent South Alt D; and South Alt E. Three new bridge typical sections were considered. They are: one large structure (S1), two new smaller structures (S2), and two structures; one on existing alignment using part of existing structure (S3) Six interchange concepts were developed to provide geometric continuity between the structure and interchange. They include: Alt 1 - diamond; Alt 2 - PARCLO with Riverview Dr. intersection; Alt 3 – Single Point Urban Interchange (SPUI); Alt 4 - PARCLO with Dunn Rd. intersection; Alt 5 - PARCLO with a roundabout at Dunn Rd.; and Alt 6 – diamond with dual roundabouts at ramps.

Alignment options North Alt A and South Alt E were eliminated due to potential impacts to the Welcome Center on the Missouri side of the river (North Alt), potentially impacting the landfill on the Illinois side of the river (South Alt), the geometric difficulties presented with the new alignment and the Riverview Drive interchange (North Alt) and the probable curved structure that would be necessary to tie in on the Illinois side (South Alt). Interchange options Alt 2, Alt 3, Alt 4, and Alt 5 were eliminated due to either being operationally deficient, would negatively affect Dunn Road, or the cost was too high.

The result of the meeting was the alternatives to be carried forward for further study. The consensus from the charrette was to continue studying: Adjacent North Alt B; Existing Alignment Alt (using existing substructure elements) C, Adjacent South Alt D, Alt 1 - diamond, and Alt 6 – diamond with dual roundabouts. All three structure typical sections were continued for further study as well. Please see **Appendix D** for the Charrette Meeting Minutes.

2.8.4.2 Alternates

From the concepts remaining from the charrette, twelve alternates were created and studied. It was determined that no part of the original structure could be used as part of the new structure. Therefore, all elements including Alt C, utilizing portions of the existing structure on existing alignment, were eliminated. Also as part of this evaluation of alternates, a “hybrid” alignment was developed. This hybrid alignment proposes two new structures, with one structure utilizing the

existing alignment. Thirdly, after the charrette, it was determined by MoDOT, that the structures carrying I-270 over Riverview Dr. would need to be replaced due their age. Therefore, no alignments utilizing the existing I-270 alignment at the Riverview Drive structures were considered from this point on. The twelve alternates to be studied further were:

- B-S1-1,6: North Alignment, Single Structure, Diamond Interchange or Roundabout Interchange
- B-S2-1,6: North Alignment, Twin Structures, Diamond or Roundabout Interchange
- B-S3-1,6: North Hybrid Alignment, Twin Structures, Diamond or Roundabout Interchange
- D-S1-1,6: South Alignment, Single Structure, Diamond or Roundabout Interchange
- D-S2-1,6: South Alignment, Twin Structures, Diamond or Roundabout Interchange
- D-S3-1,6: South Hybrid Alignment, Twin Structures, Diamond or Roundabout Interchange

There were several aspects that were considered when analyzing these alternates. Factors included in the analysis were: span configuration in relationship to cost; structure design that complies with the Illinois Department of Natural Resources (IDNR)'s no-rise requirement for the water surface elevation; shoulder width in terms of safety; interchange traffic operations; concept interchanges at Riverview Drive and how they relate to each alignment; ability to access the structure for maintenance and inspection, and overall costs of each alternative. All alternatives include replacing the Riverview Drive interchange with a diamond design, so that the interchange ramps would be compatible with the interstate mainline. See **Appendix D-Design Charrette Meeting Minutes** for maps of the alternatives.

2.8.4.3 Preferred Alternate

The preferred alternate has been determined. It will include twin structures, with the northern structure utilizing the existing I-270 alignment and the southern structure constructed adjacent to the northern structure. This alternative is labeled Alternative D-S3. This alternative was chosen for the following reasons:

- Twin structures will be more easily accessed for inspection than one structure
- Twin structures are less expensive than a single structure, in part because a single structure would require more cross bracing, and would require an additional drilled shaft at each river pier
- The southern alignment provides the best geometric solution of the alternatives studied
- Will have the least impacts to the Visitor's Center property
- Possible to avoid the landfill on the Illinois side

The main reasons the other alternatives were not selected were varied. The alternates including one single structure were eliminated because the structure was inaccessible with current equipment for inspection. The alternates north of the existing structure were eliminated because of the possible impact to the Missouri Visitor's Center by requiring large retaining walls, the possibility of Dunn Road needing to be realigned and thus, ROW would be included, and lastly because the geometrics would be problematic with the Riverview Drive interchange. The alternates that were further south than the south hybrid option (Alternative D-S3) would most

likely impact the landfill that is just south of the current I-270 on the Illinois side. To read the detailed reasons why alternates were eliminated, please refer to the Discussion of Alternative Analysis and Findings Meeting Minutes dated June 13, 2017 in **Appendix C**. Please see **Exhibit 4** for the preferred alternative typical sections and **Exhibit 8** for the preferred alternative plan and profile.

2.8.4.4 Value Engineering Study

Value Engineering (VE) study was held November 13-17, 2017 with staff from IDOT-District 8, IDOT-BBS, IDOT-BDE, FHWA, MoDOT and Amec Foster Wheeler (now known as the Wood Group). The goal of the VE study was to find recommendations for providing a better quality design at a lower cost. The VE Study can be found in **Appendix E**.

2.9 Traffic Signal Modernization / Installation

The diamond-type interchange at Riverview Drive satisfies MoDOT's EA. There are no traffic signals at the interchange today. The proposed diamond-type interchange may require signalization in the future. Further analysis, in Phase II, will consider when projected traffic volumes would satisfy traffic signal warrants.

2.10 Lighting

Lighting currently exists along I-270 within the project limits and along Riverview Drive. Both Departments of Transportation own each jurisdiction's lighting along I-270 and are responsible for maintenance. Lighting along Riverview Drive is owned by MoDOT. Lighting analysis and design will be performed in Phase II.

Cost for the proposed lighting along I-270 will be the responsibility of each state the lighting is located within. Cost for proposed lighting along Riverview Drive will be MoDOT's responsibility.

2.11 Sidewalk/ADA Requirements

Pedestrian access is prohibited on all interstate highways. Pedestrian access along Riverview Drive does not currently exist. Pedestrian access will be further evaluated during Phase II of the project.

2.12 Bikeways/Trails

There are two bicycle trails within the project study area. One is the bicycle trail owned and maintained by Great Rivers Greenway (GRG) that utilizes the historic Old Chain of Rocks Bridge located approximately a quarter mile south of the Chain of Rocks Bridge. The trail begins in Missouri where it connects into the St. Louis Riverfront Trail, crosses the Old Chain of Rocks Bridge, and continues along Chain of Rocks Road located on Chouteau Island. GRG has proposed to extend the St. Louis Riverfront Trail to the north under the Chain of Rocks Bridge in Missouri. A second trail is located on the east side of Chouteau Island named the Eagle Points Trail which runs north-south along the Chain of Rocks Canal levee. This trail is owned and operated by the MEPRD. Please refer to **Exhibit 3**.

During the Phase I study, IDOT met with GRG and MEPRD to discuss project specifics and the measures being taken to avoid impacts to their bicycle trails. GRG also served as a member of the Community Advisory Group (CAG). Additional coordination with GRG regarding project specific decisions regarding bicycle facilities took place. For the minutes of meetings with GRG and MEPRD, please refer to the **Technical Report I: Public Involvement Record-Stakeholder Meetings**. The additional GRG coordination can be found in **Appendix A-Bicycle & Pedestrian Coordination**.

IDOT conducted a Bikeway and Pedestrian Needs Assessment in accordance with Chapter 17 of the BDE Manual for this project. This assessment concluded that bicycle and pedestrian accommodations warrants were not met for this project. This is due in part to the fact that I-270 is an interstate, where bicycle and pedestrians are prohibited in Illinois. Also because the historic Old Chain of Rocks Bridge that is located a quarter mile south of I-270, is a facility that is exclusively for bicycle and pedestrian use and therefore already provides a means to cross the river. For this coordination and all coordination regarding bicycle and pedestrian accommodations, please see **Appendix A**.

2.13 Pedestrian Overpass / Subways / Other Facilities

There are no pedestrian overpasses/subways/or other facilities within the project limits.

2.14 Mass Transportation

No transit services travel across the I-270 corridor between the two states.

2.15 Utility Conflicts

Table 6 is a summary of the types of utilities that are within the project area and the estimated lengths of reimbursable and non-reimbursable relocations. Much of the relocations arise from shifting the roadway lanes to the south and creating a wider footprint. Two pump stations are located on Missouri State right of way within the project limits belonging to Metropolitan St. Louis Sewer District (MSD). Further coordination is required in Phase II to determine if these will be required to be relocated. Detailed locations for the conflicts are tabulated in **Exhibit 9**.

TABLE 6: UTILITIES			
Utility Company	Type	Potential Involvement	Reimbursable
			(R) – Reimbursable (NR) – Non-Reimbursable
Ameren Illinois	Electric (Buried)	See Exhibit 8	0 ft. (R) 11,161 ft. (NR)
Ameren Illinois	Electric (Aerial)	See Exhibit 8	0 ft. (R) 0 ft. (NR)
AT&T	Telephone	See Exhibit 8	0 ft. (R) 812 ft. (NR)
City of St. Louis Water Division	Water	See Exhibit 8	0 ft. (R) 2,687 ft. (NR)

TABLE 6: UTILITIES			
Utility Company	Type	Potential Involvement	Reimbursable
			(R) – Reimbursable (NR) – Non-Reimbursable
Enable Gas	Natural Gas (Buried)	See Exhibit 8	0 ft. (R) 0 ft. (NR)
Illinois American Water	Water	See Exhibit 8	0 ft. (R) 150 ft. (NR)
Illinois Department of Transportation	Fiberoptic	See Exhibit 8	0 ft. (R) 3,826 ft. (NR)
Laclede Gas	Natural Gas (Buried)	See Exhibit 8	0 ft. (R) 703 ft. (NR)
Metropolitan St. Louis Sewer District	Sanitary Sewer	See Exhibit 8	0 ft. (R) 0 ft. (NR)
Missouri Department of Transportation	Cable TV	See Exhibit 8	0 ft. (R) 90 ft. (NR)
Missouri Department of Transportation	Electric (Buried)	See Exhibit 8	0 ft. (R) 9,181 ft. (NR)
Missouri Department of Transportation	Fiberoptic	See Exhibit 8	0 ft. (R) 600 ft. (NR)
Ameren Illinois	Electric (Buried)	See Exhibit 8	0 ft. (R) 11,161 ft. (NR)
Ameren Illinois	Electric (Aerial)	See Exhibit 8	0 ft. (R) 0 ft. (NR)

2.16 Encroachments

There are no encroachments onto right-of-way.

2.17 Mail Delivery

There is no mail service along I-270.

2.18 Landscape / Roadside Development

All areas disturbed by construction activities will be restored to turf cover through normal seeding practices or protected with an acceptable lining. A National Pollutant Discharge Elimination System (NPDES) permit will be required as construction disturbance will exceed one acre. See **Exhibit 10** for the Erosion and Sediment Control Analysis Form and Soils Report.

It is estimated that approximately 14 acres of tree removal will be required. Trees will be replaced in accordance with Department policy. It will be determined in Phase II if any trees can be replaced along the project corridor.

2.19 Construction Site Stormwater Pollution Control

A Stormwater Pollution Prevention Plan (SWPPP) using accepted erosion control methods will be included in the Phase II plans and specifications to address erosion control measures for in-stream work, protection of wetlands and threatened species, and areas disturbed by construction.

2.20 At-Grade Railroad Crossings

There are no existing at-grade rail crossings on I-270 within the project limits.

2.21 Surveillance

There is a traffic camera in place west of the interchange of I-270 and Riverview Drive facing west. There are surveillance cameras located in Illinois along I-270 at Mile Marker 0.5, facing east, and at Mile Marker 1.0, facing west. Traffic cameras will be relocated in the same manner as existing lighting along the corridor or as directed by IDOT District 8.

2.22 Pump Stations

Two pump stations are located on Missouri State right of way within the project limits belonging to Metropolitan St. Louis Sewer District (MSD). The pump stations are not currently effected by the proposed improvements in Missouri.

2.23 Retaining Walls

There are no retaining walls within the project corridor. No retaining walls are planned at this time.

2.24 Public Educational Facility Entrances

There are no public educational facility entrances within the limits of the project.

3.0 ENVIRONMENTAL RESOURCE SUMMARY

The following is a list of the environmental clearances and associated dates:

- IDOT Special & Hazardous Waste: December 14, 2017
- MoDOT Special & Hazardous Waste Coordination: Email dated December 19, 2017
- IDOT Natural Resource Review: October 5, 2017
- MoDOT Biological Coordination: February 14, 2018
- IDOT Cultural Resource Clearance: Conditional No Adverse Effect February 14, 2018
- MoDOT Cultural Resource Coordination: Missouri Department of Natural Resources letter dated May 20, 2016
- Wetland Clearance: February 22, 2018

The following is a list of the environmental survey documents that can be found in **Appendix B Environmental Correspondence**

- Environmental Survey Request (ESR) May 4, 2015, with addendums on June 9, 2015 and September 15, 2017
- Mammal Survey Report August 2016
- Avian Report September 2016
- Wetland Determination Report October 2016

- Preliminary Environmental Site Assessment (PESA) October 2016

3.1 Special & Hazardous Waste

The PESA revealed the Chain of Rocks Recycling & Disposal Facility was in very close proximity to the existing I-270 on the Illinois side. This site is occupied by a closed landfill. The landfill has been avoided by the potential preferred alternative. Please see the PESA Report in **Appendix B** for the location of map of the landfill.

3.2 Biological Resources

3.2.1 Wetlands

Wetland delineations were conducted for the project by the Illinois Natural History Survey (INHS). Thirty-four sites met the three criteria of a wetland. Please refer to **Exhibit 11** for the wetland map. Anticipated wetland impacts of the potential preferred alternative and acres of compensation can be found in the WIE in **Appendix B**.

3.2.2 Coordination with the U.S. Fish & Wildlife Service (USFWS) and the Illinois Department of Natural Resources (IDNR)

Coordination with the USFWS and IDNR was conducted and resulted in the following commitments:

- In order to not adversely affect the listed Northern Long Eared Bat and Indiana Bat, trees three (3) inches or greater in diameter at breast height will not be cleared April 1 through September 30.
- In order to not adversely affect the listed Pallid sturgeon the following conservation measures are to be implemented by the contractor:
 1. No explosives shall be used during demolition of the existing structures or during construction of the new structures.
 2. During demolition, the superstructure shall not be dropped into the river.
 3. To avoid the spawning season for the Pallid sturgeon, piles shall not be driven between April 15 and June 30.

All USFWS and IDNR coordination documents can be found in **Appendix B**.

3.2.3 Trees

Approximately 9.5 acres of trees in Missouri and 4.5 acres of trees in Illinois for a total of 14 acres will be removed. The trees will be replaced in accordance with IDOT's D&E-18 policy "Preservation and Replacement of Trees."

3.3 Cultural Resources

3.3.1 Tribal Coordination

Consultation with the Osage Nation and Miami Tribe of Oklahoma took place and resulted in the following commitments:

- If any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is

discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery.

- The Osage Nation Historic Preservation Office has requested a copy of the planned cultural reconnaissance survey report.

Please see **Appendix B** for the tribal coordination.

3.3.2 Archaeology

The Illinois State Archaeological Survey (ISAS) completed a review of known archaeological resources within the Area of Potential Effect and no sites will be impacted by the potential preferred alternative.

3.3.3 Construction Vibration

To address potential construction vibration impacts to the existing Chain of Rocks Bridge over the Mississippi River Bridge directly adjacent to the project and the truss bridge, locally known as the Old Chain of Rocks Bridge, located approximately a quarter mile downstream of the project; a geotechnical investigation shall be included in Phase II of the project that will include a risk analysis of construction induced vibrations on nearby transportation structures. The Phase II Consultant shall provide recommendations of mitigation measures based on the geotechnical findings.

Proposed ROW is required from a parcel owned by Great Rivers Greenway (GRG). This parcel lies adjacent to the Riverview Drive interchange in Missouri. See **Exhibit 8** for reference. Through coordination with FHWA, MoDOT, and GRG it has been determined the proposed ROW needed does not conflict with any existing or planned recreational use of the parcel, as planned by GRG. As a result, FHWA has determined the proposed acquisition will have no impact to any Section 4(f) resources. See **Appendix C** for this coordination.

3.4 Air Quality

In accordance with the IDOT-IEPA “Agreement on Microscale Air Quality Assessments for IDOT Sponsored Transportation Projects,” this project is exempt from a project-level carbon monoxide air quality analysis because the highest design-year approach volume is less than 62,500 ADT.

3.5 Noise

A noise assessment was conducted to determine whether a noise analysis was warranted for the project. It was determined that the project is considered a “Type 1 Project” when considering noise because the project involves new construction of a roadway. A Type 1 project normally necessitates the completion of a noise analysis to determine the impacts of a project on potential noise receptors. After a review of the project study area for noise receptors, it was determined that there was one receptor located on the Illinois side. This receptor is to be displaced by the potential preferred alternative; therefore, the project essentially had no receptors and it was determined a noise analysis was not needed.

The noise assessment also determined that MoDOT will conduct a noise analysis on the Riverview Drive interchange once a final design is determined. Please see **Appendix B** for the Noise Coordination.

3.6 Floodplain

According to Flood Insurance Rate maps, the project route crosses the Special Flood Hazard Area (land area subject to inundation by a flood that has a 1% probability of being equaled or exceeded in any given year) of the Mississippi River between Riverview Drive and the Chain of Rocks Canal and Watkins Creek in the northwest quadrant of I-270 and Riverview Drive. Flooding, standing water, and saturated soils may be encountered in these areas, particularly during periods of high or extended rainfall or spring snowmelt.

The floodplain east of the Mississippi River, on the Illinois side, consists of cultivated land containing row crops and undeveloped, forested areas. The floodplain also has a private levee that mitigates floodwaters resulting from more frequent storm events. The floodplain west of the main channel, on the Missouri side, is much like the Illinois side. The floodplain consists of cultivated land, forested areas, and a levee. Please refer to **Exhibit 11** for the floodplain map

All measures have been taken and will continue to be taken to minimize impacts to the floodplain. If the floodplain is determined to be filled during the design phase, IDOT will coordinate with the state and local agencies regarding required permits.

3.7 Permits

It is anticipated the project will require the following permits:

- Section 401 Water Quality Certification from the IEPA and MDNR
- Section 402 NPDES permit from the Illinois Environmental Protection Agency (IEPA) and the Missouri Department of Natural Resources (MDNR)
- Section 10/404 permit from the USACE
- Section 9 permit from the USCG
- Floodplain permit
- IDNR OWR permit

The requirement of a Section 408 permit for potential impacts to the levees was discussed with the USACE. It was decided by the USACE that the proposed bridge work does not warrant a Section 408 authorization at this time. Please see the email dated June 21, 2017 from the USACE ICW Program Manager, Ed Rodriguez, documenting this decision in **Appendix B**.

4.0 PUBLIC INVOLVEMENT

The study was conducted using the Context Sensitive Solutions (CSS) process. Through the CSS process, it was discovered the public's main concerns were: maintaining the surrounding area for recreational purposes, the traffic congestion on and near the bridge especially at Riverview Drive in Missouri, keeping the bridge open during construction as it is important regionally and nationally for the movement of goods and services, and that the project minimize

impacts to the environment. A Stakeholder Involvement Plan (SIP) was completed in the beginning of the project. The SIP outlined how public involvement was going to be conducted throughout the project. Please see **Technical Report I** for the **Public Involvement Record** for a copy of the SIP.

4.1 Public Meetings

As part of the CSS process, IDOT held its first public meetings on June 30, 2016 and July 13, 2016, in Illinois and Missouri, respectively. A total of 58 people signed in at the meetings. The purpose of the meetings was to inform the general public of the planning process for the project, discuss their concerns regarding the current transportation challenges within the project area on I-270, introduce opportunities for the public to become involved, receive comments from the public, and to inform the public of the project schedule. Attendees were able to provide written comments at the meeting, by mail, or through the project website. The most common concerns were that the bridge is too narrow, not enough lanes for traffic, not enough shoulder for emergency stopping, and the bridge needs to remain open during construction.

A second public meeting to show the public the potential preferred alternative was held in Illinois on January 17, 2018. A total of 82 people signed in at the meeting. The purpose of the meeting was to: explain what alternatives were considered; present the potential preferred bridge replacement alternative; receive comments from the public; explain how IDOT addressed concerns on what is needed for the project; and inform the public of the overall project schedule. Attendees were able to provide written comments at the meeting, by mail, or through the project website. The most common comments were: the plan to reconstruct the bridge is good, would like for the project to be constructed as soon as possible, and to keep the existing bridge open during construction.

Public meeting announcements, a list of public meeting attendees, public meeting brochures and displays, and comments and responses can be found in **Technical Report I: Public Involvement Record**.

4.2 Community Advisory Group (CAG) Meetings

A CAG was formed for the project. The first CAG meeting for the project was held on October 18, 2016, at Southwestern Illinois College (SWIC) in Granite City, Illinois. The purpose of the first CAG meeting was to introduce the project, explain the IDOT planning and CSS process, and listen to the CAG members concerns and interests. Members of the CAG raised several important issues during the meeting: 1) maintaining the area for recreational purposes is important; 2) there is a need to address traffic congestion on and near the bridge, especially at Riverview Drive in Missouri, 3) the bridge is important regionally and nationally for the movement of goods and services; 4) water quality should be considered when constructing the bridge; 4) environmental sensitivity is important; and 5) consideration of the levees and flooding during the project planning, design, and construction.

With the help of the CAG, a project problem statement was also developed from issues raised during the CAG meeting: ***The existing bridge carrying I-270 over the Mississippi River connecting Illinois and Missouri is aging and in need of continual repairs. There is a need to provide a sustainable long-term solution that increases safety, accommodates future traffic growth, and provides for the continued movement of regional and national goods and services while preserving the environmental, recreational and economic viability within the project area.***

A second CAG meeting was held on December 13, 2017 at the same location as CAG #1. The purpose of the second CAG meeting was to discuss what has happened since the last CAG meeting and to present the potential preferred alternative. The CAG members viewed the potential preferred alternative and thought the alternative addressed the issues expressed in the project problem statement.

A list of CAG members, CAG meeting summaries, and CAG meeting presentations can be found in **Technical Report I: Public Involvement Record**.

4.3 Stakeholder Meetings

Multiple stakeholder meetings were held throughout the project to gain valuable input from key stakeholders throughout the region. **Table 8** lists the stakeholder groups that were met with throughout the project. All stakeholder meeting summaries can be found in **Technical Report I: Public Involvement Record**.

TABLE 7: STAKEHOLDER MEETINGS	
City of Madison	Metro East Parks & Recreation District
City of St. Louis	Metropolitan Sewer District
Great Rivers Greenway	St. Louis Regional Freightway
Heartlands Conservancy	St. Louis Water Division
IL Department Natural Resources	Waste Management
Lighthouse Development	U.S. Army Corps of Engineers
MoDOT	U.S. Coast Guard
Madison County	

4.4 Newsletters

Two newsletters were sent out during the project study. The first newsletter was sent out in December 2016 and the second in December 2017. Please see the **Technical Report I: Public Involvement Record** to read the newsletters.

4.5 Website

A project website was provided and updated throughout the Phase I Study. www.idot.illinois.gov/projects/i-270-over-the-mississippi-river. The website provided an overview of the project scope and schedule, included all of the public involvement meeting materials, and provided a contact email for those wishing to make comments.

5.0 TRANSPORTATION MANAGEMENT PLAN & RECOMMENDATIONS

The project can be constructed using normal practices. No overnight lane closures will be required on I-270. Temporary pavement will be required in the depressed median of I-270 to accommodate four-lane traffic throughout the corridor. Temporary ramps will be constructed to keep the Riverview Drive interchange open during construction. Lane restrictions will be in effect during construction. The following describes the suggested stages of construction.

Stage 1

In Stage 1 the eastbound structures will be constructed:

- During Phase 1A, traffic will be maintained on the existing structures over the river and over Riverview Drive. Temporary pavement will be placed in the median on the Illinois approach.
- In Phase 1B, temporary pavement will be placed in the median on the Missouri approach. Work will begin constructing the eastbound River bridge and eastbound Riverview Drive bridge, much of the proposed pavement for the new eastbound lanes, as well as the new ramp pavement.
- In Phase 1C, traffic will shift onto the temporary pavement in the existing median to further complete construction for the new eastbound lanes. Traffic will still utilize the existing structures and alignments over Riverview Drive and the Mississippi River. The new eastbound entrance ramp will now be open and will utilize the proposed eastbound structure to route traffic onto eastbound I-270.
- Phase 1D, will shift eastbound traffic onto the new eastbound structures over Riverview Drive and the Mississippi River. The proposed median will be constructed on the Illinois approach.

Stage 2

In Stage 2 the westbound structures will be constructed:

- In Phase 2A, traffic will shift westbound onto the new eastbound bridges and most of the newly constructed eastbound lanes. Construction will begin on new westbound pavement.
- In Phase 2B, traffic will shift onto the new westbound entrance ramp. Westbound traffic will utilize the newly constructed westbound structure over the River to exit onto Riverview Drive. Work will continue on the ramps at Riverview Drive.
- In Phase 2C, there will be a shift of all westbound traffic onto the new westbound bridges. The remaining ramps will then open in their final configurations. The area immediately before the eastbound exit ramp will be constructed, completing the construction.

Plan sheets depicting the maintenance of traffic can be found in **Technical Report J: Traffic Management Plans (TMP)** and **Technical Report K: Structure Typical Section Technical Memorandum**

6.0 ESTIMATE OF COSTS

The estimated construction cost of the project is \$222,626,065. A detailed cost estimate is included in **Exhibit 12**.

7.0 COMMITMENTS

7.1 Environment

Commitment 1: To protect the state and federally listed Pallid Sturgeon during the spawning season:

1. No explosives shall be used during demolition of the existing structures or during construction of the new structures.
2. During demolition, the superstructure shall not be dropped into the river.
3. To avoid the spawning season for the Pallid Sturgeon, piles shall not be driven between April 15 and June 30.

Commitment 2: The Bat Bridge Assessment, completed in August 2016, is valid for two years and an expired assessment will need to be updated prior to construction. Per email discussion (IDOT-BDE) with Mr. Matt Mangan with the USFWS, "Once the dates of construction are known, the USFWS will be contacted to discuss whether additional survey is warranted."

Commitment 3: To protect the federally endangered Indiana Bat and threatened Northern Long-Eared Bat, trees three inches or greater in diameter at breast height will not be cleared April 1 through September 30.

Commitment 4: To address potential construction vibration impacts to the existing FAI 270 over the Mississippi River Bridge directly adjacent to the project and the truss bridge, locally known as the Old Chain of Rocks Bridge, located a quarter mile downstream of the project; a geotechnical investigation shall be included in Phase II of the project that will include a risk analysis of construction induced vibrations on nearby transportation structures. The Phase II Consultant shall provide recommendations of mitigation measures based on the geotechnical findings.

Commitment 5: If any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery.

Commitment 6: The Osage Nation Historic Preservation Office has requested a copy of the planned cultural reconnaissance survey report, if one is deemed necessary.

Commitment 7: Investigate the possibility of filling in the culvert (SN 060-2013) during Phase II.

Commitment 8: Wetlands adjacent to the work area and not impacted by this project shall be marked by a fence not allowing equipment access during construction.

Commitment 9: Phase II will investigate alternative slope treatments in areas where slopes exceed 3:1.

7.2 Other Agencies

MSD: Contact: John Alexander (JCAlex@stlmsd.com)

Drainage plans within the state of Missouri will be reviewed by MSD. MSD prefers to review plans prior to 50 percent level. MSD provided a rough outline for time of MSD review including a general three-week initial review followed by a two-week review. Depending on whether a permit is required, either four sets or nine sets of plans will be required.

St. Louis Water Division:

Contacts: Curt Skouby - St. Louis Water Division Director of Public Utilities (cskouby@stlwater.com, 314-633-9012), Pat Baldera – St. Louis Water Division Chain of Rocks Plant Manager (pbaldera@stlwater.com, 314-592-8205)

Construction plans specs will include Curt and Pat's contact information along with a commitment that they will be contacted by the contractor prior to work and inform them of their construction schedule allowing the St. Louis Water Division to increase its monitoring and water sampling during certain times (i.e. when constructing on west bank, installing piers, removing piers).

8.0 PROJECT COORDINATION

For summaries of all coordination meetings and monitoring meetings, please see **Appendix C**.