Council Bluffs Interstate System Improvements Project
Pottawattamie County, Iowa, and Douglas County, Nebraska

Project Number: IM-080-1(318)0—13-78

TIER 2, SEGMENT 1
ENVIRONMENTAL ASSESSMENT
AND PROPOSED SECTION 4(f) *DE MINIMIS* IMPACT FINDING

Prepared in Accordance with:
The National Environmental Policy Act, as amended
42 USC 4332(2)(c)
49 USC 303
by the
U.S. Department of Transportation
Federal Highway Administration
and
Iowa Department of Transportation
and
Nebraska Department of Roads

The signatures are considered acceptance of the general project location and concepts described in the environmental document unless otherwise specified by the approving officials. However, such approval does not commit to approve any future grant request to fund the preferred alternative.

10/31/06 — Date of Approval
Michael LaPietra — For Federal Highway Administration

10-25-06 — Date of Approval
James Rost — For Iowa Department of Transportation

10-25-06 — Date of Approval
Arthur B Yonkey — For Nebraska Department of Roads

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

Philip Barnes, P.E.
Division Administrator
Federal Highway Administration
105 6th Street
Ames, IA 50010
Telephone: 515-233-7300

James P. Rost, Director
Office of Location and Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010
Telephone: 515-239-1225

Arthur Yonkey
Planning & Project Development Engineer
Nebraska Department of Roads
1500 Highway 2
Lincoln, NE 68509-4759
Telephone: 402-479-4795

The purpose of this project is to address some of the existing and future transportation needs of the region by upgrading mobility through the Interstate 80 (I-80) corridor, improving the condition of the roadway, reducing traffic congestion and crashes, adding capacity, strengthening system linkages, correcting functional design issues, and accommodating planned development on I-80 from a point just east of the I-80/I-480/U.S. 75 system interchange in Omaha, Nebraska, to a point in Council Bluffs, Iowa, just east of the I-80 Missouri River bridge.

RESOURCE ANALYSIS CHECKLIST

The first column with a check means the resource is in the Segment 1 Study Area. The second column with a check means the impact on the resource warrants more discussion in this document. Resources without a check in both the first and second column have been reviewed and are included in the Appendix A summary.

		SOCIOECONOMIC			NATURAL ENVIRONMENT
☒	☒	Land Use	☒	☒	Wetlands
☒	☐	Community Cohesion	☒	☒	Water Resources
☒	☒	Relocation Potential	☐	☐	Wild and Scenic Rivers
☒	☐	Churches and Schools	☒	☒	Floodplains
☒	☐	Railroads and Utilities	☒	☐	Wildlife and Habitat
☐	☐	Energy	☐	☐	Farmland
☒	☐	Public Services	☒	☒	Threatened and Endangered Species
☒	☐	Environmental Justice	☒	☐	Vegetation
☒	☐	Transportation	☒	☐	Ecosystem
☒	☒	Right-of-Way	☐	☐	Coastal Barriers
☒	☒	Construction	☐	☐	Coastal Zones
☒	☐	Pedestrians and Bicyclists			
☒	☐	Economics			
		CULTURAL			**PHYSICAL**
☒	☒	Archaeological Sites	☒	☒	Noise
☒	☒	Historic Sites or Districts	☒	☒	Air Quality
☒	☐	Recreation	☒	☒	Regulated Materials
☒	☒	Section (4(f) Properties	☒	☐	Visual Resources and Aesthetics

☒	**CONTROVERSY POTENTIAL:** **Controversy is minimal because the Segment 1 Project is primarily within existing right-of-way, with small portions of adjacent land needed for the Segment 1 Project. Expansion of the Interstate by two or more lanes near residential areas in Nebraska could result in some traffic noise encroachment concerns.**
☒	**SECTION 4(f):** **Although use of some property from Deer Hollow Park and Omaha's Henry Doorly Zoo cannot be feasibly and prudently avoided, the use has been minimized in the design process. The amounts of property affected are minimal and do not affect the function of the resources.**

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS, ABBREVIATIONS, AND SHORT FORMS

APE	Area of Potential Effect
AST	aboveground storage tank
BE	Biological Evaluation
BNSF	Burlington Northern Santa Fe Railway
CBIS	Council Bluffs Interstate System
CBIS Improvements Project	proposed improvements to the CBIS
CBIS Study Area	the I-80, I-29, and I-480 corridors
CEDS	Comprehensive Economic Development Strategy
CEQ	Council on Environmental Quality
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
dB	decibel
dBA	A-weighted decibel
DOI	Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FR	Federal Register
HDR	HDR Engineering, Inc.

I-29	Interstate 29
I-80	Interstate 80
I-480	Interstate 480
IAC	Iowa Administrative Code
IGS	Iowa Geological Survey
Iowa DNR	Iowa Department of Natural Resources
Iowa DOT	Iowa Department of Transportation
LAWCON	Land and Water Conservation Fund Act of 1965
L_{eq}	energy equivalent sound level
LOS	level of service
LRTP	Long Range Transportation Plan
LUST	leaking underground storage tank
MAPA	Metropolitan Area Planning Agency
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NDEQ	Nebraska Department of Environmental Quality
NDOR	Nebraska Department of Roads
NEPA	National Environmental Policy Act of 1969
NGPC	Nebraska Game and Parks Commission
NHPA	National Historic Preservation Act of 1966
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSHS	Nebraska State Historical Society
NWI	National Wetlands Inventory
P.L.	Public Law
PEM	palustrine emergent
PEMA	palustrine emergent temporarily flooded
PEMC	palustrine emergent seasonally flooded
PFOA	palustrine forested temporarily flooded
RCRIS	Resource Conservation and Recovery Information System
REC	recognized environmental condition
ROD	Record of Decision

ROW	right-of-way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
Segment 1	the westernmost segment of the CBIS
Segment 1 Project	the proposed action for Segment 1
Segment 1 Study Area	the Nebraska section of I-80 and the I-80 Missouri River bridge as well as a small portion of I-80 in Iowa
SHPO	State Historic Preservation Office
SHSI	State Historical Society of Iowa
SQG	small quantity generator
T&E	threatened or endangered
Tier 1 EIS	Tier 1 Final Environmental Impact Statement for the Council Bluffs Interstate System Improvements Project
TMDL	total maximum daily load
TNM	Traffic Noise Model
TRIS	Toxic Release Inventory System
U.S. 6	U.S. Highway 6
U.S. 75	U.S. Highway 75
U.S. 275	U.S. Highway 275
UA	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
vpd	vehicles per day
WHTC	Western Historic Trails Center
Zoo	Omaha’s Henry Doorly Zoo

SECTION 1

PURPOSE OF AND NEED FOR ACTION

SECTION 1
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This Environmental Assessment (EA) presents the results of detailed studies and analyses conducted to determine the potential impacts of proposed improvements to one segment of the Council Bluffs Interstate System (CBIS) in the Omaha/Council Bluffs metropolitan area. Overall, the proposed improvements to the CBIS (CBIS Improvements Project) include five segments encompassing approximately 18 mainline miles of interstate and 14 interchanges along Interstate 80 (I-80), Interstate 29 (I-29), and Interstate 480 (I-480). The CBIS is predominantly located in the city of Council Bluffs, Iowa (Council Bluffs), but also extends across the I-80 Missouri River bridge into the city of Omaha, Nebraska (Omaha). The subject of this EA is the westernmost segment of the CBIS (Segment 1), described in Section 1.1, Background.

This EA includes the following information:

- This section discusses the proposed action and the area studied, the purpose of the CBIS Improvements Project, and the need for the project based on the transportation problems that currently exist or are expected in the future.
- Section 2, Alternatives, identifies the range of alternatives considered for Segment 1, the alternatives carried forward for further study in this EA, and the preferred alternative for Segment 1. It also summarizes the potential environmental impacts of the proposed action for Segment 1 (the Segment 1 Project).
- Section 3, Affected Environment and Environmental Consequences, describes the general environment for each resource affected by the Segment 1 Project. It also presents the analysis of potential environmental impacts of the Segment 1 Project along with possible methods to avoid, minimize, and mitigate impacts.
- Section 4, Disposition, lists the agencies and organizations that will receive copies of this EA as well as the locations at which this EA will be available for public review.
- Section 5, Comments and Coordination, summarizes the agency coordination and public involvement efforts in conjunction with the Segment 1 Project.
- Section 6, Conclusion and Recommendation, includes a summary of resource impacts and notes specific activities to avoid, minimize, or mitigate impacts.
- Section 7, References, lists the sources cited in this EA.

This EA addresses the CBIS Improvements Project as it affects Segment 1. For more information on the overall CBIS Improvements Project, see the Tier 1 Final Environmental Impact Statement for the Council Bluffs Interstate System Improvements Project (Tier 1 EIS), issued on September 9, 2005. The Tier 1 EIS and the Tier 1 Draft EIS are available for review at the locations listed in Section 4.5 of this EA. To minimize duplication of information provided in the Tier 1 EISs, portions of these EISs are incorporated by reference under 40 Code of Federal Regulations (CFR) 1502.21.

The purpose of this EA is to provide a full and fair discussion of the environmental impacts of the Segment 1 Project and to inform decision makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment.

This EA has been prepared in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA).[1]

1.1 BACKGROUND

The interstate system in the Omaha/Council Bluffs metropolitan area was constructed during the late 1950s and early 1960s. Major improvements to the interstate system have occurred in the recent past. The I-80/I-480/U.S. Highway 75 (U.S. 75) system interchange and the 24th Street service interchange in Omaha were fully reconstructed in the early 1990s, and the 13th Street interchange in Omaha was reconstructed in 1998.

In 2001, the Federal Highway Administration (FHWA), Iowa Department of Transportation (Iowa DOT), and Nebraska Department of Roads (NDOR) initiated the CBIS Improvements Project, involving a study of long-term, broad-based transportation improvements along I-80, I-29, and I-480. The agencies decided to conduct the environmental study process in two stages, using a tiered approach.[2]

The Tier 1 EIS reports the results of the evaluation completed for the CBIS Improvements Project. Tier 1 consisted of examining the area's transportation needs, developing alternatives to satisfy those needs, and evaluating the alternatives' potential impacts on the human and natural environment.

Tier 2 consists of evaluating individual segments within the CBIS Improvements Project. FHWA, Iowa DOT, and NDOR recommended the following five segments of independent utility,[3] shown in Figure 1-1, for evaluation as individual projects during the Tier 2 phase:

- Segment 1 is located primarily in Nebraska along I-80, from just east of the I-80/I-480/U.S. 75 system interchange in Omaha to a point in Iowa just east of the I-80 Missouri River bridge.
- Segment 2 is located entirely in Iowa, from just east of the I-80 Missouri River bridge to just east of Indian Creek along I-80 and from the I-80/I-29 West System interchange north along I-29 to just north of the Union Pacific Railroad (UPRR) overpass and south of the 9th Avenue interchange. Segment 2 includes the West System interchange, the Nebraska Avenue interchange, the 24th Street interchange, the bridge over Indian Creek, and the UPRR overpass.
- Segment 3 is located entirely in Iowa along I-80 and I-29. It begins east of the Indian Creek bridge and includes the remainder of the I-80/I-29 overlap section, the I-80/I-29 East System interchange, the South Expressway interchange, and the Madison Avenue interchange. Segment 3 also extends on I-29 south of the I-80/I-29 East System

---

1 NEPA (42 United States Code [USC] 4321-4347) is the foundation of environmental policy making in the U.S. The NEPA process is intended to help public officials make decisions based on an understanding of environmental consequences and take actions that protect, restore, and enhance the environment. It includes an environmental review process early in the planning for proposed actions.

2 "'Tiering' refers to the coverage of general matters in broader environmental impact statements . . . with subsequent narrower statements or environmental analyses . . . incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared" (40 CFR 1508.28).

3 FHWA regulations outline general principles to be used when framing a highway project. One of the principles is independent utility (23 CFR 771.111(f)), meaning that a project must be usable and must be a reasonable expenditure even if no additional transportation improvements are made in the area.

interchange. It includes the U.S. Highway 275 (U.S. 275) interchange and ends approximately 1 mile south of the I-80/I-29 East System interchange.

- Segment 4 is located entirely in Iowa, primarily along I-29. It includes the section of I-480 from the I-480 Missouri River bridge on the Iowa side eastward to the I-29/I-480/West Broadway system interchange, southward along I-29 to the 9th Avenue interchange, and northward along I-29 to the 25th Street interchange.
- Segment 5 is located entirely in Iowa, along a section of I-80 north of the Madison Avenue interchange, including the interchange at U.S. Highway 6 (U.S. 6, also known as Kanesville Boulevard).

The five segments will be analyzed as individual projects, using the appropriate level of NEPA documentation. For Segment 1, FHWA, Iowa DOT, and NDOR have determined that the appropriate level of Tier 2 study to comply with NEPA requirements is an EA. For Segments 2 and 3, preliminary design and the Tier 2 NEPA process is ongoing. For Segments 4 and 5, additional design and environmental studies are not occurring because the other segments have higher priorities in terms of project need and funding availability.

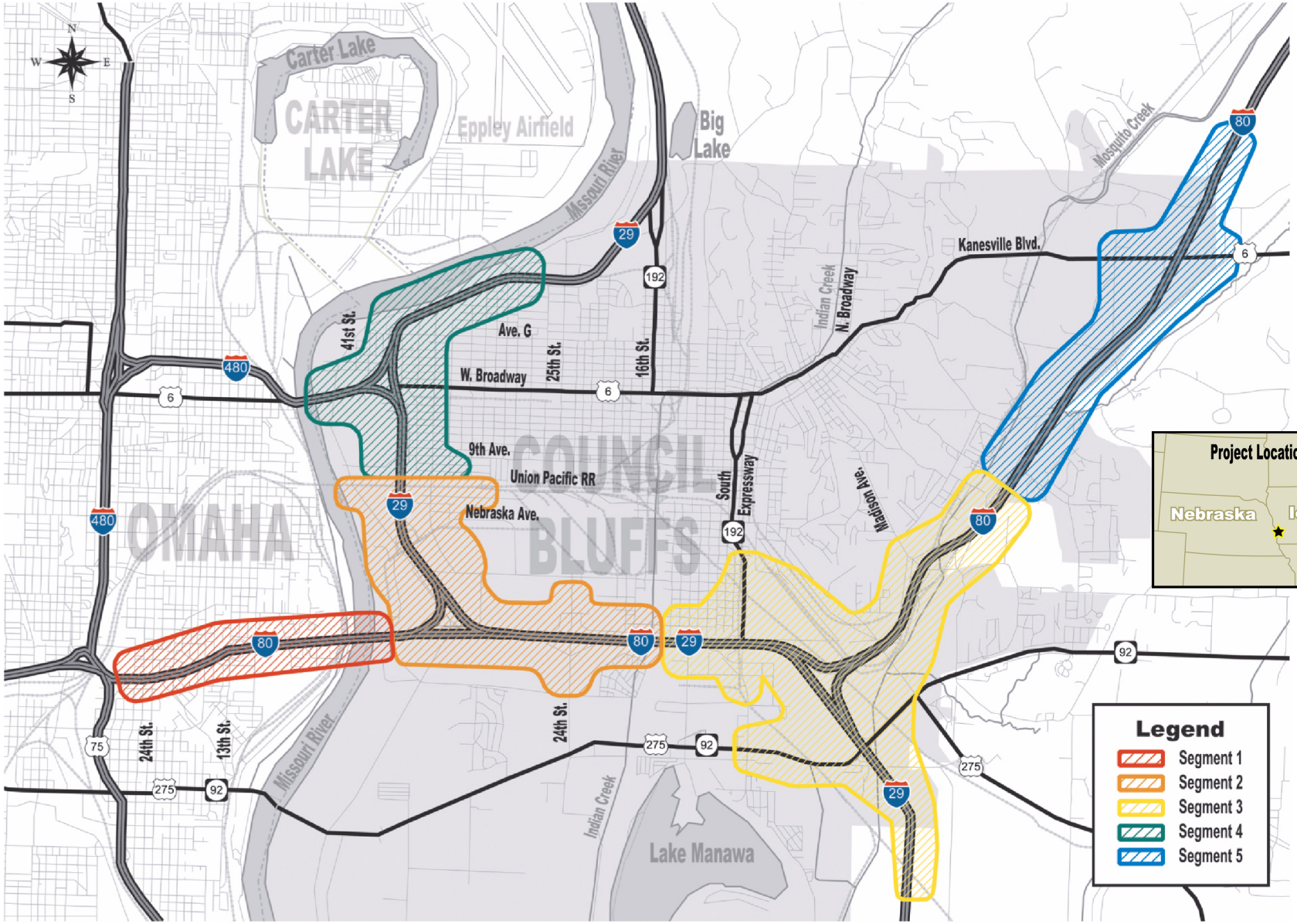
1.2 THE PROPOSED ACTION AND THE STUDY AREA

The proposed action for Segment 1 is limited to improvements to roadway and bridge design on the Nebraska section of I-80 and the I-80 Missouri River bridge as well as a small portion of I-80 in Iowa (the Segment 1 Study Area) (see Figure 1-2). The portion of I-80 east of the bridge is included to provide an interim transition to tie the proposed improvements to the existing I-80/I-29 West System interchange. For more information on Segment 1, see Section 2, Alternatives. The preliminary impact area, the boundary of which is shown in Figure 1-2, is described in Section 2.1.2, Build Alternative.

1.3 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of and need for the CBIS Improvements Project was identified in the Tier 1 EIS and is applicable to the Segment 1 Project with the exception of a difference in the project area. The CBIS Improvements Project is intended to address some of the existing and future transportation needs of the region by upgrading mobility through the I-80, I-29, and I-480 corridors (the CBIS Study Area), improving the condition of the roadways, reducing traffic congestion and crashes, adding capacity, strengthening system linkages, correcting functional design issues, and accommodating planned development. The Segment 1 Study Area only includes I-80.

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Project_Segments.mxd\june06\jcm



Iowa Department of Transportation

NDOR Nebraska Department of Roads

Project Segments

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
June 2006

FIGURE
1-1

1,000 500 0 1,000 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004

Iowa Department of Transportation

NDOR Nebraska Department of Roads

Preliminary Impact Area
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
July 2006

FIGURE
1-2

Z:\Projects\IDOT\339-134_CB_Interstate\SoftwareArcGIS\ArcView81\MXD\CBIS_Segment1_Prelim_Impact_Area.mxd\june06\jcm

SECTION 2

ALTERNATIVES

SECTION 2
ALTERNATIVES

In the Tier 1 EIS, the range of alternatives developed and analyzed for the CBIS Improvements Project included the Construction Alternative, consisting of reconstruction of all or part of the CBIS. The Tier 1 EIS identified the Construction Alternative as the preferred alternative based on the determination that only this alternative would satisfy the current and projected transportation needs of the CBIS, as defined in the purpose and need section of the Tier 1 EIS. The subsequent Record of Decision (ROD), signed on October 26, 2005, confirmed the preferred alternative, and the Construction Alternative became the selected alternative for the CBIS Improvements Project.

This section addresses the alternatives identified for the Segment 1 Project. It states which alternatives were carried forward for detailed study in this EA, identifies the preferred alternative for Segment 1, and discusses the rationale for identifying the preferred alternative. This section also summarizes the potential impacts of implementing each of the alternatives analyzed in this EA.

2.1 RANGE OF ALTERNATIVES FOR SEGMENT 1

In this EA for Segment 1, the refined concept for the Construction Alternative within Segment 1 is referred to as the "Build Alternative." The following describes the Build Alternative as well as the No-Build Alternative, which was also considered for comparison purposes.

2.1.1 No-Build Alternative

The No-Build Alternative represents the baseline conditions for the Segment 1 Study Area. It includes committed capacity and access improvements in the Segment 1 Study Area as well as all planned off-system improvements identified in the Metropolitan Area Planning Agency's (MAPA's) 2025 Long Range Transportation Plan (LRTP). Figure 2-1 is a reproduction of Figure 2-1 from the Tier 1 Draft EIS that identifies and shows the location of off-system improvements.

The Tier 1 process determined that the No-Build Alternative would not meet the project purpose and need requirements; however, the No-Build Alternative has been carried forward for evaluation in this EA in accordance with the NEPA requirement that the impacts of no action be considered. The No-Build Alternative equates to no action and thus provides a benchmark for assessing the magnitude of environmental effects under the Build Alternative.

2.1.2 Build Alternative

The Build Alternative for Segment 1, the limits of which were identified in Section 1.1, Background, is the refined Tier 1 Construction Alternative that is carried forward for analysis in Tier 2. The area of potential impact used in Tier 1 impact evaluations consisted of the combined right-of-way (ROW) needs of the concept and an offset to accommodate design refinements. As the design process continued subsequent to completion of the Tier 1 process, design refinements narrowed the area that would be disturbed by construction. This new impact area is referred to as the preliminary impact area and is the primary basis for impact evaluations in this Tier 2 EA (see Figures 2-2A and 2-2B). The preliminary impact area consists of the

approximate ROW needs of the Build Alternative and includes the area where construction activities could occur. As the design process proceeds, the preliminary impact area may be further refined and reduced in size.

To develop the Build Alternative, several issues needed to be addressed. One was the number of lanes on the I-80 bridge over the Missouri River. It was determined that the bridge would require 10 lanes to serve future traffic needs: four continuous through lanes in each direction and auxiliary lanes between the interchanges east and west of the river to improve ramp operations. The 10 lanes would be accommodated on two five-lane bridges. To transition from the existing I-80 highway to the proposed 10-lane Missouri River bridge, the I-80 capacity on the Nebraska side would be enhanced from east of the I-80/I-480/U.S. 75 system interchange to the Missouri River bridge. This additional capacity would improve traffic operations and provide compatibility with overall CBIS improvements.

The existing interstate corridor through Segment 1 is constrained by physical as well as natural features. A number of residences and boundaries of parks and recreational areas are located close to the existing ROW. Consequently, the preliminary design focused on trying to remain within the existing ROW to the maximum extent possible. The use of retaining walls and other design features was considered for expanding capacity while minimizing the need for new ROW. The design also had to account for existing overpasses and underpasses in Nebraska, and it had to be determined whether those structures would also need to be rebuilt.

Other key design issues included the following (see Figure 1-2 for the location of key features):

- New I-80 Missouri River bridge – Based on alternative analysis completed in Tier 1, it was determined that the new bridge would be located immediately north of and parallel to the existing bridge. The U.S. Coast Guard (USCG) required that the piers of the new bridge align with those of the existing bridge in the Missouri River floodplain.
- Potential Section 4(f) properties[4] – The Segment 1 Project could require acquisition of narrow strips of land of three properties: Deer Hollow Park, Omaha's Henry Doorly Zoo (Zoo), and the Western Historic Trails Center (WHTC). The design of the Segment 1 Project needed to account for widening of I-80 without jeopardizing the function of these areas.
- Kenefick Park – This private park, located on private land of Lauritzen Gardens in Omaha, was recently constructed on a hill north of I-80 and hosts two UPRR steam locomotives. The design of the Segment 1 Project needed to account for widening of I-80 without jeopardizing the integrity of the structure supporting the locomotives.
- Buildings for Warren Industries, Inc. and the I-80 Pump Station in Council Bluffs – Retaining walls will be required to minimize impacts on these buildings, located just north of the existing I-80 Missouri River bridge and roadway.
- Riverview Boulevard overpass – Three variations were considered for rebuilding the Riverview Boulevard overpass across I-80 in Omaha, as follows:

[4] The environmental regulations for applying Section 4(f) to transportation project development can be found in 23 CFR 771.135. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—which authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period of 2005 to 2009—replaces the term "Section 4(f)" with "Section 303" (referring to 49 USC 303, the current section of the Federal code dealing with "Section 4(f)" issues). However, this EA retains the term "Section 4(f)" in keeping with current guidance from FHWA and the state transportation departments.

- Construct a new overpass to the west of the existing overpass. This variation was eliminated due to impacts on Zoo property, including maintenance facilities located west of the existing roadway.
- Construct a new overpass to the east of the existing overpass. This variation was eliminated because of the geometric impacts on the local street system.
- Construct a new overpass at a location similar to the existing overpass in phases to allow continued service on the existing overpass. This variation was selected to maintain service as well as minimize impacts on Zoo property.

East of the Missouri River, the Build Alternative for Segment 1 also includes an interim transition to tie the Segment 1 improvements to the existing I-80/I-29 West System interchange. This interim transition is required until the improvements in Segment 2 are implemented. To address constraints of the existing I-80/I-29 West System interchange, which can only handle two eastbound lanes, the interim modification would provide three eastbound I-80 lanes east of the 13th Street interchange in Nebraska and across the I-80 Missouri River bridge to Iowa, transitioning to two lanes at the West System interchange. The existing I-80 bridge would have its median removed and could support up to five eastbound lanes, but only three lanes would be open to traffic until the Segment 2 improvements have been completed. Upon completion of the Segment 2 improvements, all five eastbound lanes across the bridge would be open to traffic.

2.2 ALTERNATIVES CARRIED FORWARD FOR SEGMENT 1

Neither alternative considered in the range of alternatives was eliminated from further consideration for Segment 1. Therefore, both the No-Build Alternative and the Build Alternative were carried forward for detailed study and analysis. The No-Build Alternative serves as a baseline for comparing the impacts of the Build Alternative.

2.3 PREFERRED ALTERNATIVE FOR SEGMENT 1

The Project applicants, Iowa DOT and NDOR, have identified the Build Alternative as the preferred alternative based on its ability to meet the project purpose and need as well as input from the public and resource agencies.

The estimated cost for the Segment 1 Project is $95 million to $100 million (in the year of expenditure dollars) currently scheduled from state fiscal year 2008 to 2011. This cost includes all engineering, ROW, and construction for the completion of the Segment 1 Project (in both Iowa and Nebraska).

2.4 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

The Tier 1 EIS concluded that additional analysis would be required during the Tier 2 process to establish the significance of the Build Alternative impacts. The results of field studies conducted in the summer and fall of 2005 as well as other field investigations and numerical modeling analyses were used to determine the impacts of the Build Alternative on the resource categories listed in Table 2-1, Summary of Potential Environmental Impacts. The impacts of the Build Alternative on all other resource categories (such as energy resources and visual resources) were adequately discussed in the Tier 1 Draft EIS and do not require re-evaluation in this EA.

Table 2-1 summarizes the calculated impacts on environmental resources that would be caused by the Segment 1 Project in Nebraska and Iowa. For more detail, see Section 3, Affected Environment and Environmental Consequences.

Table 2-1
Summary of Potential Environmental Impacts

Resource	Potential Impact [1]	
	Nebraska	Iowa
New ROW [2]		
ROW acquisition (acres)	4.31	3.66
Displacements (residences, apartment complexes, businesses)	3, 0, 0	0, 0, 0
Noise receivers [3]	119	0
Wetlands (acres) [4]	1.6	0
Waterways (feet)	0	0
Floodplain		
Acres of fill	0	5.05
Feet of rise	0	0
Threatened or endangered species – potential habitat (acres) [5]	2.83	6.44
Architectural/historic resources (sites) eligible for listing on the NRHP [6]	0	0
Archaeological resources (sites) eligible for listing on the NRHP	0	0
Potential Section 4(f) resources (sites)		
Parks, recreation areas, trails	1, 1, 0	0, 0, 0
Wildlife and waterfowl refuges	0	0
Historic sites	0	0
Regulated materials (sites)	2	1

Notes:

[1] The impacts were calculated based primarily on the preliminary impact area and data from field studies conducted in the summer and fall of 2005.

[2] New ROW requirements were estimated by comparing the preliminary impact area with parcel data showing the existing ROW. NDOR determined potential residential displacements.

[3] All impacts are to residential receivers. A residential impact is when noise levels approach (within 1 dBA, or 66 dBA) or exceed the Noise Abatement Criteria of 67 dBA. Under the No-Build Alternative, 113 receivers would be impacted.

[4] Wetland acreage impacts are based on a comparison of the wetland determination boundary to the preliminary impact area. Jurisdiction will be determined by the U.S. Army Corps of Engineers.

[5] Potential habitat includes only riparian acreage for western prairie fringed orchid, eastern massasauga rattlesnake, bald eagle, and Indiana bat.

[6] NRHP is the National Register of Historic Places.

Sources:

CH2M HILL. January 2006. Threatened and Endangered Species Survey Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

Douglas County Assessor website (for property parcel data). Accessed 2005. www.dcassessor.org/valsearch.html.

FEMA. February 4, 2005a. Flood Insurance Rate Map, Pottawattamie County, Iowa, and Incorporated Areas.

FEMA. December 2, 2005. Flood Insurance Rate Map, Douglas County, Nebraska, and Incorporated Areas.

HDR. December 2005. Section 6(f) Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. February 2006a. Section 4(f) Technical Memorandum, Section 4(f) Decision Process Step 1. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. February 2006b. Wetland Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. March 2006. Regulated Materials Technical Memorandum, Phase I Environmental Site Assessment. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. April 2006. Noise Study Technical Memorandum (For the portion of Segment 1 located in Iowa).

HDR. August 2006c. Section 4(f) Technical Memorandum, Section 4(f) Decision Process Steps 2-5. Segment 1 of the Council Bluffs Interstate System Improvements Project.

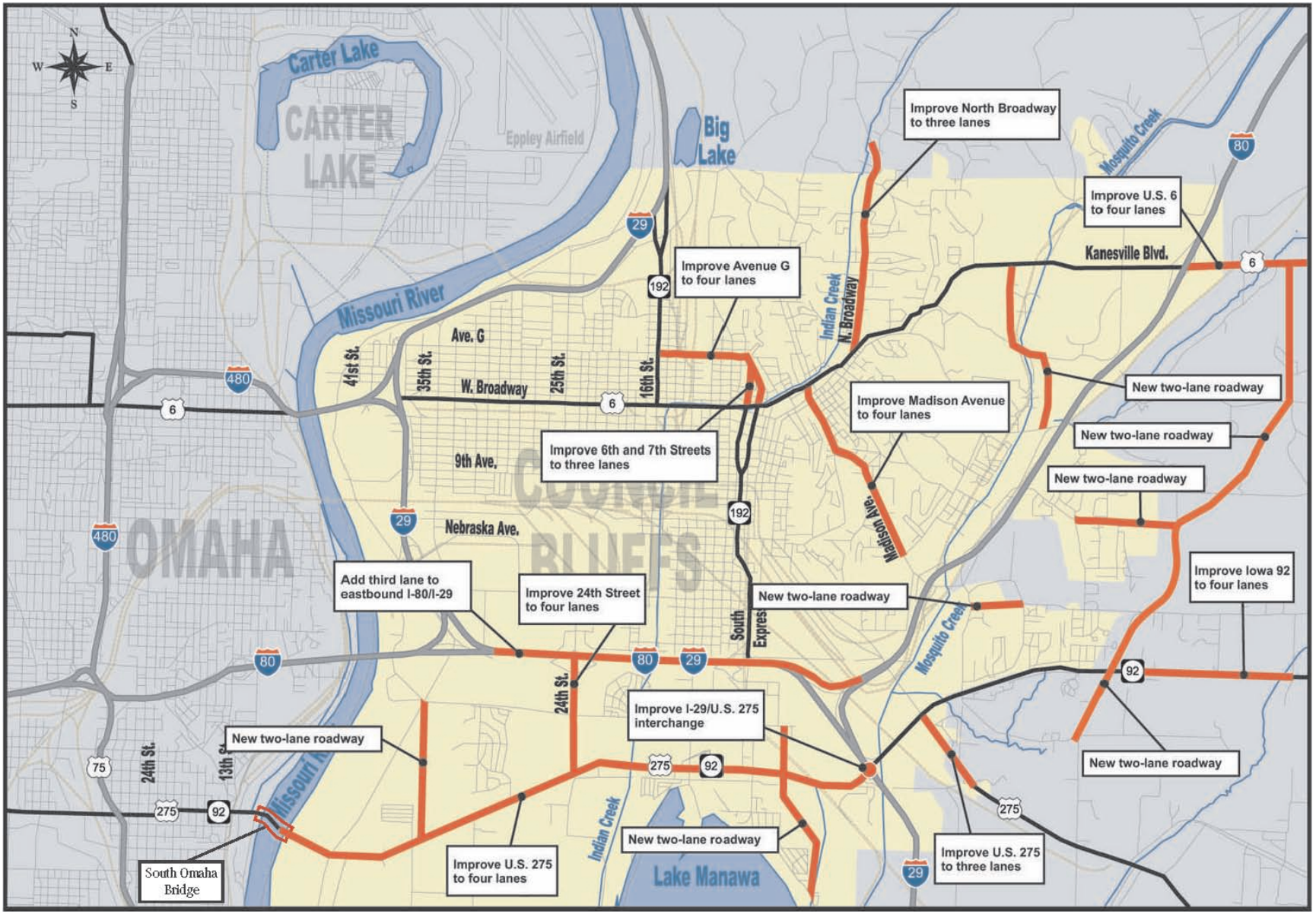
Nash, Jan. April 2006. Segment 1: Historical/Architectural Intensive-Level Survey & Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project.

Pottawattamie County Assessor website (for property parcel data). Accessed 2005. www.pottco.org.

Rogers, Leah. December 2005. Segment 1 Archaeological Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project.

URS. October 2006. Interstate-80: 24th Street Bridge to Missouri River Bridge. Noise Study Report.

USFWS. National Wetlands Inventory. www.fws.gov/nwi.



Iowa Department of Transportation

NDOR Nebraska Department of Roads

No-Build Alternative

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
Sept. 2006

FIGURE
2-1

LEGEND

- PROPOSED FREEWAY PAVEMENT
- PROPOSED LOCAL ROADWAY PAVEMENT
- PROPOSED BRIDGE
- PROPOSED TEMPORARY PAVEMENT
- PROPERTY LINE
- PROPOSED WALL /BARRIER
- PRELIMINARY IMPACT AREA
- LANE DESIGNATION AND FLOW
- PROPOSED ROAD CLOSURE
- TRAFFIC SIGNAL LOCATION
- STOP SIGN LOCATION

N

0 600

SCALE IN FEET

75 480 80

10th St.

16th St.

13th St.

20th St.

24th St.

ROSENBLATT STADIUM

HENRY DOORLY ZOO

EPPLEY AIRFIELD

OMAHA

COUNCIL BLUFFS

MISSOURI RIVER

KEYMAP

PRELIMINARY PLAN
NOT FINAL – SUBJECT TO CHANGE

Sources:
1. Aerial Photography – MAPA 2004
2. Concept and Proposed ROW Needs in Iowa – HDR /CH2M HILL /HGM Consultant Team, December 2005
3. Concept and Proposed ROW Needs in Nebraska – Nebraska Department of Roads, December 2005
4. Property Parcel in Iowa – Pottawattamie County Assessor's Office, 2004
5. Property Parcel in Nebraska – Douglas County Assessor's Office, 2004

Iowa Department of Transportation

NDOR Nebraska Department of Roads

80 SEGMENT 1 – BUILD ALTERNATIVE

Sheet 1 of 2

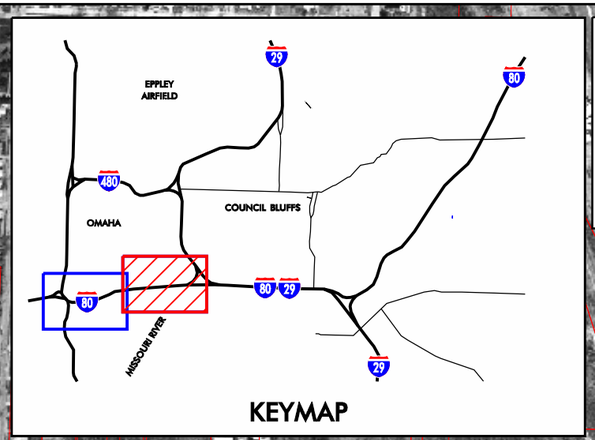
Council Bluffs, IA, Omaha, NE Interstate System Improvements

Date
October 2006

Figure
2–2A

LEGEND

- PROPOSED FREEWAY PAVEMENT
- PROPOSED LOCAL ROADWAY PAVEMENT
- PROPOSED BRIDGE
- PROPOSED TEMPORARY PAVEMENT
- PROPERTY LINE
- PROPOSED WALL /BARRIER
- PRELIMINARY IMPACT AREA
- LANE DESIGNATION AND FLOW
- PROPOSED ROAD CLOSURE
- TRAFFIC SIGNAL LOCATION
- STOP SIGN LOCATION



KEYMAP

N

0 600

SCALE IN FEET

10th St.

RIVERVIEW BLVD.

KENEFICK PARK

LAURITZEN GARDENS

MISSOURI RIVER

MATCHLINE

SEGMENT 1

SEGMENT 2

WESTERN HISTORIC TRAILS CENTER

HENRY DOORLY ZOO

29

80

PRELIMINARY PLAN
NOT FINAL – SUBJECT TO CHANGE

Sources:
1. Aerial Photography – MAPA 2004
2. Concept and Proposed ROW Needs in Iowa – HDR /CH2M HILL /HGM Consultant Team, December 2005
3. Concept and Proposed ROW Needs in Nebraska – Nebraska Department of Roads, December 2005
4. Property Parcel in Iowa – Pottawattamie County Assessor's Office, 2004
5. Property Parcel in Nebraska – Douglas County Assessor's Office, 2004

Iowa Department of Transportation

NDOR Nebraska Department of Roads

80 SEGMENT 1 – BUILD ALTERNATIVE

Sheet 2 of 2

Council Bluffs, IA, Omaha, NE Interstate System Improvements

Date
October 2006

Figure
2–2B

SECTION 3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

SECTION 3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environment for each resource potentially affected by the Segment 1 Project. Those resources that would not be affected by the project or were fully evaluated in Tier 1 are not discussed in this EA.[5] This section then presents the analysis of the probable beneficial and adverse social, economic, and environmental effects of implementing the alternatives under consideration for the Segment 1 Project (see Section 2 for a description of the alternatives). The organization of this section is by type of resource, essentially as listed in FHWA's *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (Technical Advisory T 6640.8A) (FHWA, October 30, 1987) but with some exceptions to facilitate the flow of information on the Segment 1 Project.

A streamlining process was implemented to document the rationale for eliminating resources from detailed discussion. The checklist used for the streamlining process is reproduced on the back of the front cover and in Appendix A. Appendix A also includes a brief summary providing the rationale for eliminating or performing only limited analysis on eighteen resources not described or analyzed in this EA.

The area of the potentially affected environment varies by resource. This area may be the preliminary impact area, discussed in Section 2.1.2, Build Alternative, or it may be larger than the preliminary impact area for some resources. For example, although construction activities would occur within the preliminary impact area and operations would occur in this area after construction would be completed, impacts on air quality would occur outside of this area. The affected environment is described briefly at the beginning of each resource section, along with the approach for evaluating impacts. For some resources, background information was gathered based on a field survey of the Tier 1 area of potential impact. However, impacts for Tier 2 are addressed relative to the preliminary impact area (which is within and narrower than the area of potential impact) derived for this Tier 2 study.

Each resource section includes an analysis of the impacts of the two alternatives carried forward for detailed study: the No-Build Alternative and the Build Alternative. The description of impacts includes both direct[6] and indirect[7] impacts. Each resource section ends with measures proposed to avoid, minimize, and mitigate adverse impacts, as applicable. The cumulative impacts[8] of the Segment 1 Project, including known impacts of other reasonably foreseeable

---

5 The Tier 1 EIS concluded that additional analysis of 11 resources would be required during Tier 2 to establish the significance of the impacts of the alternatives.

6 Direct impacts are those that "are caused by the action and occur at the same time and place" (40 CFR 1508.8).

7 Indirect impacts are those that "are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8). Indirect impacts may include induced changes in the pattern of land use, population density or increases, and related effects on air, water, and other natural systems (40 CFR 1508.8).

8 A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

future actions, are discussed in Section 3.14, Cumulative Impacts. The section on cumulative impacts focuses on new information subsequent to the Tier 1 EIS and detailed impacts determined during Tier 2.

3.1 LAND USE

Evaluation of land use as it relates to transportation projects refers to the determination of direct and indirect effects on existing land uses, such as agricultural, residential, and commercial/industrial, as well as consistency with regional development and land use planning.

During the Tier 1 analysis of existing land use and assessment of impacts of the CBIS Improvements Project on existing and future land use, information was gathered from land use plans, databases, aerial photographs, and reconnaissance on the CBIS Study Area. Direct effects on existing and future land uses were determined by comparing the Tier 1 area of potential impact boundary to the land uses. As noted in Section 2.1.2, Build Alternative, the affected environment for Tier 2 analysis is the area included in the Segment 1 Project preliminary impact area. Direct effects were determined by the same methods used in Tier 1.

Indirect effects were determined by evaluating access restrictions and their impact in causing out-of-distance travel.[9] Indirect effects were also determined by identifying land use changes that could result from the new access provided by the Segment 1 Project and that would be incompatible with existing land use plans. Accordingly, the alternatives were also reviewed for consistency with future land use plans for the Omaha/Council Bluffs metropolitan area.

3.1.1 Existing Conditions

The Segment 1 Study Area is predominately developed and contains a variety of land uses. Because the Segment 1 Study Area is adjacent to the existing interstate, a large percentage of the land use in this area is already dedicated to the transportation corridor.

Although Lauritzen Gardens (including privately owned Kenefick Park), the Zoo, Rosenblatt Stadium, Deer Hollow Park, and Spring Lake Park are within the Omaha portion of the Segment 1 Study Area, most of the land along the corridor in Omaha is zoned for residential use, with some minor commercial/industrial land use.

The portion of the Segment 1 Study Area in Iowa includes part of the WHTC, located south of I-80/I-29 between the Missouri River and the 24th Street interchange (which is outside the Segment 1 Study Area), and Warren Industries, Inc., located north of I-80 and west of the I-80/I-29 West System interchange (see Figure 1-2).

3.1.2 No-Build Alternative

The No-Build Alternative represents the base conditions for the Segment 1 Study Area. It includes continued use of the existing I-80 corridor and would not affect overall land use. Without any improvements to the interstate system, congestion would increase on the system; some of the traffic would shift to major arterials and local roads and likely increase congestion on those roads also. Improvements might also be required on non-interstate roads to handle increased traffic stress resulting in potential ROW impacts.

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

9 Out-of-distance travel requires drivers to go out of their way to make a desired connection.

As noted in the Tier 1 Draft EIS, all major development planned in the Omaha/Council Bluffs metropolitan area would occur regardless of the improvements to the CBIS. The land use along the Segment 1 Study Area in Omaha and Council Bluffs is urban and fully developed and is therefore unlikely to change in the future. Without the proposed interstate improvements in Segment 1, it is likely that, in the future, more people would avoid going to the Segment 1 area and surrounding businesses because of concerns about increased traffic; this would be an indirect effect of not constructing the Segment 1 Project.

3.1.3 Build Alternative

Because of the small amount of land needed for the Segment 1 Project, the area's primary land use characteristics (described in Section 3.1.1, Existing Conditions) are not expected to change as a result of construction of the Build Alternative. Lauritzen Gardens, the Zoo, Rosenblatt Stadium, Deer Hollow Park, and Spring Lake Park in Omaha are within or adjacent to the preliminary impact area, and none of the recreational facilities in these parks and recreation areas would be affected (see Section 3.8, Section 4(f) and Section 6(f) Resources). However, most of the land along the project corridor is zoned for residential use, and the Segment 1 Project will not change this except for the displacements discussed in Section 3.2, Acquisitions and Displacements/Relocations.

Improvements to Segment 1 of the CBIS would be compatible with this plan as well as the MAPA Comprehensive Economic Development Strategy (CEDS). The CEDS is a statistical and analytical report that presents a variety of information on economic, educational, environmental, and development plans in the MAPA region, including goals and strategies to achieve growth. The improvements would also be compatible with plans for future land use and development by the cities of Omaha and Council Bluffs.

Indirect impacts from out-of-distance travel or induced development are projected to be minimal. The interstate would remain open and would facilitate commuter and other traffic. Closure of access roads would be limited to short time frames and not disturb traffic patterns for extended periods. As noted previously, the interstate corridor for Segment 1 is highly developed. No new interchanges are planned for Segment 1, but some improvements to existing interchanges would occur. Consequently, no induced land use effects are projected to occur as a result of the Segment 1 Project.

Because of the minimal amount of ROW acquisition for the Segment 1 Project, impacts on land use are anticipated to be minor. The potential impacts would be avoided or minimized in several areas (see Section 3.1.5, Avoidance, Minimization, and Mitigation). Consequently, no significant land use impacts are expected to occur.

3.1.4 Joint Development

Joint development of proposed roadway ROW into a shared, multifunction facility would provide alternative uses of public land in addition to the service of a basic transportation route. The purpose of joint development is to restore or enhance the affected environment's social, economic, environmental, and visual values. Typically, joint development is most effective in urban areas. Examples of alternative uses are utility uses, pedestrian/bicycle trails, parking facilities over or under roadways for access to trails, and denotation of historic or landmark features along trails that are unique to the area. At this time, no joint development is planned for the Segment 1 Project. However, Iowa DOT and NDOR are committed to working with utility companies or other project proponents if joint developments are proposed during final design.

3.1.5 Avoidance, Minimization, and Mitigation

The Segment 1 Project would minimally affect existing and future land use in the Segment 1 Study Area and conforms to future land use adjacent to the interstate system. Coordination with representatives of Omaha and Council Bluffs is ongoing. This coordination will continue to ensure that roadway design, city master plans, and proposed development will result in a compatible use of lands.

The portion of the Segment 1 Project in Omaha is constrained by topography with varied terrain. Consequently, the use of retaining walls to avoid and minimize property and land use impacts was evaluated and would be implemented. Retaining walls can reduce ROW requirements instead of requiring acquisition of wide areas with traditional cut-and-fill slopes (typically with a 3-foot horizontal to 1-foot vertical ratio). Retaining walls are proposed north of the interstate by Kenefick Park within Lauritzen Gardens, the Zoo property, and the industrial area north of I-80 in Iowa. The retaining wall at Kenefick Park would not obstruct views of the UPRR locomotives except for westbound motorists as they pass the wall. Locations for potential noise walls were evaluated for minimizing noise impacts on land use (see Section 3.9, Noise).

3.2 ACQUISITIONS AND DISPLACEMENTS/RELOCATIONS

When a proposed transportation project involves the displacement of people or businesses, Iowa DOT and NDOR must take steps to assess direct and indirect relocation impacts and to determine how they can best be mitigated. The Tier 1 analysis of acquisitions and displacements/relocations considered residences, apartment complexes, and business buildings that were within the area of potential impact boundary. The Tier 2 analysis of impacts for the Segment 1 Project evaluated properties within the preliminary impact area.

3.2.1 Existing Conditions

The Segment 1 Study Area is primarily in an urban setting (see Section 3.1, Land Use) intersected by the Missouri River. Within the Segment 1 Study Area, there are multiple property owners, the majority of whom are private landowners in Nebraska. The primary landowners in the Iowa portion of Segment 1 (other than Iowa DOT) are the State Historical Society of Iowa (SHSI), which owns the WHTC property south of I-80/I-29, and the City of Council Bluffs and Warren Industries, Inc., which own property north of I-80/I-29.

3.2.2 No-Build Alternative

The No-Build Alternative would not require any ROW acquisition or displacements/relocations in the Segment 1 Study Area. However, if the interstate improvements are not constructed, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected increases in traffic. Consequently, future acquisitions of property, with associated displacements and relocations, could still result in areas that were not originally designed for high traffic volumes.

3.2.3 Build Alternative

Preliminary design for the Build Alternative maximized use of existing ROW. Consequently, the preliminary impact area includes only 7.97 acres (4.31 acres in Nebraska and 3.66 acres in Iowa) outside of the existing ROW. No apartment complexes or commercial business buildings would be affected by the project. The Segment 1 Project has the potential to cause as many as three residential relocations in Omaha and none in Council Bluffs (see Figure 3-1). Because the average household size in Omaha is estimated to be 2.4 people (U.S. Census Bureau, 2000),

approximately seven people could be displaced by the Segment 1 Project. Processes are in place to assist displaced residents (see the following section). Consequently, no significantly adverse impacts would result from the relocation of up to three residences.

As stated in Section 2.1.2, Build Alternative, the preliminary impact area may be further refined and reduced in size as the design process proceeds. Consequently, it is possible that less than 7.97 acres of additional ROW would need to be acquired. For example, if runoff from I-80 to WHTC land does not need to be controlled via drainage swales, some of the WHTC land shown in Figure 2-2B may not need to be acquired.

3.2.4 Avoidance, Minimization, and Mitigation

During preliminary design, several options were considered to avoid and minimize impacts. It is not always possible to follow property boundaries given constraints such as terrain, the curvature of the Missouri River, and other natural and manmade features. Constructing a concrete barrier that would connect to the existing 10th Street wall made it possible to avoid the use of Zoo property on the north side of the interstate while also eliminating direct impacts on two houses, extending the Zoo's box culvert, and relocating the Zoo's access road. In addition, a retaining wall was designed in the Iowa portion of the project to avoid impacting Warren Industries, Inc. and the I-80 Pump Station.

Right-of-Way Acquisition Process

An acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act [UA]) (42 USC 4601 et seq.) and the Nebraska Relocation Assistance Act (Neb. Rev. Stat. Section 76-1214 et seq.). The Segment 1 Project would not require any relocations in Iowa.

Uniform Act

The UA provides important protections and benefits for people affected by Federal and Federally assisted projects. Its purpose is to provide for uniform and equitable treatment of all persons relocated from their homes, businesses, and farms, without discrimination on any basis. The UA ensures fair compensation of property owners for their residential structures. It requires that the sponsor of a project provide financial and technical relocation assistance for relocated residents. The UA also contains allowances for renters. A one-time rental assistance payment is available for the tenant to find a decent, safe, and sanitary dwelling for a period of 42 months. The guidelines used by NDOR for carrying out the provisions in the UA are contained in NDOR's Right of Way Manual (NDOR, April 15, 2004).

Additional information pertaining to NDOR's relocation assistance is available from the following contact:

NDOR
1500 Highway 2, Lincoln, NE 68509
1-800-764-0422
http://www.nebraskatransportation.org/roway

Relocation Assistance

The UA covers the residential relocations in Nebraska. NDOR's Relocation Assistance Program, which offers financial assistance and an advisory service, also applies to primary residences or businesses relocated or displaced by a transportation project in Nebraska. All individuals who are

relocated or displaced can use the advisory service to assist them in finding replacement dwellings.

In some cases, individuals receive financial assistance to offset the increased cost of buying or renting replacement dwellings. Individuals and families displaced from dwellings, including condominiums, cooperative apartments, and mobile homes, acquired for highway purposes are eligible for Replacement Housing Payments (NDOR, April 15, 2004). Replacement Housing Payments are available to qualifying displaced persons to compensate them for increases in housing costs caused by acquisition of their dwelling. These payments represent the difference between the value of the present dwelling and the value of a comparable dwelling that is decent, safe, and sanitary, as determined by NDOR (NDOR, April 15, 2004).

Moving payments are available for individuals and families on the basis of actual, reasonable moving costs and related expenses or according to a fixed moving cost schedule based on the number of rooms in the vacated dwelling.

Replacement Housing

Replacement housing options were evaluated for the build alternative. Information regarding current real estate listings was obtained from a local real estate agent (NP Dodge, April 28, 2006). Similar replacement options in the form of existing homes were considered for the three properties potentially requiring relocation in Omaha. Eleven residences that are comparable with respect to price and location were identified for the potential relocations on South 9th Street, and 11 comparable residences were identified for the potential relocation on Vinton Street.

Last Resort Housing

The Last Resort Housing Program allows the use of project funds to construct or otherwise provide housing. No eligible person will be required to move from the ROW acquired until comparable decent, safe, and sanitary housing is available for immediate occupancy. These procedures will be implemented when normal Relocation Assistance Payment limits are inadequate to effect a solution to the housing needs of eligible displaced persons (NDOR, April 15, 2004).

Additional Assistance

At this time, there are no known relocations that would require special assistance due to low income, minority, elderly, or disabled status. If it is determined that the Segment 1 Project affects people with these or any other special needs, efforts will be made to find suitable housing in accordance with NDOR's relocation assistance services.

3.3 WETLANDS AND OTHER WATERS OF THE U.S.

Waters of the U.S., including wetlands and waterways, are regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act[10] (33 USC 1251 et seq.). Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328).

A permit from USACE is required to authorize the discharge of dredged or fill material into waters of the U.S. In addition, both Nebraska and Iowa have regulatory jurisdiction over all

[10] USACE also regulates lakes, natural ponds, and impoundments; however, none of these are present in the Segment 1 Study Area, and no further discussion of these resources is warranted.

waters within each state's respective boundaries. For a discussion of the permits and approvals (including those for wetlands and waters of the U.S.) required for the Segment 1 Project, see Section 3.12.

Executive Order (EO) 11990, Protection of Wetlands, requires Federal agencies (including FHWA) to implement "no net loss" measures for wetlands (42 Federal Register [FR] 26961). These measures include a phased approach, as follows:

1. Avoidance – Impacts on wetlands are avoided through alignment design.
2. Minimization – If wetland impacts cannot be fully avoided, impacts are minimized to the maximum extent practicable.
3. Mitigation – Unavoidable impacts on wetlands may be mitigated through on- or off-site wetland creation, restoration, or enhancement. (Mitigation requirements are regulated by USACE as part of the Section 404 permit process.)

During Tier 1, field wetland determinations were conducted to review the presence of U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) polygons and to identify other potential wetlands in the CBIS Study Area and area of potential impact. As part of Tier 2 investigations, wetland delineations[11] were conducted within the Tier 1 area of potential impact because the preliminary impact area for Tier 2 had not been determined at the time of the field surveys. The field investigations determined the boundaries of waters of the U.S., including wetlands, that could be affected by Segments 1, 2, and 3 of the CBIS Improvements Project (HDR, February 2006b). The wetland delineations were conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, January 1987).

3.3.1 Existing Conditions

Wetlands

For the Tier 2 delineations, soil profiles were characterized for hydric soil indicators and used to confirm or deny the mapped soil types in the Douglas County and Pottawattamie County soil surveys (U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS], 1975; USDA NRCS, 1989). The presence of ground surface inundation, soil saturation, and other physical hydrology indicators was used to determine whether a site contained wetland hydrology. Vegetation was identified to the species level and then referenced to the National List of Plant Species That Occur in Wetlands for Region 5 (Nebraska) and Region 3 (Iowa) (Reed, May 1988a and May 1988b). Wetland indicator status was documented to determine whether areas contained predominantly hydrophytic or upland vegetation.

In efforts to identify non-wetland waters of the U.S. (waterways), channel morphology and hydrologic data were documented for the presence of a definable bed and bank, ordinary high water mark, and flow regime.

Results of the wetland delineation survey, including photographs and survey forms, were documented in a Wetland Technical Memorandum prepared by HDR Engineering, Inc. (HDR) (HDR, February 2006b). Wetlands were identified in the Segment 1 Study Area in both Nebraska and Iowa. The only wetland present in the preliminary impact area of the Segment 1 Project lies between Burlington Northern Santa Fe Railway (BNSF) property and the western

[11] A wetland delineation is a survey conducted by a qualified person to determine the extent of wetland and the types of wetland that would be affected by a project. A wetland must exhibit hydrophytic vegetation (that is, vegetation growing wholly or partially in water), hydric soils (that is, soils that have or are characterized by excessive moisture), and wetland hydrology.

bank of the Missouri River, shown in Figure 3-2. The presence of existing NWI information, mapped hydric soils, low-lying topography, and proximity to the Missouri River suggested that this area contains suitable conditions for wetlands. This 2.34-acre area is classified as palustrine emergent (PEM)[12] (Cowardin et al., December 1979) according to NWI information.

Due to lack of access (no BNSF right-of-entry permit and the Back-to-the-River Trail accessing area was closed) this area was not formally delineated during the 2005 field survey; however, the area was accessed in September 2006 via the Back-to-the-River Trail. Preliminary results indicate the area includes a thin band of palustrine emergent seasonally flooded (PEMC) wetlands along the Missouri River, palustrine forested temporarily flooded wetlands (PFOA) west of the PEMC, and palustrine emergent temporarily flooded wetlands (PEMA) west of the PFOA area (HDR, October 2006). Because data review of the delineation is ongoing, the results are not available for reporting at this time.

Waterways

For the purpose of this discussion, waterways include rivers, streams, and intermittent streams. Under current USACE policy, aside from the definition of waters of the U.S. in 33 CFR 328, waterways are considered jurisdictional (that is, subject to jurisdiction under Section 404 of the Clean Water Act [33 USC 1251 et seq.]) if a definable bed and bank is present.

In Segment 1, the Missouri River is the only waterway that meets jurisdictional criteria.

3.3.2 No-Build Alternative

Under the No-Build Alternative, the Segment 1 Project would not occur and would not result in dredge or fill activities within existing waters of the U.S., including wetlands. However, if the interstate improvements are not constructed, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future acquisitions of property for transportation improvements could result in dredge or fill activities in waters of the U.S., including wetlands.

3.3.3 Build Alternative

Wetlands

Based on the preliminary impact area and wetland determination boundaries, a total of approximately 1.6 acres of PEM wetlands in Nebraska could be permanently affected by implementation of the Build Alternative. As the design is further refined, the actual area of disturbance will be identified. The preliminary impact area includes area beneath the proposed Missouri River bridge, where two piers would be installed, and areas to the north and south of the proposed bridge. Consquently, the entire area would not require filling. The delineated wetland boundaries are still under review, but would be finalized and used for identifying the area of construction impact. The refined design and delineated wetland boundaries will be included in a Section 404 permit application filed with USACE (see Section 3.3.4, Avoidance, Minimization, and Mitigation).

[12] Palustrine system wetlands include all non-tidal wetlands dominated by trees, shrubs, persistent emergents, and emergent mosses and lichens. Such wetlands are generally bounded by uplands or by any other type of wetland system. PEM wetlands are characterized by erect, rooted, non-woody plants (Cowardin et al., December 1979).

Waterways

The Build Alternative would include construction of a new five-lane bridge north of the existing I-80 Missouri River bridge. However, the Missouri River would not incur any channel modification as the orientation and channel location of the piers installed in the river for the new bridge would match that of the existing bridge. The location of the piers was coordinated with USCG, and construction of the bridge would be done according to USCG permit requirements.

No significant impacts on wetlands and waterways would occur based on compliance with permitting processes to protect both resources (see Section 3.12, Permits and Approvals).

3.3.4 Avoidance, Minimization, and Mitigation

By bridging the wetlands on the west side of the Missouri River, the Build Alternative would avoid some permanent wetland impacts.

Where wetland impacts cannot be avoided, including potential impacts at bridge pier locations, wetland mitigation would occur at ratios determined by USACE and at locations approved by USACE. The mitigation approach was addressed in detail in the Tier 1 Draft EIS and is incorporated by reference. Because only a small portion of the wetland in Nebraska will be impacted by pier construction, the NDOR-established wetland mitigation bank (at Lincoln Bend in Nemaha County) is proposed for mitigation of wetland impacts, provided that suitable mitigation credits are available when the Section 404 permit application is filed.

For a discussion of temporary impacts from construction, see Section 3.13, Construction.

3.4 FLOODPLAINS

EO 11988, Floodplain Management (42 FR 26951), requires that Federal agencies identify potential floodplain encroachment of projects they fund and that they assess the impact of this encroachment on human health, safety, and welfare and on the natural and beneficial values of the floodplain. For purposes of the EO, "floodplain" is synonymous with the 100-year floodplain.

The Federal Emergency Management Agency (FEMA) requires that construction within a floodway[13] achieve a no-rise condition. The Tier 1 Draft EIS addressed the methods for achieving a no-rise, which are incorporated by reference in this EA. The Tier 1 EIS for the CBIS Improvements Project used FEMA data to identify the 100-year floodplains within the Study Area. Estimates of fill acreage within floodplains were determined by comparing FEMA floodplain boundaries to the area of potential impact. The Tier 2 analysis for the Segment 1 Project used FEMA boundaries that were updated since the analysis was conducted for Tier 1 and compared the boundaries to the preliminary impact area.

3.4.1 Existing Conditions

FEMA has mapped the 100-year floodplain and the floodway for the Missouri River, the only mapped surface water in the Segment 1 Study Area. The Missouri River floodplain is bounded by USACE flood control levees in the Douglas County and Pottawattamie County portions of the Segment 1 Study Area (see Figure 3-2). The 100-year levee in Nebraska parallels the Missouri River approximately 450 feet west of the river north and south of the Segment 1

[13] The floodway is the channel of a stream and any adjacent floodplain areas that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substation increases in flood heights (FEMA, February 4, 2005b).

Study Area. Although Figure 3-2 does not show a levee in the preliminary impact area and the Flood Insurance Rate Map (FIRM) for Douglas County does not show a levee in that location (FEMA, December 2, 2005), the levee is present and continues southward from just north of the I-80 Missouri River bridge to the levee identified beneath the South Omaha Veterans Memorial Bridge along U.S. 275. There is a series of levees in Iowa south of the I-80 Missouri River bridge and a 100-year levee north of the bridge along the Missouri River (FEMA, February 4, 2005a). The existing roadway embankment of I-80 serves as a levee of a 100-year flood, and the 100-year levee extends from the northwest corner of the levee associated with the former Indian Creek drainage located south of the I-80/I-29 West System interchange (and extending east parallel to I-80/I-29 and continuing outside the Segment 1 preliminary impact area), eastward along the southern boundary of the levee, and connects to the USACE 100-year levee that is approximately 2,500 feet east of the Missouri River. Figure 3-2 shows levees north and south of I-80/I-29 and the 100-year floodplain extending over I-80.

3.4.2 No-Build Alternative

Under the No-Build Alternative, the Segment 1 Project (with its associated bridge construction in the Missouri River and modification of levees) would not occur. However, if the interstate improvements are not constructed, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future projects could require modification of floodplains.

3.4.3 Build Alternative

The floodway and 100-year floodplain of the Missouri River coincide in the Segment 1 Study Area. Under the Build Alternative, both the floodway and the 100-year floodplain would be spanned, except for an area in Iowa east of the I-80 Missouri River bridge, where the existing roadway embankment of I-80 serves as the 100-year flood levee. In this area, the roadway embankment would be modified and widened to accommodate the additional five lanes on the new bridge north of the existing bridge. Floodplains amounting to 5.05 acres would be filled, 1.4 acres of which would be outside Iowa DOT's existing ROW. In addition, six piers would be constructed in the floodway: two piers would be placed on land in Douglas County, two piers would be placed in the Missouri River, and two piers would be placed on land in Pottawattamie County. Changes to the roadway embankment serving as the 100-year levee would be coordinated with USACE to ensure that the embankment continues to meet all applicable levee requirements.

The new I-80 Missouri River bridge would not be expected to increase backwater surface elevations and would pass a 100-year floodway volume with adequate clearance under the structure. Although the Segment 1 Project would require construction within floodplains and the filling of approximately 5.05 acres of floodplains, it would not fundamentally alter the capacity of the Missouri River floodplain and therefore is compatible with 100-year floodplains. A no-rise condition was confirmed by conducting hydraulic modeling and coordinating the results with USACE. Thus, the Segment 1 Project is not expected to have significant impacts on the floodplains located within the Segment 1 Study Area.

3.4.4 Avoidance, Minimization, and Mitigation

Because the Segment 1 Project crosses the Missouri River, encroachment on floodplains is unavoidable. Although encroachment is required, impacts on floodplains were minimized as much as possible. Mitigation in the floodway is not required because the piers of the proposed bridge would be aligned with the piers of the existing bridge and would result in no increase in the water surface elevation.

3.5 WATER QUALITY

Surface water quality is protected through several acts and regulations. Section 303(d) of the Clean Water Act requires states, territories, and authorized tribes to identify waters for which existing required pollution controls are not sufficiently stringent to maintain applicable water quality standards and to establish total maximum daily loads (TMDLs) for the pollutants impairing those waters (33 USC 1251 et seq.). Section 305(b) of the Clean Water Act requires states to submit a biannual report to the U.S. Environmental Protection Agency (EPA) regarding the overall water quality status within their state and the degree to which waterbodies support their designated uses (33 USC 1315). The information maintained by states in accordance with Section 303(d) serves as a portion of the Section 305(b) water quality report.

Title 117 of the Nebraska Department of Environmental Quality's (NDEQ's) guidelines (Nebraska Surface Water Quality Standards) and Chapter 61 of the Iowa Administrative Code (Water Quality Standards) classify uses of the surface waters within each state and identify criteria to be used to protect these waters and meet the requirements of Section 303(d) (NDEQ, December 31, 2002; 567 Iowa Administrative Code [IAC] Chapter 61).

The CBIS Improvements Project was evaluated in Tier 1 for its potential to affect surface water and groundwater in the area of the project as well as water quality, wastewater treatment facilities, potable water intakes, and water treatment facilities downstream of the project. Water quality issues related to surface water were evaluated primarily by considering runoff and siltation impacts during long-term use of the transportation facility. Potential issues concerning decreased groundwater recharge and effects on potable water intake and wastewater discharge were also considered. For this Tier 2 analysis, a similar but more detailed approach was used to evaluate impacts within Segment 1. For a discussion of temporary impacts on water quality during construction, see Section 3.13, Construction.

3.5.1 Existing Conditions

Surface Water

The only mapped surface water located in the Segment 1 Study Area is the Missouri River (see Figure 3-2). Figure 3-2 shows a water of the U.S. boundary that includes some accretion land adjacent to the Missouri River. In Iowa, a drainage ditch that drains to the Missouri River is located south of the interstate, but most of the former sources of runoff draining through the ditch have been rerouted. Consequently, the ditch handles primarily rainfall within the ditch and is not considered a surface water. The following paragraphs discuss the designated uses and water quality of the Missouri River.

The Missouri River is channelized within the CBIS Study Area, with levees on both sides of the river. Both Iowa and Nebraska classify parts of the Missouri River as impaired under Section 303(d) of the Clean Water Act (Iowa Department of Natural Resources [Iowa DNR], 2004a; NDEQ, Water Quality Division, March 2006b). However, only Nebraska classifies the area of the Missouri River within the Segment 1 Study Area as impaired. Iowa-designated uses for the Missouri River within the Segment 1 Study Area include high-quality state resource water, warm-water aquatic life support, and primary contact recreation (Iowa DNR, 2004b). Nebraska-designated uses include primary contact recreation, aesthetics, warm-water aquatic life support, public drinking water, agricultural, industrial water supply, and key endangered or threatened species (NDEQ, Water Quality Division, March 2004, March 2006a, and March 2006b). The "high-quality" designation by the states refers to the quality of public use rather than water quality standards. Section 305(b) of the Clean Water Act requires states to report on how well the waters of the state support these beneficial public uses.

The Missouri River has saturated levels of dissolved oxygen and low nutrient and sediment levels north of the Segment 1 Study Area, but the water quality degrades downstream. This degradation involves increased water temperature, nutrient levels, and biochemical oxygen demand in areas including the Segment 1 Study Area and peaks near Kansas City, Missouri (USACE, 2001). Organic nitrogen, nitrate, total phosphorus, and orthophosphorus are the primary nutrient concentrations that increase downstream. In addition, tributaries provide an influx of warm, turbid waters with elevated levels of nutrients and other oxygen-demanding minerals. Based on data collected from 2001 through 2005, however, trends for key parameters are all stable except for specific conductivity, which is decreasing (NDEQ, Water Quality Division, March 2006b; U.S. Geological Survey [USGS], May 3, 2006). Decreasing specific conductivity is beneficial to surface waters because it indicates a decrease in total dissolved solids. See Table 3-1 for results of a recent Missouri River water quality assessment conducted at Omaha.

Table 3-1
Missouri River Water Quality Assessment
at Omaha, Nebraska, 2001–2005

Constituent	Number of Observations	Trend
Dissolved Oxygen	77	Stable[1]
Conductivity	79	Decreasing[1]
Ammonia	78	Stable[1]
Atrazine	77	Stable[1]
Turbidity	66	Stable[2]
Suspended Sediment	64	Stable[2]

Sources:

[1] *NDEQ, Water Quality Division. March 2006b. 2006 Surface Water Quality Integrated Report.*

[2] *USGS. May 3, 2006. Water Quality Samples for Nebraska, USGS 06610000 Missouri River at Omaha, NE. Trend based on linear regression of data.*

The water quality reports that the states submit to EPA in compliance with Section 305(b) of the Clean Water Act determine whether a waterbody is supporting its designated uses; if not, the waterbody is listed in the states' Section 303(d) reports. Nebraska has listed the section of the Missouri River in the Segment 1 Study Area as impaired and exceeding the TMDL for fecal coliforms and chlorodibromomethane (NDEQ, Water Quality Division, March 2006b). This section of the Missouri River is not on the Section 303(d) list in Iowa but is only classified as a partially supporting use because of human impacts on flow modification and habitat alteration (Iowa DNR, 2004a and 2004b).

Although the Missouri River in the Segment 1 Study Area has been degraded by upstream agricultural runoff and urban stormwater as well as treated sanitary sewer effluent and Nebraska has rated this section of the Missouri River as impaired for drinking water, it is still suitable for recovery and treatment for drinking water (see the section titled Wastewater and Water Treatment Facilities, below). Iowa does not have public drinking water listed as a use for this section of the Missouri River, but there is a potable water intake located outside this section, several miles upstream of the Segment 1 Study Area.

Groundwater

Council Bluffs obtains its water supply primarily from the Missouri River from a potable intake located in a section of the river designated for drinking water, although a small portion comes

from an alluvial aquifer northeast of the Segment 1 Study Area. The well field has a setback zone to protect against potential contamination sources that could affect groundwater wells.

Private groundwater wells in the Omaha/Council Bluffs metropolitan area are typically shallow (less than 100 feet deep) and associated with agricultural and residential uses at properties outside the city limits. A database of registered private wells was accessed to determine wells located in the Segment 1 Study Area (Iowa DNR, Private Well Data Tracking System); the closest registered well is approximately 2,000 feet to the north.

Wastewater and Water Treatment Facilities

Several wastewater treatment facilities are located downstream of the Segment 1 Study Area. The closest is south of the South Omaha Veterans Memorial Bridge along U.S. 275, at a distance of about 2.5 miles from the Segment 1 Study Area.

The Missouri River is a potable water source for the Omaha/Council Bluffs metropolitan area. An intake for the Omaha public water supply is located south of the I-680 bridge in Florence, and the intake for the Council Bluffs water system is north of the I-29/25th Street interchange; both of these are upstream of the Segment 1 Study Area. The water is treated, and residual materials are discharged into the Missouri River downstream of the water treatment plant's potable water intakes. The closest public water system intake downstream of the Segment 1 Study Area is in Nebraska City, Nebraska, more than 40 miles away.

3.5.2 No-Build Alternative

Under the No-Build Alternative, no improvements to the existing CBIS would occur, and no project-related impacts in the form of reduced groundwater recharge area and additional surface water runoff or siltation would occur. However, if the CBIS improvements are not constructed, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future projects could result in impacts on surface water and groundwater.

3.5.3 Build Alternative

Surface Water Impacts

Within the Segment 1 Study Area, the Missouri River is the only water of the U.S. (excluding wetlands) that would be crossed by bridge or culvert. The Build Alternative would span approximately 600 feet of the Missouri River with another bridge north of the existing I-80 Missouri River bridge. Disturbance for construction of piers in the floodway would extend approximately 350 feet along the river (see Figure 2-2B). Construction of the new bridge could lead to temporary increases in sediment runoff from the affected area to the Missouri River (see Section 3.13, Construction). The Tier 1 Draft EIS noted impacts from an increase in impermeable areas. Deicing compounds (sodium chloride in Iowa and potassium acetate in Nebraska) are used during icy conditions, and the increase in lanes under the Build Alternative may result in a minor increase in total salt loading in the river.

As described in FHWA's *Effects of Highway Runoff on Receiving Waters, Volume IV: Procedural Guidelines for Environmental Assessments* (Dupuis et al., 1985), common highway runoff pollutants can be expected for roadways, including metals, which can cause acute and chronic toxicity to aquatic life; particulates, which act as "carriers" of other pollutants and have

sedimentation effects on aquatic habitat; nutrients, which can cause eutrophication[14]; and salts, which can affect aquatic life toxicity and drinking water taste. Table 4-2 of the Tier 1 Draft EIS lists common highway runoff pollutants and their primary sources.

Construction and operation of the Build Alternative would minimally affect water resources. The magnitude of the impacts would be affected by the following factors:

- Traffic characteristics – speed, volume, vehicular mix (cars and trucks), congestion, and state regulations controlling exhaust emissions
- Highway design – pavement material, percentage of impervious area, and drainage design
- Maintenance activities – road cleaning, roadside mowing, herbicide spraying, road sanding and use of deicing compounds, road repair, bridge painting, and paint removal
- Accidental spills – sand, gravel, oils, and chemicals

Groundwater Impacts

No measurable change to the available groundwater supply is expected. The additional impervious area associated with the Segment 1 Project would represent a negligible reduction in recharge area. There are no public or private groundwater wells within the preliminary impact area. Consequently, the Segment 1 Project would not adversely affect groundwater wells or groundwater quality. No significant impacts on groundwater quantity or quality are projected to occur.

3.5.4 Avoidance, Minimization, and Mitigation

Surface Water Impacts

Runoff impacts caused by the Build Alternative would be no greater than from other roadways in the Omaha/Council Bluffs metropolitan area. The runoff would occur in areas already affected by runoff from the interstate system. A National Pollutant Discharge Elimination System (NPDES) construction permit would need to be acquired to address stormwater impacts because more than 1 acre of land would be disturbed. All requirements of the NPDES permit would be followed (see Section 3.12, Permits and Approvals).

With the implementation of mitigation practices, such as those described in the Tier 1 Draft EIS, water quality impacts on surface water would not be significant.

Groundwater Impacts

No measurable change to area groundwater is expected under the Build Alternative. The additional impervious area associated with the Segment 1 Project would represent a small reduction in recharge area. No groundwater wells would be affected by roadway improvements because none are near the preliminary impact area.

3.6 THREATENED OR ENDANGERED SPECIES

Threatened or endangered (T&E) species are protected under the Endangered Species Act of 1973, as amended (16 USC 1531 et seq.). The Endangered Species Act provides for the protection of animal and plant species that have been determined to be in population decline and

[14] Eutrophication is the gradual increase in nutrients in a body of water, a process that may be increased by human activity.

are in jeopardy of becoming extinct. USFWS has the authority of the Federal government to administer the protection of such species.

During the Tier 1 analysis for T&E species, information provided by Federal and state agencies identified 11 T&E species that may exist in the Segment 1 Study Area. Agency coordination was supplemented with limited windshield surveys and preliminary desktop surveys during the Tier 1 analysis.

The Tier 2 analysis involved intensive pedestrian field surveys, which were conducted on July 7 and 8, 2005, to document the presence of potential protected species in the Segment 1 Study Area. The field surveys reviewed the Tier 1 area of potential impact because the preliminary impact area for Tier 2 had not been determined at the time of the surveys. The findings and conclusions of the field surveys were documented in a Threatened and Endangered Species Survey Technical Memorandum (CH2M HILL, January 2006).

Following Tier 2 field surveys, impacts on T&E species were evaluated by considering potential habitat, the likelihood of a species occurring within the Segment 1 Study Area, and physical impacts (such as increased sedimentation and runoff) caused by constructing and operating a transportation facility. A Biological Evaluation (BE) was prepared to document the analysis of potential effects of the project on T&E species and their habitat (Iowa DOT, May 2006). The potential for and extent of impacts are described using accepted Endangered Species Act terminology.

3.6.1 Existing Conditions

Tier 2 field surveys identified three separate habitat areas with a portion of their boundaries within the Segment 1 Study Area (see Figure 3-3). These habitat areas are described below. Table 3-2 indicates the species evaluated, the Federal and state status of the species, the habitat areas, and the potential habitat in each area. Although potential habitat was identified, no T&E species were detected during the field surveys. The following discussion focuses only on those species whose potential habitat was observed.

Area 1A

Area 1A is a narrow strip of floodplain woodland in Nebraska beneath and around the I-80 Missouri River bridge, adjacent to the Missouri River (see Figure 3-3). The strip of woodland is approximately 350 feet (north-south) by 300 feet (east-west) in area within the Segment 1 Study Area and was not accessible due to restricted access across BNSF railroad tracks. This wooded area extends uninterrupted more than 1 mile north and south of the Segment 1 Study Area. Area 1C (a riparian woodland on the Iowa bank of the Missouri River, discussed below) was accessed for field surveys and appears to contain habitat comparable to that in Area 1A. This wooded area extends only 300 feet to the north of the Segment 1 Study Area, but extends for several miles uninterrupted to the south. Based on the tree composition, size, and proximity to a permanent water source as well as the likely presence of dead trees with peeling bark, Area 1A may provide potential summer habitat for the Indiana bat (*Myotis sodalis*); however, agency contacts noted that there are no known occurrences of the Indiana bat in the Segment 1 Study Area (Iowa DNR, 2005a, and USFWS 2005d, as cited in CH2M HILL, January 2006).

Two small sandy areas on the west bank of the Missouri River in Area 1A were observed from the east bank in Iowa (Area 1C). Both sandy areas are within the Segment 1 Study Area, one upstream and one downstream of the I-80 Missouri River bridge. These areas are associated with the downstream sides of wing dams that have been erected. Piping plover (*Charadrius melodus*) and the interior least tern (*Sterna antillarum anthalassos*) have an affinity for similar habitat types. However, these sandy areas do not provide suitable habitat for the piping plover or the

interior least tern because these areas are small and are typically inundated during the breeding seasons of these bird species.

Area 1A provides loafing habitat for the bald eagle (*Haliaeetus leucocephalus*); however, there are no known bald eagle nests within 19 miles of the Segment 1 Study Area (Iowa DNR, 2005b, as cited in CH2M HILL, January 2006). Although bald eagles have been observed flying near the area, no tree use has been documented.

Table 3-2
Potential Habitat for Listed Species

Species	Status[1]			Habitat Area[2]		
	Federal	Iowa	Nebraska	Area 1A	Area 1B	Area 1C
Prairie bush clover	TH	TH	NL	None	None	None
American ginseng	NL	NL	TH	None	None	None
Western prairie fringed orchid	TH	TH	TH	None	None	None
Piping plover	TH	EN	TH	None	None	None
Bald eagle	TH	EN	TH	Loafing	Hunting	Loafing
Interior least tern	EN	EN	EN	None	None	None
Indiana bat	EN	EN	NL	Summer habitat	None	Summer habitat
Eastern massasauga rattlesnake	CAN	EN	TH	None	None	None
Pallid sturgeon	EN	EN	EN	None	Foraging, migrating	None
Lake sturgeon	NL	EN	TH	None	Foraging, migrating, spawning	None
Sturgeon chub	NL	NL	EN	None	Foraging, migrating	None

Notes:
[1] *TH = threatened, EN = endangered, CAN = candidate, NL = not listed.*
[2] *"None" means that no potential habitat for the subject species was found despite an intensive pedestrian field survey.*
Source: CH2M HILL, January 2006.

Area 1B

Area 1B is the reach of the Missouri River beneath and slightly upstream and downstream of the existing I-80 Missouri River bridge (see Figure 3-3). Area 1B provides hunting habitat for bald eagle and may provide habitat for foraging and migration of the pallid sturgeon (*Scaphyrhynchus albus*), lake sturgeon (*Acipenser fulvescens*), and sturgeon chub (*Macrhybopsis gelida*). Lake sturgeon may spawn in habitats such as those present in Area 1B, but the pallid sturgeon and sturgeon chub typically spawn in more shallow, braided channels or tributaries of the Missouri River.

Area 1C

Area 1C encompasses the east bank of the Missouri River and the immediately adjacent riparian woodland area (see Figure 3-3). The most prevalent habitat type is second-growth, mature-to-submature floodplain woodland.

Because of its proximity to the Missouri River, this woodland area provides loafing habitat for the bald eagle. Although visitors to the WHTC have reported seeing bald eagles in this area (WHTC, 2005, as cited in CH2M HILL, January 2006), no bald eagle nests are known to occur near the Segment 1 Study Area. The floodplain woodland on the Iowa side of the Missouri River provides limited suitable wintering habitat for the bald eagle due to its proximity to the existing I-80 Missouri River bridge and associated traffic noise (Iowa DNR, 2005b, as cited in CH2M HILL, January 2006). Although bald eagles have been observed flying in the area, no tree use has been documented.

Based on the tree composition, size, and proximity to a permanent water source as well as the presence of several dead trees with peeling bark, Area 1C may provide suitable summer habitat for the Indiana bat.

Area 1C was surveyed for American ginseng (*Panax quinquefolia*), but no occurrences of the species were found. It was determined that the woodland is not well-drained enough to be preferred habitat for the species (CH2M HILL, January 2006). The palustrine emergent wetland portion of Area 1C (see Figure 3-3) was searched for potential habitat for the prairie bush clover, the western prairie fringed orchid, and the eastern massasauga rattlesnake; this area was considered to be marginal habitat for the orchid and rattlesnake, but not suitable habitat for the clover.

3.6.2 No-Build Alternative

The No-Build Alternative would have no effect on T&E species, and no project-related impacts of potential habitat disturbance would occur. If the interstate improvements are not constructed, however, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future projects could result in impacts on potential habitat for T&E species.

3.6.3 Build Alternative

The Build Alternative would have no effect on prairie bush clover, American ginseng, piping plover, or interior least tern. The intensive pedestrian field surveys identified no occurrences of the aforementioned listed species. Furthermore, the Segment 1 Study Area does not contain suitable habitat for any of these species.

Under the Build Alternative, six piers would be constructed in the floodway: two piers would be placed on land in Douglas County, two piers would be placed in the Missouri River, and two piers would be placed on land in Pottawattamie County. Because the section of the Missouri River within the Segment 1 Study Area has been determined to be potential foraging and migrating habitat for pallid sturgeon, lake sturgeon, and sturgeon chub as well as potential spawning habitat for lake sturgeon, there is a potential to affect pallid sturgeon, lake sturgeon, and sturgeon chub. To support bridge construction, trees would be removed on both sides of the Missouri River. Areas 1A and 1C were considered as potential habitat for the bald eagle and Indiana bat (bald eagle hunting habitat was also identified in the Missouri River within Area 1B); therefore, there is a potential to affect the bald eagle and Indiana bat. Because the preliminary impact area does not include the wetland habitat within Area 1C, the Segment 1 Project would result in no effect on western prairie fringed orchid and eastern massasauga rattlesnake.

Potential construction impacts on T&E species are addressed in Section 3.13.4. The Segment 1 Project is planned to improve capacity and safety of the existing roadway and bridge. No new interchanges are planned along Segment 1. Development is occurring currently and will occur in the future regardless of the interstate improvements. Consequently, no indirect effects on T&E

species or their habitat are anticipated. Cumulative impacts on T&E species of the Segment 1 Project and other past, present, or future projects are addressed in Section 3.14.3.

Although most potential impacts on T&E species would likely occur during construction, several types of impacts could occur subsequent to construction, including an overall reduction in suitable habitat, a slight increase in traffic noise from current levels to levels in the year 2030 (1 to 2 A-weighted decibels), and increased runoff from additional pavement. Areas 1A and 1C present marginal habitat for T&E species because of their close proximity to the existing interstate system and an urban environment. There are already bridge piers in the Missouri River floodway (including two piers in the river) for the existing I-80 bridge, and the piers for the new bridge would be similar in shape and orientation as the existing piers. Therefore, the piers for the new bridge would introduce an additional, but not a different, modification of the existing environment. Pallid sturgeon, lake sturgeon, and sturgeon chub may benefit from the introduction of additional piers to create scour pools for potential habitat. Habitat suitable for western prairie fringed orchid and eastern massasauga rattlesnake in Area 1C is marginal and not included in the preliminary impact area. The increase in traffic noise levels over 20 years is only 1 to 2 A-weighted decibels. This change would not present significant impacts and would be barely noticeable to bald eagles and Indiana bats if they use Areas 1A and 1C as habitat. Storm events would result in a slight increase in stormwater runoff compared to the current environment. Although some of the runoff will eventually reach the Missouri River, vegetated drainage swales will help limit runoff.

Based on the aforementioned information, the Segment 1 Project may affect, but is not likely to adversely affect, bald eagle, Indiana bat, pallid sturgeon, lake sturgeon, and sturgeon chub. No effect is anticipated on prairie bush clover, American ginseng, western prairie fringed orchid, piping plover, interior least tern, and eastern massasauga rattlesnake. The BE was sent to USFWS, Iowa DNR, and the Nebraska Game and Parks Commission (NGPC) for their review (see Appendix B).

3.6.4 Avoidance, Minimization, and Mitigation

Measures to avoid, minimize, and mitigate impacts on T&E species during construction are addressed in Section 3.13.4. The use of vegetated drainage swales will help minimize runoff from additional pavement, which would help minimize the introduction of additional pollutants to the Missouri River and reduce impacts on pallid sturgeon, lake sturgeon, and sturgeon chub.

3.7 CULTURAL RESOURCES

Cultural resources include historic and archaeological items, places, or events considered important to a culture, community, tradition, religion, or science. Historic and archaeological resources are locations where human activity measurably altered the earth or left deposits of physical or biological remains. Section 106 of the National Historic Preservation Act of 1966 (NHPA) (16 USC 470f) requires Federal agencies to determine whether their actions have adverse impacts on historic properties (any historic structure, archaeological site, or other property listed on or eligible for listing on the National Register of Historic Places [NRHP]) and to take certain steps to avoid these resources, minimize impacts, or mitigate impacts.

During preparation of the Tier 1 EIS, Tallgrass Historians L.C. conducted a reconnaissance survey within the CBIS Study Area for potential historic properties in Iowa and Nebraska (Nash, 2003) and another for potential archaeological resources in Iowa (Rogers, 2003). In addition, the Nebraska State Historical Society (NSHS) conducted a review of archaeological resources within the CBIS Study Area in Nebraska (Bozell, February 24, 2003; July 23, 2003; and September 1, 2004).

During Tier 2, a historical/architectural intensive-level survey was conducted (Nash, April 2006) that included a detailed investigation of properties within and adjacent to the Tier 1 area of potential impact in Iowa and Nebraska. The Tier 1 area of potential impact was considered to be the Area of Potential Affect (APE) (see Figure 3-4) for this Tier 2 study. The APE must be identified for State Historic Preservation Office (SHPO) evaluation of cultural resource studies and was defined as the Tier 1 area of potential impact because the preliminary impact area had not been determined when the field studies were conducted. A Tier 2 archaeological investigation was only performed for the Iowa portion of the APE because the Nebraska SHPO archaeologist concurred that no additional archaeological surveys were required in the Nebraska portion of the APE.

3.7.1 Existing Conditions

Historic Properties

The majority of the historical/architectural intensive-level survey focused on properties along I-80 in Omaha, where 77 properties were evaluated; three properties along I-80 in Iowa were also reviewed. Forty-eight of the 80 properties had at least one principal resource that appeared to be 50 years of age or older, while the remainder of the properties was modern or less than 50 years old.

Only one property was initially recommended eligible for listing on the NRHP, a residence at 1903 Ontario Street in Omaha. The Nebraska SHPO commented that the residential property is not likely eligible individually, but could potentially be eligible as part of a historic district (NSHS, May 18, 2006) for the Cottage Park plat of residential properties. Based on a detailed review of the potential area as a historic district, a consideration of the different ages and types of residences and the modifications to the residences determined that there is no potential for a historic district (Nash, June 2006); the Nebraska SHPO concurred with this determination (NSHS, June 26, 2006). Consequently, the residential property was determined ineligible for listing on the NRHP as an individual property or as contributing to a historic district.

The Segment 1 APE crosses the very edge or tip of Spring Lake Park and Deer Hollow Park (see Figure 3-4), which are under consideration as contributing resources to an Omaha historic park and boulevard district (NRHP-nomination work is in process) (Nash, April 2006).

Archaeological Resources

In the NSHS review of archaeological resources conducted during Tier 1 (Bozell, February 24, 2003; July 23, 2003; and September 1, 2004), no archaeological sites were found within the Nebraska portion of the Segment 1 Study Area. The Nebraska SHPO archaeologist concurred that no additional archaeological surveys are required in Nebraska and that there would be no effect on historic properties (NSHS, March 5, 2003; August 7, 2003; and September 14, 2004). Appendix B contains the letters noting concurrence. Consequently, no further archaeological investigation occurred in Nebraska for Tier 2.

Archaeological resources in the Iowa portion of the Segment 1 Study Area have been investigated through surveys for the WHTC and various road improvement projects. The recent surveys conducted by Tallgrass Historians L.C. (Rogers, 2003 and December 2005) have built on previous investigations and knowledge of sites recorded with SHSI. The Phase I archaeological evaluation conducted during Tier 2 (Rogers, December 2005) determined that the Segment 1 APE in Iowa has a low potential for archaeological sites of significance based on varying channel locations for the Missouri River and therefore warranted no further archaeological investigation.

3.7.2 No-Build Alternative

Under the No-Build Alternative, no transportation improvements would occur in the Segment 1 Study Area, and no project-related impacts on cultural resources would occur. However, if the interstate improvements are not constructed, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future projects could result in impacts on cultural resources.

3.7.3 Build Alternative

Historic Properties

The historical/architectural intensive-level survey (Nash, April 2006) and supplemental report (Nash, June 2006) concluded that Segment 1 contains no individual properties eligible for listing on the NRHP. As noted in Section 3.7.1, Spring Lake Park and Deer Hollow Park are under consideration as contributing resources to an Omaha historic park and boulevard district (NRHP-nomination work is in process). The preliminary impact area for the Segment 1 Project avoids Spring Lake Park. The initial interstate through Omaha subdivided Deer Hollow Park and eliminated components of the Omaha Park and Boulevard System, which is a system of green space and recreational areas joined by tree-lined boulevards. The Segment 1 Project only affects a small fringe (0.27 acre) of existing parkland and 0.07 acre of the Omaha Park and Boulevard System; these represent a negligible portion of the existing Omaha Park and Boulevard System remnants (see Section 3.8.3). The potential acquisition of a small component of the Omaha Park and Boulevard System would not affect the eligibility of the system. Even if an Omaha historic park and boulevard district is established, the impacts of fringe acquisition would not adversely affect the historic nature of the district.

A determination of no historic properties affected for Segment 1 was submitted to both Nebraska SHPO and Iowa SHPO for concurrence. NDOR sent a letter to NSHS requesting concurrence that no historic properties in Nebraska would be affected[15] by the Segment 1 Project, and the Nebraska SHPO historian concurred with the findings of no effect on the Omaha Park and Boulevard System for Deer Hollow Park and Spring Lake Park (NSHS, May 18, 2006). The Nebraska SHPO historian requested further information regarding the property at 1903 Ontario Street relative to its eligibility individually or as part of a potential historic district. Additional study was conducted (Nash, June 2006), and the Nebraska SHPO historian concurred with the findings that the property was not eligible for listing on the NRHP as an individual property or contributing to a historic district (NSHS, June 26, 2006). Iowa DOT sent a letter to SHSI seeking concurrence that no historic properties in Iowa would be affected by the Segment 1 Project (Iowa DOT, May 17, 2006). SHSI concurred on June 18, 2006, with the finding that no historic properties in Iowa would be affected by the Build Alternative. Appendix B contains correspondence to and from Nebraska SHPO and Iowa SHPO.

Consequently, the Segment 1 Project would not result in significant impacts on historic properties.

[15] Section 106 of the NHPA requires an evaluation of impacts to result in a determination of effects to cultural resources. The determinations include "No Effect to Historic Properties," "No Adverse Effect to Historic Properties," and "Adverse Effect to Historic Properties." The determinations are applicable to archaeological sites as well as historic properties.

Archaeological Sites

There are no known archaeological sites within the APE or the narrower boundary of the preliminary impact area. Nebraska SHPO issued a statement that the Segment 1 Project would have no effect on historic properties within the Nebraska portion of the CBIS Study Area (NSHS, September 14, 2004); this applies to archaeological sites. Iowa DOT sent a letter to SHSI seeking concurrence that no historic properties would be affected by the Segment 1 Project in Iowa, and the Iowa SHPO archaeologist concurred with the findings on February 22, 2006 (Iowa DOT, February 17, 2006). Consequently, no significant impacts on archaeological sites would result from the Segment 1 Project.

3.7.4 Avoidance, Minimization, and Mitigation

Conceptual and preliminary design of the Segment 1 Project focused on avoiding and minimizing impacts by adding lanes adjacent to the existing transportation corridor. The Build Alternative would not impact cultural resources. Therefore, no mitigation for cultural resource impacts is required.

3.8 SECTION 4(f) AND SECTION 6(f) RESOURCES

Section 4(f)[16] of the U.S. Department of Transportation Act of 1966, codified at 23 USC 138 and 49 USC 303, states that FHWA "may approve a transportation program or project requiring publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if there is no prudent or feasible alternative to using that land and the program or project includes all possible planning to minimize hardship to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." Historic sites include archaeological sites eligible for listing on the NRHP for more than information potential.

FHWA and Iowa DOT have developed a Section 4(f) decision process to determine the eligibility of properties or sites for protection under Section 4(f) and to evaluate them relative to the alternatives being considered. The Section 4(f) decision process involves the following five steps:

- Step 1 – Is it 4(f)?
- Step 2 – Is there a use of the 4(f) property?
- Step 3 – Can the 4(f) property be avoided?
- Step 4 – Can the impacts to the 4(f) property be minimized?
- Step 5 – What documentation is needed?

The results of Step 1 are presented in Section 3.8.1, Existing Conditions, and the results of Steps 2 through 5 are presented in Sections 3.8.2, No-Build Alternative, and 3.8.3, Build Alternative.

Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LAWCON) (16 USC 460l-4 through 460l-11) states that public-use lands developed with LAWCON funds cannot be

[16] The term "Section 4(f)" is replaced by the term "Section 303" in the SAFETEA-LU. In keeping with current guidance from FHWA and the state transportation departments, however, this EA retains the term "Section 4(f)."

converted to anything other than outdoor public recreation lands without approval from the Secretary of the Department of the Interior (DOI). In order to convert a Section 6(f) resource, coordination is required with DOI, the respective state agencies, and the local agency with jurisdiction over the park or recreation area. Replacement land must be identified, if possible, to obtain a conversion in kind for the affected land.

In Tier 1, an investigation of potential Section 4(f) resources within the CBIS Study Area was conducted. The Tier 2 process for the Segment 1 Project includes the following: consideration of Section 4(f) and Section 6(f) resources, including formal determination of Section 4(f) applicability by FHWA, coordination with agencies with jurisdiction, and mitigation (as appropriate). Potential impacts were evaluated by considering the preliminary impact area boundary in relation to the location of Section 4(f) and Section 6(f) resources.

3.8.1 Existing Conditions

In Tier 2, the Step 1 evaluation determined the eligibility of properties or sites along Segment 1 for protection under Section 4(f), and this is documented in two technical memoranda (HDR, February 2006a and August 2006c). The properties along Segment 1 that were determined eligible for protection under Section 4(f) are described in Table 3-3 and are shown in Figure 3-5. The preliminary impact area shown in Figure 3-5 indicates the anticipated limits within which construction could possibly occur.

Although Kenefick Park, which is located on a portion of Lauritzen Gardens north of I-80 near the Missouri River, is within the Segment 1 Study Area, it is privately owned, as is the portion of Lauritzen Gardens that it occupies. Therefore, these do not qualify as Section 4(f) properties.

The Segment 1 Study Area includes no wildlife or waterfowl refuges or archaeological sites eligible for listing on the NRHP; therefore, wildlife and waterfowl refuges and archaeological sites were not evaluated in the Step 1 technical memoranda.

As stated in the Tier I Draft EIS, recreational trails open to the public are considered Section 4(f) properties. Existing as well as future trails are properties eligible for protection under Section 4(f). The Back-to-the-River Trail (a component of the Omaha Riverfront Trail) and the Iowa Riverfront Trail (a portion of which is within the WHTC) are both in the Segment 1 Study Area. However, the continuity of and access to these trails would be maintained during and after construction; therefore, FHWA agreed that these Section 4(f) resources would be only temporarily occupied and that the temporary occupancy would not result in a direct or constructive use.[17] Coordination has occurred with the Omaha Parks, Recreation, and Public Property Department and the Council Bluffs Parks, Recreation, and Public Property Department to note the conditions that would result in temporary occupation (see Appendix B).

A portion of Spring Lake Park was developed with a combination of City of Omaha and LAWCON funds in 1972. These developments include the swimming pool, wading pool, bath house, and parking lot. The agreement to obtain the LAWCON funds did not include a provision to exclude the portion of the park not developed with LAWCON funds from protection under Section 6(f) (National Park Service, December 7, 2005). As a result, the entire 96-acre park is protected by Section 6(f).

---

[17] A direct use impact occurs when a property protected by Section 4(f) is permanently incorporated into a transportation facility or is temporarily occupied, causing effects that are considered adverse. A constructive use impact occurs when a project does not incorporate (or remove) a property protected by Section 4(f) but is so close to the property that the activities, features, or attributes of the property are substantially impaired.

Table 3-3
Section 4(f) Resources

Name	Location	Type	Description
Spring Lake Park	Omaha	Park	This 96-acre park, owned and managed by the City of Omaha, features a playground, tennis court, swimming pool, 9-hole par-3 golf course, and walking trail. The park is a component of the Omaha Park and Boulevard System, a potential historic district.
Deer Hollow Park	Omaha	Park	This neighborhood park, owned by the City of Omaha, features a playground, basketball court, and bike/walking path. The park was originally 18 acres but was split when I-80 was built. Approximately 5.8 acres exist north of I-80 and 1.8 acres exist south of I-80, for 7.6 total acres. The park is a component of the Omaha Park and Boulevard System, a potential historic district.
Omaha's Henry Doorly Zoo	Omaha	Recreation area	This 155-acre publicly owned zoo evolved from the small Riverview Park Zoo, established in 1894, and is currently on Riverview Park land leased by the Zoo. The main portion of the Zoo, with a variety of exhibits and a railroad, is located south of I-80, but a small portion of Zoo land (approximately 11 acres) is north of I-80. The area north of the Zoo consists of maintained grass and is occasionally used for watching fireworks from Rosenblatt Stadium.
Western Historic Trails Center	Council Bluffs	Multiple-use[1] recreation area	This 423-acre multiple-use site (with 72 acres leased for the Council Bluffs Recreation Complex) houses an interpretive center with exhibits, pedestrian/bicycle trails, and adjacent lands comprising multiple ecosystems. The WHTC was built by the National Park Service and is operated by SHSI.

Notes:
[1] *Multiple-use publicly owned recreation areas may include components of land that are not used for recreational purposes. Consequently, Section 4(f) applies only to those areas that serve a recreational purpose.*

3.8.2 No-Build Alternative

Under the No-Build Alternative, no transportation improvements would occur in the Segment 1 Study Area, and no project-related impacts on Section 4(f) or Section 6(f) resources would occur. If the interstate improvements are not constructed, however, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future projects could result in impacts on Section 4(f) or Section 6 (f) resources.

3.8.3 Build Alternative

The Segment 1 Project would permanently affect three of the Section 4(f) resources identified in Table 3-3, above: Deer Hollow Park, the Zoo, and the WHTC. Spring Lake Park, also identified in Table 3-3, above, would not be permanently affected by the Segment 1 Project. Table 3-4 summarizes the impacts on the Section 4(f) and Section 6(f) resources identified in Table 3-3, and these resources are discussed in the sections that follow.

Table 3-4
Impacts on Section 4(f) and Section 6(f) Resources

Name	Permanent Impacts[1]	Description of Impacts
Spring Lake Park	0.00 acres	No parkland would be acquired for the project ROW because the park is south of the Segment 1 preliminary impact area. Consequently, no use of Section 4(f) or Section 6(f) land would occur.
Deer Hollow Park	0.27 acre of parkland (3.4% of total park area) 0.07 acre of Omaha Park and Boulevard System	The land to be permanently incorporated into the interstate system includes narrow strips of land on the north and south sides of the existing interstate corridor and does not include any of the developed or recently renovated park facilities.
Omaha's Henry Doorly Zoo	0.89 acre of zoo (0.6% of total area)	Most of the land affected is adjacent to storage and maintenance locations. No Zoo exhibits, walking trails, or railroad tracks of the Zoo's railroad system would be affected, but a flagpole and some fencing may need to be relocated.
Western Historic Trails Center	2.04 acres of WHTC (0.6% of total area) 0.00 acres of recreational component of WHTC	The portion of the WHTC to be affected by the Segment 1 Project includes woodland not eligible for protection under Section 4(f). The primary function of the woodland is not to act as a recreation area or wildlife or waterfowl refuge, and it is not a significant cultural resource. No use of Section 4(f) land would occur.

Notes:
[1] *"Permanent Impacts" identifies land permanently incorporated into the project ROW. However, the preliminary impact area does not differentiate between land needed for ROW, construction easement, and area that might not be disturbed due to final design. Consequently, the potential Section 4(f) property impacts presented are a conservative estimate of actual impacts.*

Spring Lake Park

No direct or constructive use of Spring Lake Park would occur because the preliminary impact area is approximately 35 feet north of Spring Lake Park (see Figure 3-5). Noise and vibration levels are not expected to have an impact on this property, and no visual or aesthetic impact is anticipated because the interstate is currently present. Ecological intrusion would not occur because the interstate is already present, and the associated noise and vibration that may disturb wildlife habitat would not change appreciably with the project.

A portion of Spring Lake Park was developed using LAWCON funds. The entire park is eligible for protection under Section 6(f) because no provision was made to exclude the rest of the park from use of the funds at the time the funding was granted. As a result, coordination with DOI, respective state agencies, and the Omaha Parks, Recreation, and Public Property Department would be necessary if any parkland were incorporated into the potential future ROW. Given the current limits of the preliminary impact area, however, no impact on this Section 6(f) property would occur.

Deer Hollow Park

Deer Hollow Park has been identified as a remnant of the Omaha Park and Boulevard System (Nash, 2003) and is under consideration as a contributing resource to an Omaha historic park and boulevard district (see Section 3.7, Cultural Resources). Portions of the Omaha Park and Boulevard System in this area were originally referred to as "Deer Park" and "Deer Park

Boulevard." Design of the Deer Park Boulevard system began in 1889 but was not fully implemented; little remains of the original design. The Deer Park Boulevard system extended west from Riverview Park, which is currently property of the Zoo, through Deer Park, and past 29th Street. The Omaha Parks, Recreation, and Public Property Department considers the original boulevard system as part of Deer Hollow Park based on the system's connection to the park as well as the department's continued maintenance of the grounds (Omaha Parks, Recreation, and Public Property Department, January 9, 2005).

Figure 3-6 shows the current boundaries of Deer Hollow Park and areas that are maintained by the Omaha Parks, Recreation, and Public Property Department and are within the preliminary impact area but outside of current interstate ROW. The current Deer Hollow Park boundaries were identified using NDOR's ROW boundaries for the interstate. The areas maintained by the Omaha Parks, Recreation, and Public Property Department are either remnants of the original Deer Park and Deer Park Boulevard system or areas where access was modified adjacent to the Deer Park Boulevard system to accommodate previous interstate improvements. As shown in Figure 3-6, minimal land maintained by the Omaha Parks, Recreation, and Public Property Department is within the preliminary impact area but outside of the existing ROW fence. The land that would be permanently incorporated into the interstate system is a narrow strip of land on the north and south sides of the existing interstate corridor between the corridor and existing streets; this land does not include any of the developed or recently renovated park facilities.

Deer Hollow Park is a 7.92-acre property that is both an active public recreation area and part of a potential Omaha historic park and boulevard district. As such, it qualifies for Section 4(f) protection under two criteria. The first criterion applies to significant historic sites and includes the entire park property as well as remnants of the Omaha Park and Boulevard System. Nebraska SHPO considered the impacts on the Omaha Park and Boulevard System and determined that the Segment 1 Project would have no effect on the potential eligibility of the system to qualify as a historic district under the NRHP. A total of 0.27 acre of the 7.92-acre Deer Hollow Park property would be permanently incorporated into the interstate system; this equates to 3.4 percent of the total Deer Hollow Park area. In addition, 0.07 acre of the remnants of the Omaha Park and Boulevard System that is still maintained by the Omaha Parks, Recreation, and Public Property Department would also be permanently incorporated into the interstate system.

The second criterion applies to significant public parks. Under this criterion, the 0.27 acre of the park needed for the Segment 1 Project is protected by Section 4(f), but the 0.07 acre of the Omaha Park and Boulevard System is not considered as park and recreational land under Section 4(f) because that is not the function or major purpose of the land. Incidental, secondary, occasional, or dispersed park or recreational activities do not constitute a major purpose (FHWA, March 1, 2005). However, the 0.07 acre is still considered part of the Omaha historic park and boulevard district potentially eligible for listing on the NRHP.

Omaha's Henry Doorly Zoo

The Zoo is a property that has conservation, research, recreation, and educational-related activities. Figure 3-7 shows the current boundaries of the preliminary impact area as well as Zoo property lines and features. No developed Zoo facilities are located north of I-80. None of the Zoo exhibits or railroad tracks are within the preliminary impact area south of I-80. The exhibit building closest to the preliminary impact area is the small mammal building, which is approximately 150 feet south of the preliminary impact area. The railroad tracks at their closest point are approximately 60 feet south of the preliminary impact area and enclose the gaur exhibit. The northernmost fence enclosing Wolf Woods, currently housing African wild dogs, is located approximately 40 feet south of the preliminary impact area. The preliminary impact area within the Zoo property south of I-80 is approximately 10 feet north of a walking trail and 2 feet north

of a flagpole. The preliminary impact area extends to the perimeter fence around the Zoo maintenance complex south of I-80 and would not affect two adjacent maintenance buildings; the buildings are not used for any recreational or educational purposes.

A total of 0.89 acre of the 155-acre Zoo property (the land is part of Riverview Park land leased to the Zoo by the Omaha Parks, Recreation, and Public Property Department) would be permanently incorporated into the interstate system as ROW or a permanent easement; this equates to approximately 0.6 percent of the total area of the Zoo. Approximately 0.29 acre would be from Zoo property north of I-80 that includes land used for maintenance activities and storage of landscaping materials and 0.60 acre would be from Zoo property south of I-80 in close proximity to some recreational resources.

WHTC

The WHTC is a multiple-use facility that has recreational, interpretive, educational, and museum-related activities. Figure 3-8 shows the WHTC property in relation to the preliminary impact area for the Segment 1 Project. As noted in Section 3.2.3, Build Alternative, it is possible that most of the WHTC land shown within the preliminary impact area may not need to be acquired. However, for purposes of analysis, this study assumes that the land would need to be acquired. Figure 3-8 also shows yellow shading on the portion of the WHTC that is used for recreation. The Iowa Riverfront Trail extends beneath the existing I-80 Missouri River bridge and would also be beneath the new Missouri River bridge to the north of the existing bridge. As noted previously, there would only be temporary occupancy of the trail, which would not constitute a Section 4(f) use. The woodland that would be affected by the Segment 1 Project is not eligible for protection under Section 4(f) because its primary function is not to act as a recreation area or wildlife or waterfowl refuge, and it is not a significant cultural resource. There would be no direct use of the WHTC because the land that would be permanently incorporated into the transportation facility is not protected under Section 4(f).

Because the WHTC is a multiple-use facility, the land incorporated into the interstate system is not protected by Section 4(f), and there is no direct use, the WHTC was also evaluated for a constructive use of recreational properties that are protected by Section 4(f). The preliminary impact area is approximately 10 feet north of a nature trail (the closest recreational resource) in the WHTC. Noise and vibration levels are not expected to have an impact on the recreational components of the WHTC, and no visual or aesthetic impact is anticipated because the interstate is currently present. Similarly, ecological intrusion would not occur because the interstate already exists and the associated noise and vibration that may disturb wildlife habitat would not change appreciably with the project. Thus, there is no constructive use of land associated with the WHTC.

Assuming that all of the WHTC land shown within the preliminary impact area would need to be acquired for the Segment 1 Project, a narrow strip of land, totaling 2.04 acres, of the 351-acre WHTC would be incorporated into the interstate system. This equates to 0.6 percent of the WHTC property and would not impact any recreational use of the property.

Summary

Only narrow strips of land of Deer Hollow Park (including some areas that are maintained by the Omaha Parks, Recreation, and Public Property Department and are remnants of Deer Park Boulevard or have had access modified as part of the initial interstate project), the Zoo, and the WHTC would need to be acquired for the Segment 1 Project. As noted previously, the WHTC land required for the Segment 1 Project is not subject to Section 4(f) protection. Based on the size, function, and overall proportion of land needed from Deer Hollow Park and the Zoo, a Section 4(f) Evaluation would not be needed for the Segment 1 Project.

Based on the above analysis, FHWA has determined that the project would qualify for a *de minimis* impact finding (FHWA, September 28, 2006). A proposed *de minimis* impact finding addressing incorporation of land from Deer Hollow Park and the Zoo was prepared to verify that avoidance, minimization, and mitigation or enhancement measures have been incorporated into the Segment 1 Project. Appendix C includes a reproduction of the proposed *de minimis* impact finding formatted for this EA. The proposed *de minimis* impact finding is being made available for public and agency review as required under proposed 23 CFR 774.5(b)(2), implementing Section 6009 of SAFETEA-LU (71 FR 42611). Public and agency comments on the proposed *de minimis* impact finding, either through review of this EA or participation at the public hearing on this EA, will be analyzed. If the analysis introduces no significant controversy, the *de minimis* impact finding would be included with a Finding of No Significant Impact (FONSI) as an EA appendix and signed by FHWA, assuming no significant adverse impacts are determined to occur from this Project (see Section 6). If comments require modification, the proposed *de minimis* impact finding would be revised and included with the FONSI as an EA appendix and signed by FHWA. If there is significant controversy, the proposed *de minimis* impact finding will be re-evaluated to determine if the application is valid.

3.8.4 Avoidance, Minimization, and Mitigation

Avoidance

In accordance with Step 3 of the FHWA/Iowa DOT Section 4(f) decision process, several avoidance alternatives evaluated in the Tier 1 EIS were analyzed, but none were determined to be prudent alternatives to avoiding Section 4(f) properties (HDR, August 2006c). None of the Tier 1 avoidance alternatives met the purpose of and need for the Segment 1 Project. The Build Alternative meets the project purpose and need, while the other alternatives do not. As a result, there is no feasible and prudent alternative that avoids all Section 4(f) properties.

Under the Build Alternative, Deer Hollow Park and the Zoo have land subject to Section 4(f) protection that would be directly incorporated into the project. Because both properties include land on both the north and south sides of the existing interstate corridor (see Figure 3-5) and an expansion of existing interstate ROW is required to implement the Build Alternative, there is no way to avoid the noted direct uses of Deer Hollow Park and the Zoo.

Minimization

Although use of some property from Deer Hollow Park and the Zoo cannot be feasibly and prudently avoided, the use has been minimized in the design process. As part of the design development process, potential acquisition of ROW from Deer Hollow Park and the Zoo has been minimized to the extent practicable without compromising the ability to meet the project purpose and need as well as safety standards. The impacts presented above in Table 3-4 include minimization measures already incorporated into the project design.

Minimization measures evaluated for incorporation into the design for Deer Hollow Park included a guardrail and a 2-foot horizontal to 1-foot vertical (2H:1V) slope as well as a safety section with a 6-foot horizontal to 1-foot vertical (6H:1V) foreslope out to the lateral clear zone[18] and a 3-foot horizontal to 1-foot vertical (3H:1V) foreslope outside the clear zone (NDOR, April 5, 2006). The guardrail and 2H:1V slope would avoid a use of Deer Hollow Park for the highway, but this measure is not prudent because of the safety hazards for drivers and park visitors created by the steep slope in the event of an accident on the interstate. In addition, this measure would not avoid use of the maintained areas of the Omaha Park and Boulevard System.

[18] The lateral clear zone is 30 feet from the edge of the traveled way.

Consequently, NDOR decided on the typical safety section described above because it was the most prudent in terms of safety and would have only a minimal impact on Deer Hollow Park and the Omaha Park and Boulevard System.

For the Zoo, no design modifications were identified that would avoid a use of Zoo property on both the north and south sides of the interstate. However, the design includes concrete retaining walls along I-80 that would reduce the use of Zoo property on the north and south sides of the interstate. The wall would avoid relocating the Zoo's access road off Riverview Boulevard on their property north of I-80. To minimize the use of the Zoo south of the interstate, a concrete barrier would be constructed on top of a retaining wall to avoid the need to slope back the existing hill.

Mitigation

Coordination occurred with the Omaha Parks, Recreation, and Public Property Department to determine mitigation for the small amount of Section 4(f) land of Deer Hollow Park and the Omaha Park and Boulevard System that would be affected by the Segment 1 Project (see Appendix B for the coordination letter and Appendix C for the *de minimis* impact finding). NDOR will work with the Omaha Parks, Recreation, and Public Property Department to identify suitable locations for replacement trees to mitigate the potential loss of the two tree rows recently planted at the current park boundary north of the interstate and trees removed on land maintained by the Omaha Parks, Recreation, and Public Property Department that was part of the original Omaha Park and Boulevard System; trees would be replaced at a minimum of one for each tree removed. The tree rows along the toe of the interstate slope north of I-80 include a stormwater drainage system that would likely need to be replaced or improved as a result of the Segment 1 Project.

Coordination also occurred with the Omaha Parks, Recreation, and Public Property Department and the Zoo to address mitigation for incorporation of small areas of Zoo property into interstate ROW (see Appendix B for the coordination letter and Appendix C for the *de minimis* impact finding). Mitigation will be performed to repair or replace existing features affected by the Segment 1 Project. The construction impact area would occur near the Zoo's flagpole and fence to the south of I-80. The fence has 4-foot footers to prevent dogs and other animals from burrowing underneath the fence and entering the Zoo (Omaha's Henry Doorly Zoo, July 7, 2006). NDOR will work with the Omaha Parks, Recreation, and Public Property Department and the Zoo to relocate, and replace if necessary, the flagpole and fence.

3.9 NOISE

Traffic noise consists of vehicular engine noise and tire noise from contact with the roadway surface. In general, noise can be defined as unwanted sound. Sound is produced by the vibration of sound pressure waves in the air, and sound pressure levels are expressed in units called decibels (dB). The type of scale that best approximates the frequency response of the human ear is called the A-scale. Therefore, noise levels are measured as and reported in A-weighted decibels (dBA). The Tier 1 Draft EIS provides additional background on noise levels and Noise Abatement Criteria (NAC) developed by FHWA.

Traffic noise for the existing and future environment was predicted for the CBIS Improvements Project and summarized in the Tier 1 EIS. This effort did not involve noise monitoring or modeling and only predicted typical noise levels by roadway categories and other factors. Two detailed noise studies, one for the Nebraska portion (URS, October 2006) and one for the Iowa portion (HDR, April 2006) of Segment 1, were performed for the Tier 2 analysis. Copies of the noise reports are included in Appendix D. The purpose of the studies was to identify current

noise levels in the Segment 1 Study Area and to quantify the impacts of the Build Alternative relative to the NAC noise levels. Traffic noise levels were estimated using the FHWA Traffic Noise Model (TNM), Version 2.5, based on traffic volume forecasts for peak hours in 2030 because these volumes would correspond to the highest projected noise levels.

The evaluation results provided below apply to impacts on the inhabited structures in the human environment. Although the NDOR and Iowa DOT noise policies (NDOR, May 1998; Iowa DOT, April 17, 2003) do not address the natural environment, it is expected that noise levels on the Missouri River and other adjacent areas would increase under the Build Alternative.

3.9.1 Existing Conditions

In the Nebraska portion of the Segment 1 Study Area, noise levels were measured at seven representative locations in December 2005 (see Figure 3-9). Measurements were taken during the hours of highest traffic noise conditions, from 3:30 p.m. to 5:00 p.m. Noise measurements were taken with a Metrosonics 3080 sound level dosimeter, which takes continuous samples and computes the resultant hourly equivalent sound level (L_{eq}).[19] The distance to noise impact contours varies significantly through the Nebraska portion of the Segment 1 Study Area due to changes in terrain, variations in traffic levels, and the presence of shielding conditions. To accommodate this, the Nebraska noise contours represent conditions where the roadway and the noise receiver are at the same elevation, with a direct line of sight between them. For this reason, in many locations, the actual width of the noise impact contour is narrower than the typical noise impact contour distances.

In the Iowa portion of the Segment 1 Study Area, noise levels were measured at one representative location on January 19, 2006 (see Figure 3-9). The measurement was taken during the hours of highest traffic noise conditions, from 3:30 p.m. to 5:00 p.m. Noise measurements were taken with a Type I noise meter. The noise contours in the Iowa portion of the Segment 1 Study Area were modeled with the river as reflective. Project elevations were taken into account.

The monitored noise levels at all (Nebraska and Iowa) monitoring locations are provided in Table 3-5. The monitoring results were used as a comparison to the TNM predicted results, also shown in Table 3-5, to ensure that the model was properly calibrated.

Noise walls are sometimes used to mitigate traffic noise from busy roads. The only noise wall existing in the Segment 1 Study Area is located in Nebraska, north of I-80 and east of 20th Street.

3.9.2 No-Build Alternative

Of the 253 noise-sensitive receivers identified in the Segment 1 Study Area (252 in Nebraska and one in Iowa), 113 in Nebraska are predicted to approach or exceed the NAC under the No-Build Alternative. Generally, 2030 noise predictions for the No-Build Alternative are 1 to 2 dBA higher than existing noise levels and 1 to 2 dBA lower than 2030 noise predictions for the Build Alternative.

3.9.3 Build Alternative

Of the 253 noise-sensitive receivers identified in the Segment 1 Study Area, 119 in Nebraska are predicted to approach or exceed the NAC under the Build Alternative. This equates to six more noise-sensitive receivers that will approach or exceed the NAC than under the No-Build

[19] The L_{eq} is the energy equivalent sound level, in decibels, for any time period under consideration (in this case, hourly) that contains the same sound energy as the actual monitoring sound that is fluctuating in level over the measurement period.

Alternative. The noise study reports included in Appendix D identify the receiver locations on aerial photographs and provide tables showing predicted noise levels for the No-Build and Build Alternatives. Six additional receivers is not considered a significant addition to projected conditions under the No-Build Alternative.

Table 3-5
Monitored Noise Levels by Location

Monitoring Location	Time (Range)	Distance to Centerline (feet)	Measured L_{eq} (dBA)	TNM Model L_{eq} (dBA)
Nebraska Monitoring Locations				
1	3:56 p.m. 4:11 p.m.	270	71.4	69.7
2	4:21 p.m. 4:36 p.m.	230	72.5	72.2
3	3:37 p.m. 3:52 p.m.	430	58.1	59.5
4	4:02 p.m. 4:10 p.m.	530	68.5	67.9
5	4:16 p.m. 4:31 p.m.	220	66.6	68.0
6	4:37 p.m. 4:47 p.m.	170	69.4	70.8
7	4:02 p.m. 4:17 p.m.	160	71.3	72.0
Iowa Monitoring Locations				
M1	3:53 p.m. 4:25 p.m.	230	66.7	68.0

Sources:
HDR. April 2006. Noise Study Technical Memorandum (For the portion of Segment 1 located in Iowa).
URS. October 2006. Interstate-80: 24th Street Bridge to Missouri River Bridge. Noise Study Report.

3.9.4 Avoidance, Minimization, and Mitigation

During preliminary roadway design, various constraints, including proximity to existing residences, were considered in determining reasonable alternatives. Residential structures were avoided to the maximum extent possible, considering the terrain and project requirements.

Abatement measures were evaluated at 11 locations in the Nebraska portion of the Segment 1 Study Area (see Appendix D, Nebraska noise report, Figure 5); in Iowa, no abatement measures were evaluated because the NAC are not projected to be met or exceeded in the Iowa portion of the Segment 1 Study Area. All 11 locations were determined to be either not feasible or not reasonable for noise wall construction. Other mitigation measures that were evaluated and determined not to be feasible were to create a buffer zone, to alter the horizontal and vertical alignment, and to initiate traffic management measures (URS, October 2006).

3.10 AIR QUALITY

The Clean Air Act Amendments of 1990 (Public Law [P.L.] 101-549) and NEPA require that environmental documents address potential air quality impacts. The applicability and extent of

the air quality analysis is based primarily on the status of the area studied with respect to Federal and state air quality standards.

A geographic area that meets the primary National Ambient Air Quality Standards (NAAQS) established by EPA to protect public health and the environment is designated as an "attainment area." A geographic area is designated as a "nonattainment area" if air pollution levels persistently exceed NAAQS for any of six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, and particulate matter. The Tier 1 EIS addressed air quality in general, noting that the capacity improvements would increase efficiency of vehicular transportation and could improve air quality by reducing idling (a major generator of emissions). The Tier 2 analysis for the Segment 1 Project involved air quality monitoring (as noted under Section 3.10.3).

3.10.1 Existing Conditions

Douglas County, Nebraska, and Pottawattamie County, Iowa, do not encompass any nonattainment areas. Because no portion of the Segment 1 Project is located in a nonattainment area or in an attainment area with a maintenance plan in place, no conformity determination is required.

The Segment 1 Study Area can be characterized as urban, with associated air emissions from mobile and stationary sources. The relatively rolling nature of the Segment 1 Study Area, associated with a climate including a range of wind speeds from different directions, helps distribute pollutants and minimize the opportunity for exceeding the NAAQS.

3.10.2 No Build Alternative

Under the No-Build Alternative, traffic volumes on roadways within the Segment 1 Study Area are expected to increase. Although vehicle emissions have the potential to increase, emission standards are likely to be lowered in the future, serving as a balance to emissions from increased traffic. Nevertheless, the Segment 1 Study Area is expected to remain in attainment for all criteria pollutants.

3.10.3 Build Alternative

The Segment 1 Study Area is not located in a nonattainment area or in an attainment area with a maintenance plan in place; therefore, no conformity determination is required. FHWA, NDOR, and NDEQ signed a Memorandum of Understanding in November 2004 that requires air modeling of carbon monoxide levels to be performed for a transportation project when the average daily traffic exceeds 100,000 vehicles per day (vpd). Because traffic levels are projected to be approximately 110,000 vpd for Segment 1 of the CBIS in 2030, air modeling was performed to estimate carbon monoxide emissions in Nebraska. The Segment 1 Project's carbon monoxide contribution for the year 2030, combined with the Segment 1 Study Area's ambient background concentrations, was predicted to be below the 1-hour and 8-hour NAAQS (URS, July 2006). Consequently, the proposed improvement is consistent with Nebraska's State Implementation Plan. The report summarizing the air quality modeling effort is included in Appendix E. Iowa has no requirement to perform air modeling in attainment areas.

There are areas in the Segment 1 Study Area where traffic is currently at the lowest level of service (LOS)[20] during peak hours, and traffic conditions would continue to worsen if the improvements were not implemented.

[20] The lowest LOS is LOS F, which denotes unacceptable congestion with stop-and-go forced flow.

The project would increase the efficiency of vehicular transportation on the CBIS and would lessen vehicle idling. Air emissions are more concentrated from idling vehicles; consequently, long-term air quality would improve under the Build Alternative compared to the No-Build Alternative. No significant air quality impacts would result from the Segment 1 Project. The Segment 1 Project may result in short-term impacts on air quality as a result of construction activity (see Section 3.13, Construction).

3.10.4 Avoidance, Minimization, and Mitigation

Mitigation is not required because the Segment 1 Project would not adversely impact air quality through traffic emissions. Measures for minimizing air emissions during construction are addressed under Section 3.13, Construction.

3.11 REGULATED MATERIALS

Properties where hazardous materials or wastes have been stored may present a future risk if spills or leaks have occurred. Additionally, transportation of hazardous materials or wastes may result in an occasional spill or leak. Contaminated or potentially contaminated properties are of concern for transportation projects because of the potential liability for any cleanup costs resulting from ROW acquisition and the safety concerns related to exposure to contaminated soil, surface water, or groundwater associated with project construction.

During Tier 1, potential regulated materials sites within the area of potential impact were identified through a database search and windshield surveys. The results of this reconnaissance investigation were reported in the Tier 1 Draft EIS. During Tier 2, a Phase I Environmental Site Assessment (ESA) was conducted for sites within or near the area of potential impact for Segment 1 (HDR, March 2006). The field study reviewed the Tier 1 area of potential impact because the preliminary impact area for Tier 2 had not been determined at the time of the field investigation. The Phase I ESA involved a database search as well as a windshield survey to investigate sites identified in the database search, to determine uses of properties, and to observe evidence of regulated material releases. Additional work included reviewing agency records for specific sites and interviewing property owners/operators.

Sites outside but near the area of potential impact for Segment 1 were identified for initial evaluation due to their potential risk of contaminant migration into the area of potential impact. Not every property warranted the same level of assessment; therefore, a staged approach was implemented. As information was gathered, it was used to evaluate whether additional assessment was needed for each property. The assessment proceeded only for properties with a likely recognized environmental condition (REC) present. A staged approach was also used to screen sites that were outside the area of potential impact for Segment 1 and to focus the investigation on moderate- and high-risk sites within the area of potential impact.

Sites within the area of potential impact for Segment 1 were assessed for their potential risk using criteria from Iowa DOT's Draft Office of Location and Environment Manual (Iowa DOT, April 2004). Iowa DOT classifies sites as high, moderate, low, or minimal risk. The Phase I ESA report (HDR, March 2006) included recommendations for further investigation, which were considered when determining potential impacts on the sites within or near the preliminary impact area evaluated in this Tier 2 study.

3.11.1 Existing Conditions

Ten sites within or near the area of potential impact for Segment 1 were identified with RECs, as listed in Table 3-6. Some of these sites have a history of incidents that have physically affected

the environment. For purposes of evaluating impacts, the narrower preliminary impact area of the Segment 1 Project was used (see Section 2.1.2, Build Alternative, for a description of the preliminary impact area). Figures 3-10A and 3-10B show the locations of nine of the sites with RECs relative to the preliminary impact area; the Omaha Lead Site is not shown, but its boundary, as defined by EPA, includes all of Segment 1 along I-80 in Nebraska.

Table 3-6
Regulated Materials Sites Located within or near the Preliminary Impact Area

Code[1]	Risk	Name	Address	City and State
N	High	Omaha Lead Site	--	Omaha, NE
G, I	Low	Bemis Company Inc.	3514 S. 25th Street	Omaha, NE
--	Low	Sheet Metal Workers Local #3	3333 S. 24th Street	Omaha, NE
U	Low	Bucky's Express	2765 S. 13th Court	Omaha, NE
BB, K, U	Moderate	Phillips 66 #25850	13th Street and Deer Park Boulevard	Omaha, NE
G, I	Low	Zoo	3701 S. 10th Street	Omaha, NE
CC, L	High	Riverview Meadows Landfill - Stauffer Chemical Company (off-site location)	5th and Bancroft	Omaha, NE
G, I	Low	Eagle Systems	3101 Blake Street	Omaha, NE
E, G, I, S	Moderate	Warren Industries, Inc.	2849/2850 River Road	Council Bluffs, IA
U	Low	I-80 Pump Station	3000 River Road	Council Bluffs, IA

Note:
[1] *The code defines the type of site in various databases. The Sheet Metal Workers Local #3 site was identified in the field and therefore does not have a database code. The codes are as follows:*
BB – Aboveground storage tank (AST) database
CC – Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) No Further Remedial Action Planned (CERC-NFRAP)
E – Emergency Response Notification System (ERNS)
G – Resource Conservation and Recovery Information System (RCRIS)-Small quantity generator (SQG)
I – Facility Index System/Facility Identification Initiative Program Summary Report (FINDS) database
K – Leaking underground storage tank (LUST)
L – Landfill
N – National Priorities List (NPL)
S – Toxic Release Inventory System (TRIS)
U – Underground storage tank (UST)

3.11.2 No-Build Alternative

Under the No-Build Alternative, no transportation improvements would occur in the preliminary impact area for Segment 1, and no project-related impacts from disturbance of regulated materials sites would occur. However, if the interstate improvements are not constructed, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases. Consequently, future projects could result in impacts on regulated materials sites.

3.11.3 Build Alternative

The preliminary impact area for the Build Alternative includes two high-risk sites (the Omaha Lead Site and Riverview Meadows Landfill - Stauffer Chemical Company), one moderate-risk site (Warren Industries, Inc.), and two low-risk sites (the Zoo and the I-80 Pump Station). Also

located a short distance from the preliminary impact area are one moderate-risk site (Phillips 66 #25850) and four low-risk sites (Bemis Company Inc., Sheet Metal Workers Local #3, Bucky's Express, and Eagle Systems). A site characterized as low or minimal risk does not warrant further evaluation of its impact on the Segment 1 Project or for the project's impact on the site. The following lists sites from west to east that are ranked as high or moderate risk and, if applicable, provides recommendations for further investigation:

- Omaha Lead Site – The Omaha Lead Site consists of more than 8,000 acres and includes the entire Nebraska portion of Segment 1. The Tier 1 EIS indicated a potential need (and EPA concurred) for further evaluation of lead levels in soils that could be disturbed by the CBIS Improvements Project along I-80 in Omaha as well as along I-80/I-29 in Iowa near the Missouri River. Consequently, the Omaha Lead Site was recommended for further evaluation. A Phase II ESA to address potentially high levels of lead and arsenic[21] was conducted and included sampling of interstate ROW in Nebraska and Iowa (HDR, August 2006a). The lead and arsenic concentrations detected were below risk-based action levels for remediation. Therefore, the Segment 1 Project would not adversely affect worker or public health from ground disturbance of the interstate ROW potentially affected by the Omaha Lead Site, and no further investigation is warranted.
- Phillips 66 #25850 – Although the database lists this site as a leaking underground storage tank (LUST) and NDEQ has placed the site on backlog for further evaluation, the site has been converted to a King Kong restaurant. The preliminary design of the Segment 1 Project indicates that no reconstruction of 13th Street and Deer Park Boulevard (which is between the interstate ramps and the restaurant) would be necessary, although reconstruction of the ramps would occur. The ramp elevations are higher than Deer Park Boulevard and thus higher than any subsurface contamination that may be present at the former Phillips 66 site. Consequently, no further evaluation of the site is recommended.
- Riverview Meadows Landfill - Stauffer Chemical Company (off-site location) – Recent investigations by NDEQ have resulted in a Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) classification of the Riverview Meadows Landfill site for further evaluation. The information provided by NDEQ indicates that the site boundaries of the landfill are within the preliminary impact area. The preliminary design of the Segment 1 Project shows a small portion of the Project adjacent to the site boundary (see Figure 3-10A). Because of the status as a CERCLIS site, NDEQ was contacted for a recent update. Typically, when a landfill is planned to be disturbed, specific coordination steps to notify NDEQ and permit the process are necessary (NDEQ, April 27, 2006). However, given that disturbance in the area of the landfill would be limited to road and curb improvements of shallow depth, permitting may not be necessary. NDEQ recommended additional interaction during final design.
- Warren Industries, Inc. – This site has had various spills, and some of the bulk storage tanks are approximately 120 feet from the preliminary impact area. The preliminary design of the Segment 1 Project involves construction of a retaining wall approximately 250 feet from the tanks. Based on the potential for contamination in the area where the retaining wall would be placed and at a potential construction staging area, additional evaluation of this site was warranted. A Phase II ESA to address potential contamination on Warren Industries, Inc. property adjacent to the interstate was conducted (HDR,

[21] Recent concerns of high arsenic levels in the Omaha/Council Bluffs metropolitan area were also addressed by analyzing the soil samples for arsenic.

August 2006b). Sampling was conducted for arsenic, lead, volatile organic compounds, and petroleum products. All concentrations detected were below risk-based action levels for remediation. Therefore, the Segment 1 Project would not adversely affect worker or public health (the Iowa Riverfront Trail bisects the property) from ground disturbance of Warren Industries, Inc. property, and no further investigation is warranted.

Based on the review of regulated materials sites within and near the preliminary impact area for Segment 1, no significant impacts on the sites or on the Segment 1 Project are projected to occur.

3.11.4 Avoidance, Minimization, and Mitigation

The Tier 1 and Tier 2 analyses of regulated materials sites revealed the presence of potentially contaminated properties that could affect, or be affected by, the Segment 1 Project. The conceptual and preliminary design process for the Segment 1 Project accounted for avoiding sites, avoiding a potential contamination source (that is, an underground storage tank) at a site, or minimizing the proportion of a site within the preliminary impact area.

As the Segment 1 Project enters final design, NDOR and Iowa DOT would coordinate with EPA on the Omaha Lead Site, NDOR would coordinate with NDEQ on the Riverview Meadows Landfill - Stauffer Chemical Company (off-site location) site, and Iowa DOT would coordinate with Iowa DNR on the Warren Industries, Inc. site. Results from the Phase II ESA investigations in the interstate ROW (to address potential Omaha Lead Site contamination) and at Warren Industries, Inc. determined that no further analysis is required. Based on existing information, no mitigation measures for regulated materials sites are necessary for the Segment 1 Project.

3.12 PERMITS AND APPROVALS

Table 3-7 lists permits and approvals that would be required to implement the Build Alternative.

Table 3-7
Permits and Approvals

Permit or Approval	Granting Agency(ies)	Reason
Section 9 of the Rivers and Harbors Act of 1899; General Bridge Act of 1946	U.S. Coast Guard	The location and plans of bridges and causeways across navigable waters of the U.S. must be submitted to and approved by USCG.
Section 404 permit, Clean Water Act	U.S. Army Corps of Engineers	Authorization is required for placement of dredged or fill material in wetlands or other waters of the U.S. This would occur from pier placement on the Nebraska bank of the Missouri River and is likely to be authorized under Nationwide Permit 14. In addition to this authorization for permanent impacts, Nationwide Permit 33 may be required for temporary impacts related to construction access.
Sovereign Lands Construction Permit	Iowa Department of Natural Resources	This permit is required for construction on, above, or under state-owned water and land in Iowa. This would occur with construction of a bridge on and over the Iowa portion of the Missouri River.

Permit or Approval	Granting Agency(ies)	Reason
Section 401 of the Clean Water Act, Water Quality Certification	Nebraska Department of Environmental Quality, Iowa Department of Natural Resources	This certification is required as part of the Section 9 bridge permit and Section 404 permit issuance.
National Pollutant Discharge Elimination System general stormwater discharge permit for construction activities, Clean Water Act	Nebraska Department of Environmental Quality, Iowa Department of Natural Resources	The NPDES permit, required for construction sites greater than 1 acre in size, authorizes (with the implementation of permit-specified mitigation) the discharge of stormwater associated with activities from a construction site.
Floodplain Development Permit, including no-rise certification	Iowa Department of Natural Resources, City of Omaha, City of Council Bluffs	A Floodplain Development Permit must be obtained from state-designated agencies as authorized by FEMA for various types of floodway/floodplain development as part of participation in the National Flood Insurance Program.
Section 7 of the Endangered Species Act	U.S. Fish and Wildlife Service	Section 7 consultation with USFWS must occur regarding potential impacts on T&E species and their habitat.
Section 106 of the National Historic Preservation Act	Nebraska State Historic Preservation Office, Iowa State Historic Preservation Office	Section 106 consultation must occur regarding potential impacts on historic/architectural properties and archaeological sites.
Section 4(f) of the U.S. Department of Transportation Act	Federal Highway Administration	FHWA must approve the use of properties protected by Section 4(f).
Air Quality Construction Permit	Nebraska Department of Environmental Quality, Iowa Department of Natural Resources	This permit would be required if a new emission unit is needed for construction (such as a portable batch plant for paving applications). Acquisition of this permit may be the responsibility of the roadway construction contractor.
Open Burning Permit	Nebraska Department of Environmental Quality	This permit would be required if any open burning were to occur in Nebraska as a result of the project.
Integrated Solid Waste Management Permit	Nebraska Department of Environmental Quality	Authorization from NDEQ is required for disposal of any hazardous waste or special waste. Disposal arrangements with local landfills would be required.
Landfill Disturbance Authorization	Nebraska Department of Environmental Quality	NDEQ authorization would be required prior to excavation, disturbance of the final cover, or removal of any deposited materials from the Riverview Meadows Landfill.

3.13 CONSTRUCTION

Construction impacts are expected to be short term and to end shortly after project completion. Construction work associated with the Segment 1 Project would include clearing, grubbing, grading, and preparing the roadway embankment; constructing drainageways, ditches, new drainage structures, and bridges; finish grading; paving operations; and landscaping. The Tier 1 Draft EIS, in Section 4.2.14, introduced a variety of potential construction impacts possible

throughout the CBIS Study Area; the evaluation of impacts is incorporated by reference in this EA. Construction impacts discussed included erosion, surface water runoff, noise, air emissions, traffic disruptions, accumulation and disposal of waste, and utility interruptions. Such impacts, though temporary, would be managed as appropriate based on guidance from Iowa DOT and NDOR through tools identified in the agencies' construction manuals, design specifications, Standard Road Plans, and other relevant documents.

Although detailed discussion of construction impacts is not feasible until final design has been completed for the Segment 1 Project, this section discusses general impacts of construction that were not addressed in the Tier 1 Draft EIS.

3.13.1 Recreation

Impacts

During construction of the new bridge, there would be temporary impacts on recreation and navigation on the Missouri River, including short-term closures of river traffic (likely limited to a few hours). Recreational activities at Spring Lake Park, Deer Hollow Park, the Zoo, and the WHTC would not be adversely affected by construction of the Segment 1 Project. Bridge construction has the potential to temporarily affect the use of the following two recreational trails: the Back-to-the-River Trail (a component of the Omaha Riverfront Trail) and the Iowa Riverfront Trail. Both trails are parallel to the Missouri River in the Segment 1 Study Area and are located beneath the existing I-80 Missouri River bridge.

Avoidance, Minimization, and Mitigation

Construction and demolition activities would be coordinated with USCG, and the public would be notified of construction activities in order to minimize impacts. Trail continuity and access would be maintained throughout the construction process by the use of barriers to protect pedestrians and bicyclists.

3.13.2 Wetlands and Other Waters of the U.S.

Impacts

Construction could result in the filling of some wetlands and temporary disturbance of other wetlands.

Avoidance, Minimization, and Mitigation

Temporary impacts on wetlands as a result of construction would be permitted by USACE under Nationwide Permit 33 (67 FR 2020-2095) as part of a Section 404 Permit (see Section 3.12, Permits and Approvals). This nationwide permit allows for temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites. In accordance with the "Notification" general condition associated with this nationwide permit, a restoration plan with reasonable measures to avoid and minimize adverse effects on aquatic resources must be included in the permittee's notification to the USACE district engineer. USACE adds special conditions, when necessary, to minimize adverse effects.

3.13.3 Fish and Wildlife

Impacts

Construction activities and their associated noise would disturb terrestrial wildlife near the ROW. Wildlife within the ROW would seek sanctuary in nearby habitat during grading operations. Construction would also temporarily impact fisheries in the Segment 1 Study Area as many fish would likely avoid the area because of the noise and water disturbances.

Avoidance, Minimization, and Mitigation

With respect to erosion control, best management practices identified in Iowa DOT's and NDOR's construction manuals, design specifications, Standard Road Plans, and other relevant documents would be used to minimize impacts on Missouri River water quality.

3.13.4 Threatened or Endangered Species

Impacts

Based on the results of species and habitat surveys performed in July 2005, construction related to the Build Alternative would have no effect on the prairie bush clover, American ginseng, piping plover, and interior least tern because of the lack of habitat for the species. The presence of suitable habitat in the Segment 1 Study Area was determined for seven other species of concern identified by USFWS, Iowa DNR, and NGPC. A BE was prepared to evaluate potential impacts and perform effect determinations for T&E species (Iowa DOT, May 2006). The following sections address potential direct impacts on those seven species during construction. Cumulative impacts on T&E species are addressed in Section 3.14.3.

Western Prairie Fringed Orchid

Although no western prairie fringed orchid individuals were identified during the July 2005 intensive pedestrian field surveys, marginal western prairie fringed orchid habitat is present in Area 1C. However, the potential habitat is limited to the emergent wetland within Area 1C, and this wetland would not be disturbed by Segment 1 Project construction. Consequently, construction of the Segment 1 Project would result in no effect on western prairie fringed orchid.

Bald Eagle

Although no bald eagles were identified during the July 2005 intensive pedestrian field surveys, loafing habitat was identified along the Missouri River banks in both Nebraska and Iowa and hunting habitat was identified within the Missouri River channel. Bald eagles could be affected by construction through noise, removal of habitat, and disturbance of fisheries. Construction noise would be sporadic, depending on the equipment used. Many fish would likely avoid the area because of the noise and water disturbances. Although bald eagles prey on fish as well as other small animals, they are also likely to avoid the area during construction. The loss of habitat is on the order of several acres and is minimal compared to the hundreds of acres of similar habitat along the Missouri River south of the I-80 bridge. Direct impacts from construction would not be significant with incorporation of avoidance, minimization, and mitigation measures noted below. Construction of the Segment 1 Project may affect, but is not likely to adversely affect, bald eagle.

Indiana Bat

Although no Indiana bats were identified during the July 2005 intensive pedestrian field surveys, suitable summer habitat for this species is present within the Segment 1 Study Area. Loss of habitat may cause crowding in adjacent habitat, increasing the risk of predation and competition

for food/shelter. Additionally, adults/young may avoid area during construction. The area of disturbance is negligible compared to hundreds of acres of similar habitat along the Missouri River south of the I-80 bridge. Direct impacts from construction would not be significant with incorporation of avoidance, minimization, and mitigation measures noted below. Construction of the Segment 1 Project may affect, but is not likely to adversely affect, Indiana bat.

Eastern Massasauga Rattlesnake

Although no eastern massasauga rattlesnakes were identified during the July 2005 intensive pedestrian field surveys, potential habitat is present in Area 1C. However, the potential habitat is limited to the emergent wetland within Area 1C, and this wetland would not be disturbed by Segment 1 Project construction. Consequently, construction of the Segment 1 Project would result in no effect on eastern massasauga rattlesnake.

Pallid Sturgeon, Lake Sturgeon, and Sturgeon Chub

The July 2005 intensive pedestrian field surveys did not involve any capture of fish for a species survey but did result in identification of potential foraging and migrating habitat for the pallid sturgeon, lake sturgeon, and sturgeon chub as well as potential spawning habitat for the lake sturgeon. The placement of piers, aligned with the piers supporting the existing I-80 Missouri River bridge, would disturb pallid sturgeon, lake sturgeon, and sturgeon chub migrating through or foraging in Area 1B. Construction noise and the disturbance of benthic sediment would occur and could affect these fish species. However, similar habitat is present downstream and upstream of the area that would be impacted by the Segment 1 Project. Increased sediment runoff may also result from the construction of piers on land within the Missouri River floodway, in Areas 1A and 1C of Segment 1. Direct impacts from construction would not be significant with incorporation of avoidance, minimization, and mitigation measures noted below. Construction of the Segment 1 Project may affect, but is not likely to adversely affect, pallid sturgeon, lake sturgeon, and sturgeon chub.

Avoidance, Minimization, and Mitigation

Project design would minimize the loss of trees (potential roost sites for bald eagles and foraging sites for Indiana bats) as a result of construction activities. Clearing and grubbing for construction activities would be limited in area to minimize the impact on potential roost sites for bald eagles and foraging habitat for Indiana bats. Clearing and grubbing would occur from October to January to accommodate the tree removal period recommended for the Indiana bat and to avoid the nesting period of the bald eagle and the time frame for nesting migratory birds. If bald eagles are observed roosting in trees scheduled for removal, the trees will not be removed while eagles are occupying them. No take would occur by performing tree removal during this time frame.

Specific measures to avoid harming the pallid sturgeon, lake sturgeon, and sturgeon chub would be implemented during construction. These measures include controlling erosion from construction activities (in accordance with Iowa DOT's and NDOR's construction manuals, design specifications, Standard Road Plans, and other relevant documents) and using measures to minimize impacts on Missouri River water quality. For example, drainage swales would be vegetated to help trap sediment and reduce runoff from pavement.

3.14 CUMULATIVE IMPACTS

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other

actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Cumulative impacts include the direct and indirect impacts of a project together with impacts from reasonably foreseeable future actions. For a project to be reasonably foreseeable, it must have advanced far enough in the planning process that its implementation is likely. Reasonably foreseeable future actions are not speculative, are likely to occur based on reliable sources, and are typically characterized in planning documents.

The assessment of the cumulative impacts of Federal, state, and private actions is required by Council on Environmental Quality (CEQ) regulations developed for implementing NEPA. Cumulative impacts of the Segment 1 Project were evaluated in accordance with CEQ guidance (CEQ, January 1997; CEQ, June 24, 2005) and other sources, including FHWA's "Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process" (FHWA, January 2003) and FHWA's "Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process" (FHWA, April 1992).

The Tier 1 EIS addressed cumulative impacts of the CBIS Improvements Project (including all five segments) in conjunction with other local projects. The cumulative impacts evaluation focused on the following resources: wetlands, water quality, T&E species, and changes in existing land use. The Tier 1 Draft EIS included a list of reasonably foreseeable future projects, some of which were not in the vicinity of Segment 1 or would not affect the same resources. Because all five segments of the CBIS Improvements Project were evaluated for impacts in the Tier 1 EIS, the discussion of cumulative impacts from the five individual segment projects is only warranted on the areas where the segments overlap and the same area may be affected twice.

The impacts of reasonably foreseeable future actions not associated with the Segment 1 Project include the impacts of other Federal, state, and private actions. For this EA, the methodology for identifying cumulative issues involved identifying resources affected by the proposed Segment 1 Project, considering the types of impacts likely for other reasonably foreseeable future projects, and determining the approximate time frames and locations of impacts. This EA further characterizes relevant projects that have been completed or are ongoing, some of which were identified as proposed projects in the Tier 1 EIS.

3.14.1 Existing Conditions

There are many projects identified in the Tier 1 Draft EIS throughout the CBIS Study Area. Some projects may not occur during the same time frame as the Segment 1 Project, but past and future actions should be considered when addressing cumulative impacts (CEQ, June 24, 2005). Based on a review of the Segment 1 Project and consideration of other projects, the resources recommended for cumulative impact evaluation were: land use, wetlands, water quality, floodplains, and T&E species. The following sections list projects with overlapping or adjacent impact areas with the Segment 1 Project; upstream and downstream projects in the Omaha/Council Bluffs metropolitan area along and within the Missouri River are included because of their potential to affect water quality, floodplains, and T&E species.

Ongoing Projects

Projects that are ongoing include the following:

- Addition of a third lane to eastbound I-80/I-29 between the I-80/I-29 West and East System interchanges – This project, which started in April 2006, is designed to reduce traffic congestion during peak hours.

- Widening of U.S. 275 in Council Bluffs between the U.S. 275 Missouri River bridge (the South Omaha Veterans Memorial Bridge) and I-29 to four lanes – The corridor is approximately 4.5 miles long, and the project started construction in spring 2006 to improve the U.S. 275 route in Iowa.

Reasonably Foreseeable Future Projects

Projects planned to occur in the reasonably foreseeable future include the following:

- Replacement of South Omaha Veterans Memorial Bridge connecting U.S. 275 in Omaha and Council Bluffs – The existing bridge is proposed to be replaced with a new four-lane bridge to improve the U.S. 275 connection between Nebraska and Iowa.
- Bellevue Bridge Study of alternatives for improving the connectivity of U.S. 75 in Nebraska to I-29 in Iowa – The preferred alternative is to construct a new Missouri River bridge approximately 1 mile north of the Missouri and Platte river confluence.
- Widening of U.S. 75 in Nebraska from I-80 to Nebraska Highway 370 to six lanes – The project is being designed to improve north-south traffic flow and connectivity between I-80 and Nebraska Highway 370.
- Missouri River pedestrian bridge connecting Omaha and Council Bluffs – This landmark bridge will connect trails in Nebraska and Iowa and is a cornerstone in the development planned on both sides of the Missouri River.
- Council Bend restoration project by USACE – The location of this project is along the east bank of the Missouri River in Council Bluffs and extends approximately 0.5 mile upstream of the I-480 bridge to the Chicago, Central, and Pacific Railroad bridge. This area is planned for development of a chute, backwaters, wetlands, shallow river habitat, and recreational and educational features such as nature trails.
- Park and trail development in Council Bluffs between I-480 and the Council Bend restoration project – Plans were developed to modify the area in conjunction with the Missouri River pedestrian bridge and a development in Playland Park. Funding for the development of One Renaissance Center did not materialize, and the City of Council Bluffs bought back the land. Activities have started for preparing a development master plan for this area.
- Riverfront Place in Omaha – This development is to be located on more than 6 acres at the foot of the Missouri River pedestrian bridge and is planned for 78 residential units in two towers, 27 town homes, commercial space, and a public plaza.

3.14.2 No-Build Alternative

Under the No-Build Alternative, no transportation improvements would occur in the Segment 1 Study Area and no project-related impacts from disturbance would occur. However, if the interstate improvements are not constructed, additional transportation projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to handle the projected traffic increases. Consequently, future transportation projects could result in impacts on various environmental resources. The future projects noted above are likely to occur even if the Segment 1 Project is not constructed.

3.14.3 Build Alternative

The Segment 1 Project would result in physical impacts within and adjacent to existing interstate ROW. Based on a comparison of the preliminary impact area for the Segment 1 Project and

construction impact areas of the reasonably foreseeable future projects listed in Section 3.14.1, Existing Conditions, disturbance of the same geographic area would occur only where the impact areas for Segments 1 and 2 of the CBIS Improvements Project overlap. The preliminary design for Segment 2 indicates that reconstruction of the I-80/I-29 West System interchange would overlap with the easternmost portion of the Segment 1 preliminary impact area (see Figure 2-2B, which shows the temporary pavement that would be affected during the Segment 2 project). The impacts in this area of the I-80/I-29 West System interchange, including approximately 2 acres of the WHTC, would occur subsequent to the Segment 1 Project. The small area affected by both projects includes only a fraction of an acre of 100-year floodplain and should not result in cumulatively significant impacts.

The project that is the next closest geographically to the Segment 1 Project, the widening of U.S. 75 in Nebraska from I-80 to Nebraska Highway 370, is almost adjacent to the western terminus of the Segment 1 Project at approximately 25th Street along I-80. The Segment 1 Project is planned to be constructed before the portion of the U.S. 75 project near I-80, which would decrease the potential for adverse cumulative impacts on nearby resources.

Although most of the reasonably foreseeable future projects would not occur in the same area as the Segment 1 Project, several would affect the Missouri River. The Council Bend restoration project would involve dredging a historic channel and is expected to start in 2006. The Missouri River pedestrian bridge upstream of the Segment 1 Project and the South Omaha Veterans Memorial Bridge downstream of the Segment 1 Project would involve placing bridge piers in the Missouri River. These projects would result in runoff and sedimentation being introduced into the Missouri River during construction activities; this would be a cumulative impact during overlapping construction periods. All of the bridge projects and the Council Bend restoration project have components within the floodway and 100-year floodplain of the Missouri River. The projects would also affect some wetlands and could ultimately result in some land use changes adjacent to the river.

The aforementioned projects that have components in the Missouri River involve some Federal funding. Consequently, they were studied under NEPA requirements for evaluating potential environmental impacts. As part of the NEPA process, coordination occurred with resource agencies such as USFWS, Iowa DNR, and NGPC. Additionally, Section 7 informal or formal consultation occurs with USFWS regarding the potential effect on T&E species of projects with Federal funding. The Missouri River is a high-visibility resource that undergoes much scrutiny regarding Federal projects within its floodway. Minimization and mitigation measures are planned to be implemented for each project. Each bridge needs approval by USCG and involves permitting processes with USCG and USACE. NPDES construction, floodplain development, and other relevant permits are needed for each project. There would be no significant cumulative floodway and floodplain impacts because the projects would be designed to achieve a no-rise certification.

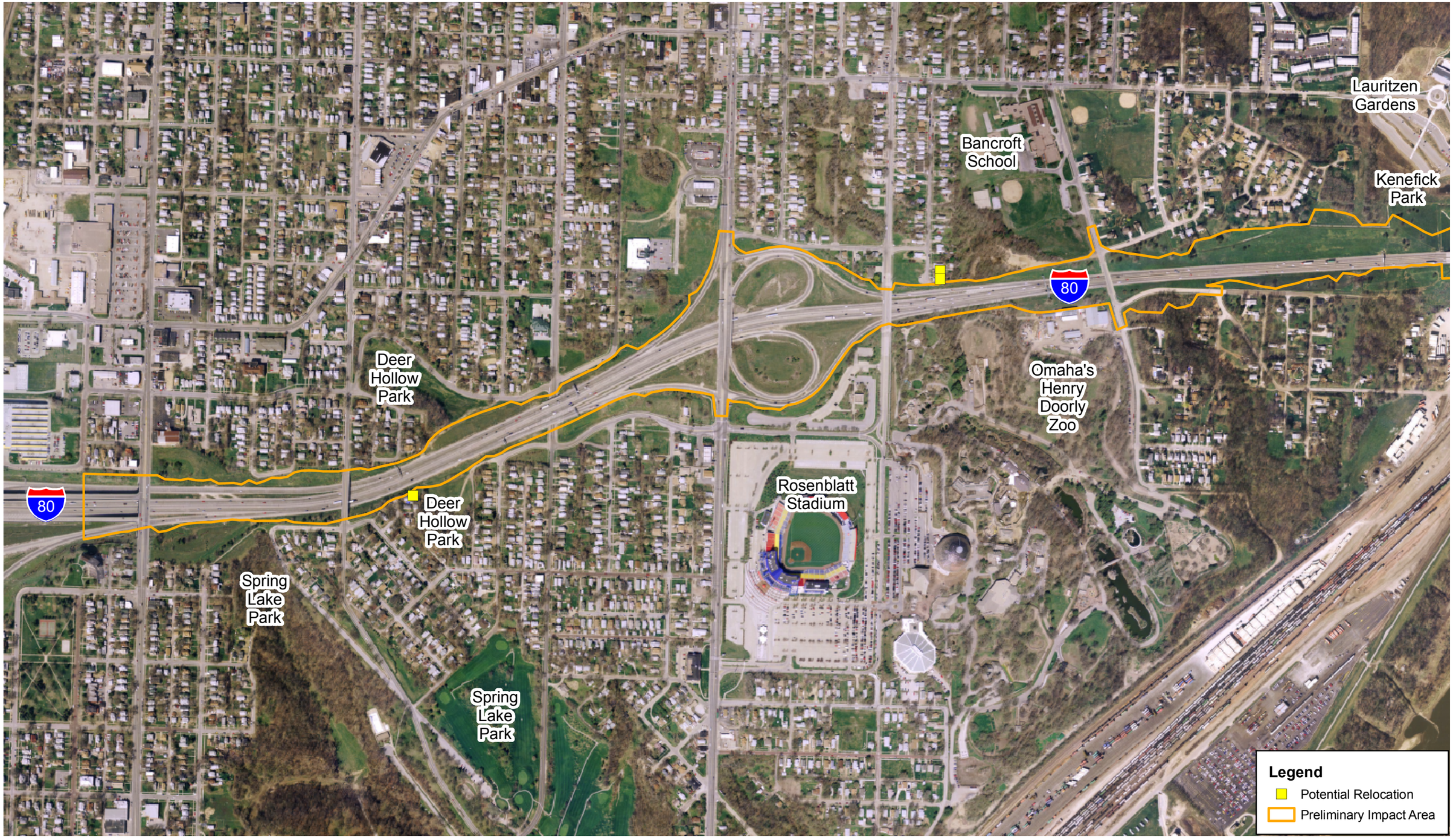
The projects would be constructed in overlapping time frames in different locations. Although some of the projects are along the Omaha and Council Bluffs riverfront area, there are large acreages of riparian habitat along the Missouri River south of the I-80 bridge. Some area projects, such as the Council Bend restoration project, are designed to improve habitat along the Missouri River. Other projects, such as the Bellevue Bridge project, are planned with conservation easements to preserve habitat. Consequently, significant adverse cumulative impacts on the Missouri River and adjacent land are not anticipated to occur because of the timing of the projects and their coordination through resource agencies as well as the minimization and mitigation measures to be implemented for each project. Impacts on resources such as wetlands, water quality, floodplains, and T&E species would not be cumulatively significant. Land uses near the river would continue to change according to local agency plans

for future land use. The Segment 1 Project as well as other Federal, state, and local projects are being coordinated with planners to ensure consistency and would not result in adverse cumulative impacts on land use.

3.14.4 Avoidance, Minimization, and Mitigation

The reasonably foreseeable future projects have been planned to avoid resource impacts when possible and to minimize impacts through reduction of project footprints. Planning will continue with local agencies to ensure that the Segment 1 Project and proposed area developments are consistent to minimize disturbance of the same area.

Although mitigations measures are proposed for individual projects, no mitigation is proposed for any cumulative impacts.



600 300 0 600 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. Potential Relocations - NDOR, 2006

Iowa Department of Transportation

NDOR Nebraska Department of Roads

Potential Relocations
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
May 2006

FIGURE
3-1

Z:\Projects\IDOT\339-134_CB_InterstateSoftware\ArcGIS\ArcView81\MXD\CBIS_Segment1_Potential_Relocations.mxd\may06\jcm

Lauritzen Gardens

Kenefick Park

80

Omaha's Henry Doorly Zoo

MISSOURI RIVER

Western Historic Trails Center

C

Legend

- Preliminary Impact Area
- Levee
- Waters of the U.S.
- Delineated Wetlands
- 100 Year Floodplain

600 300 0 600

Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. Wetlands and Waters of the U.S. - HDR Engineering, August 2005
3. 100 Year Floodplain - Douglas County FIRM - FEMA, Dec 2005 and Pottawattamie County FIRM - FEMA, Feb 2005

Iowa Department of Transportation

NDOR Nebraska Department of Roads

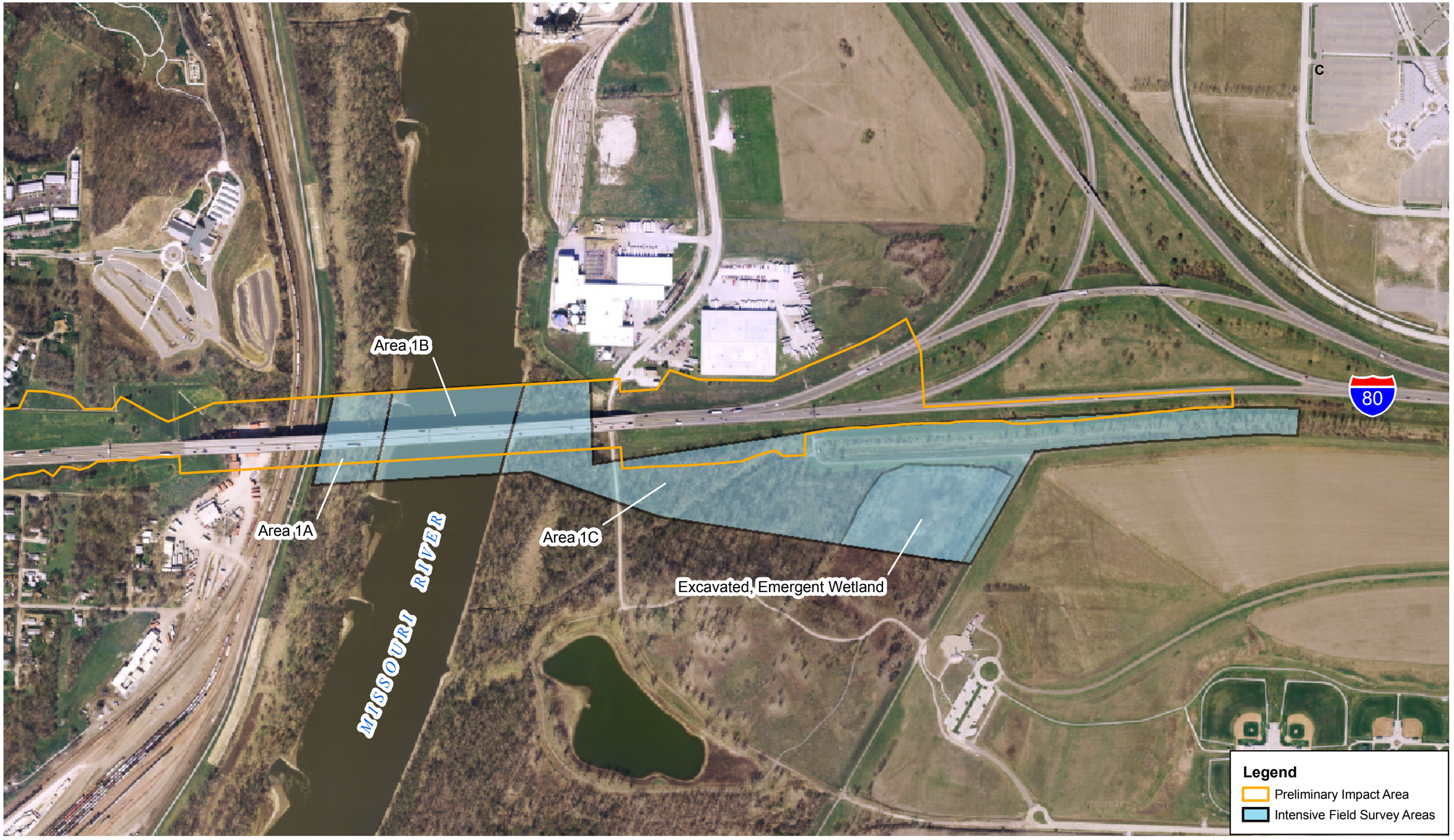
Wetlands, Floodplains, and Surface Water Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
May 2006

FIGURE
3-2

Z:\Projects\IDOT\339-134_CB_InterstateSoftware\ArcGIS\ArcView81\MXD\CBIS_Segment1_Wetlands.mxd\may06\jcm



500 250 0 500 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. T & E Habitat - CH2M HILL, July 2005

Iowa Department of Transportation

NDOR Nebraska Department of Roads

Threatened and Endangered Species Habitat Areas Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
May 2006

FIGURE
3-3

Z:\Projects\IDOT\339-134_CB_Interstate\SoftwareArcGIS\ArcView81\MXD\CBIS_Segment1_Intensive_Field_Survey.mxd\may06\jcm

0.25 0.125 0 0.25 Miles

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. Area of Potential Effect - CBIS Final EIS (2005)
   Area of Potential Impact

Iowa Department of Transportation

NDOR Nebraska Department of Roads

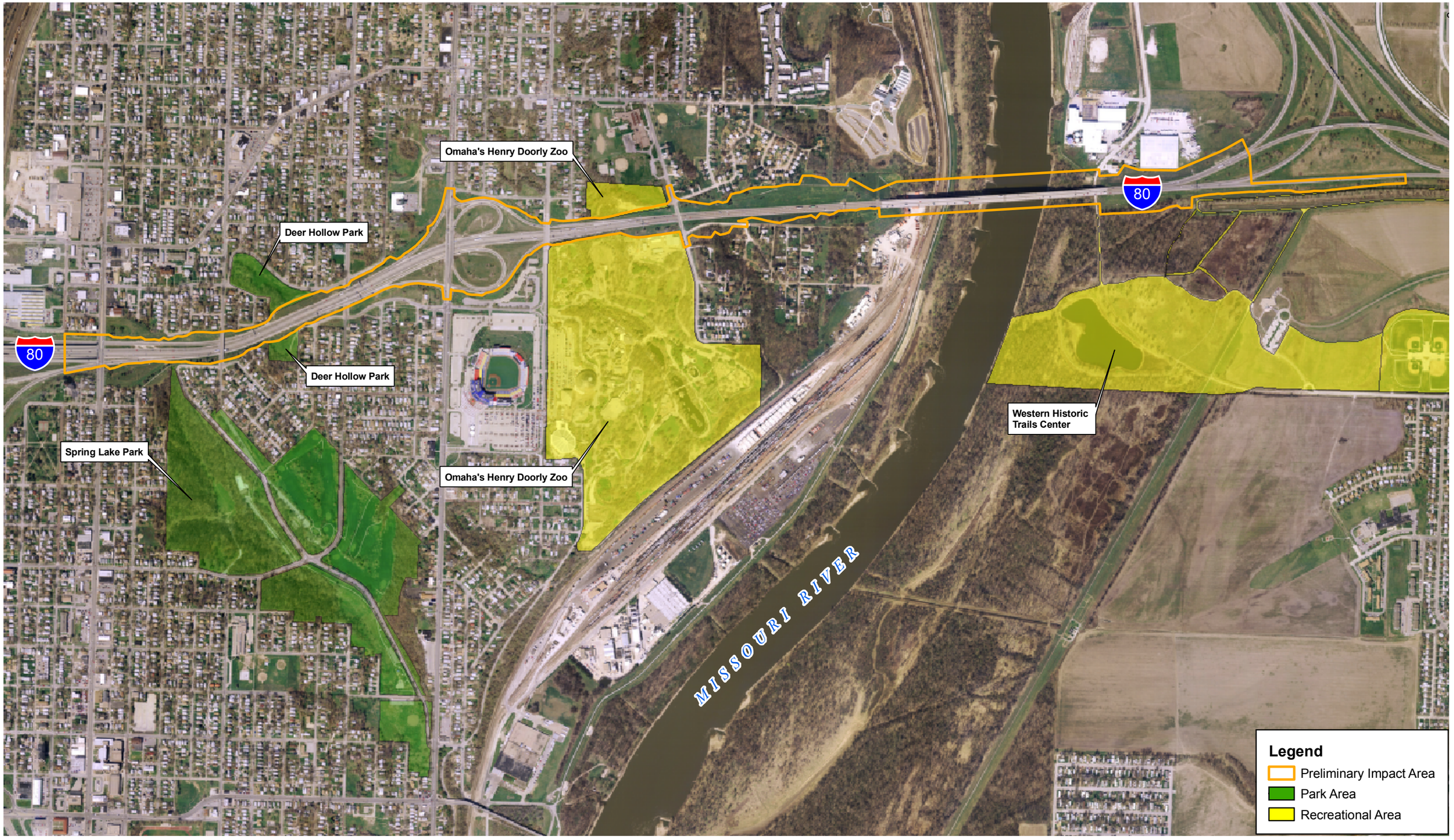
Cultural Resources Area of Potential Effect

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
June 2006

FIGURE
3-4

Z:\Projects\IDOT\339-134_CB_InterstateSoftware\ArcGIS\ArcView81\MXD\CBIS_Segment1_Cultural_Resources.mxd\june06\jcm



1,000 500 0 1,000 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. Section 4(f) Properties - HDR, 2006

Iowa Department of Transportation

NDOR Nebraska Department of Roads

Section 4(f) Properties
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
August 2006

FIGURE
3-5

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Section4f_Properties.mxd\august06\jcm

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Deer_Hollow_Park.mxd\july06\jcm

Sources:
1. Aerial Photography - MAPA, 2004
2. Deer Hollow Park and Maintained Park Boundaries - HDR, 2006

400 200 0 400
Feet
Scale

Iowa Department of Transportation

NDOR Nebraska Department of Roads

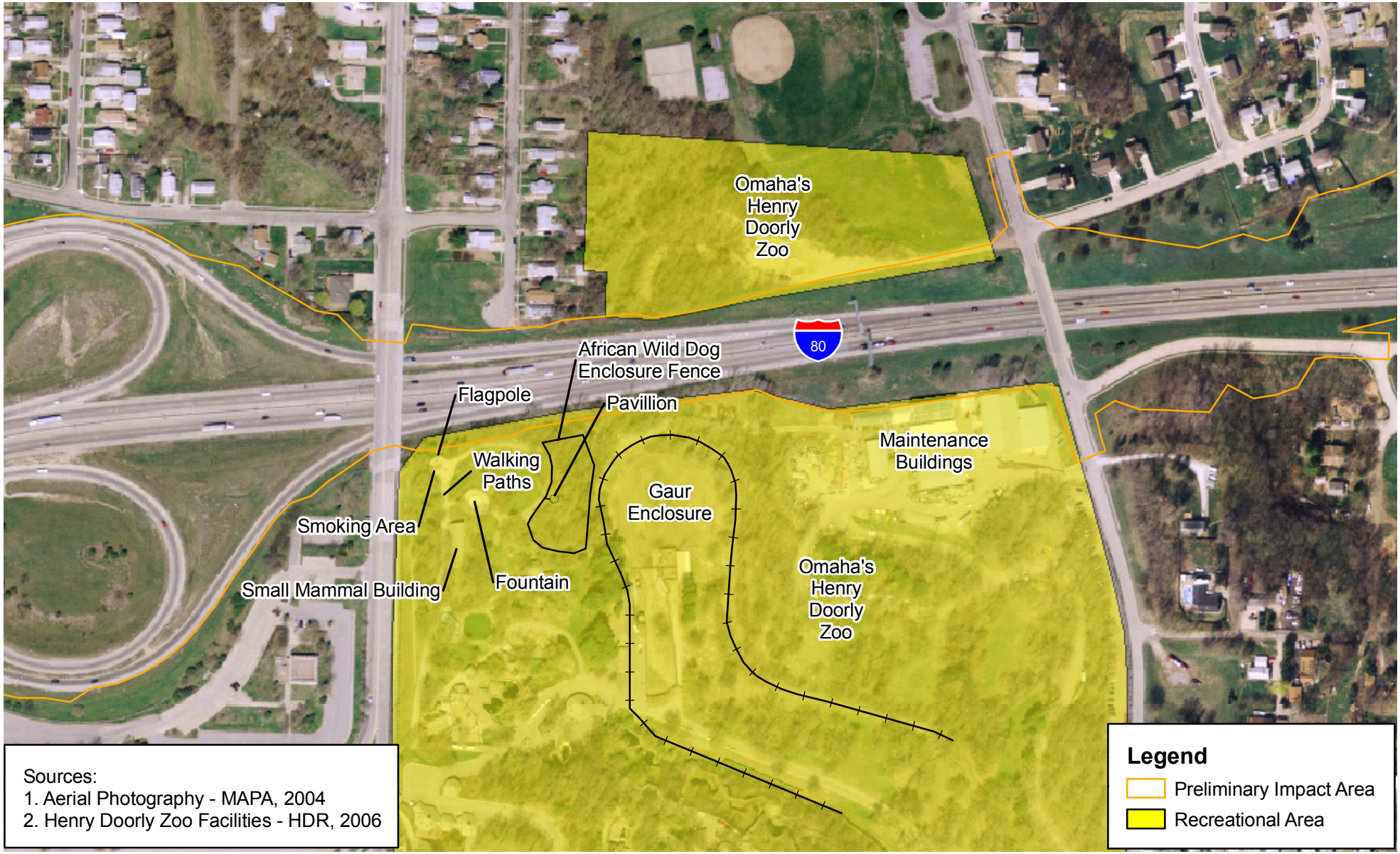
Deer Hollow Park
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
July 2006

FIGURE
3-6

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Henry_Doorly_Zoo.mxd\august06\jcm



300 150 0 300
Feet
Scale

Iowa Department of Transportation

NDOR Nebraska Department of Roads

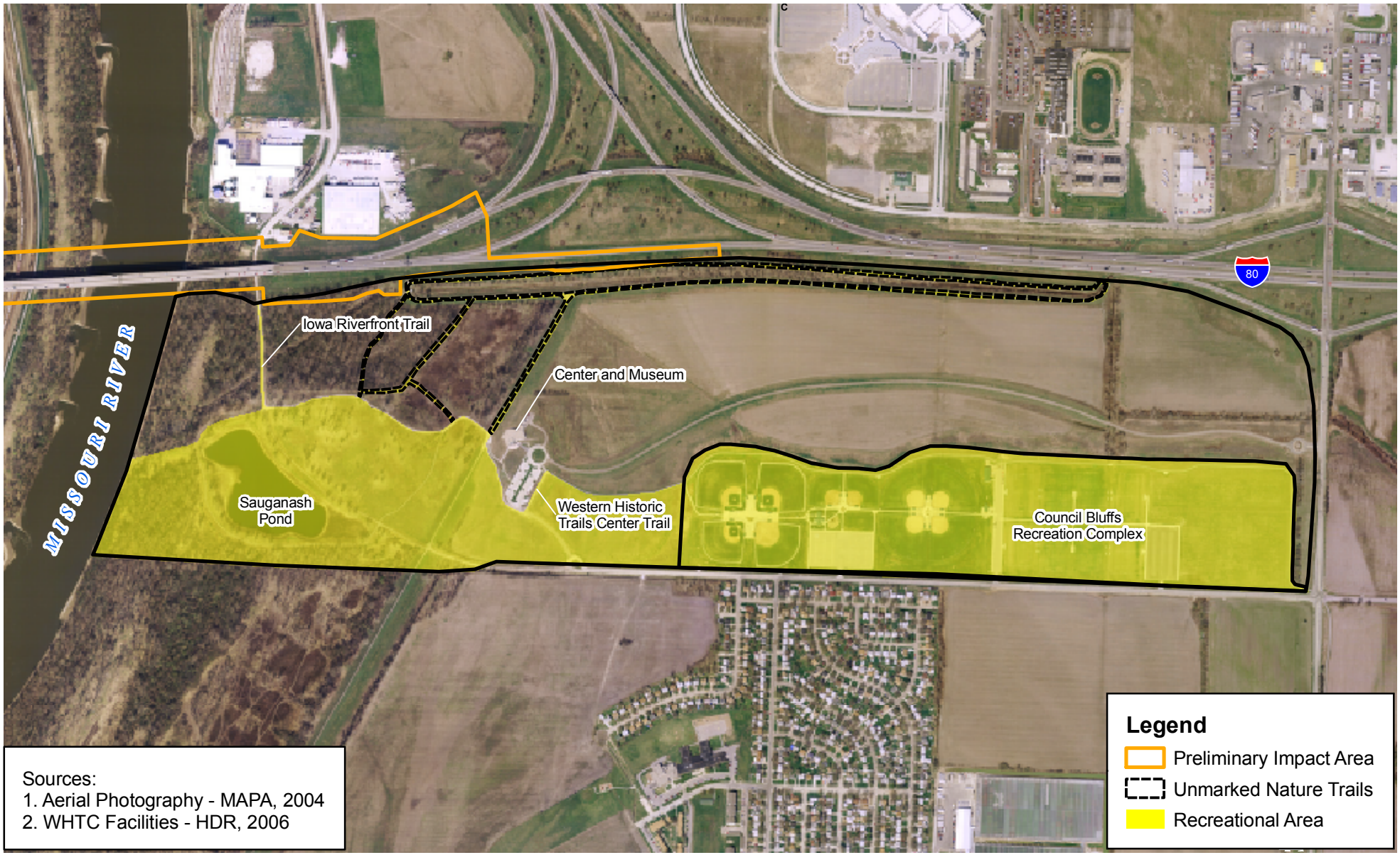
Omaha's Henry Doorly Zoo
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
August 2006

FIGURE
3-7

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Western_Historic_Trails_Center.mxd\july06\jcm



1,000 500 0 1,000 Feet

Scale

Iowa Department of Transportation

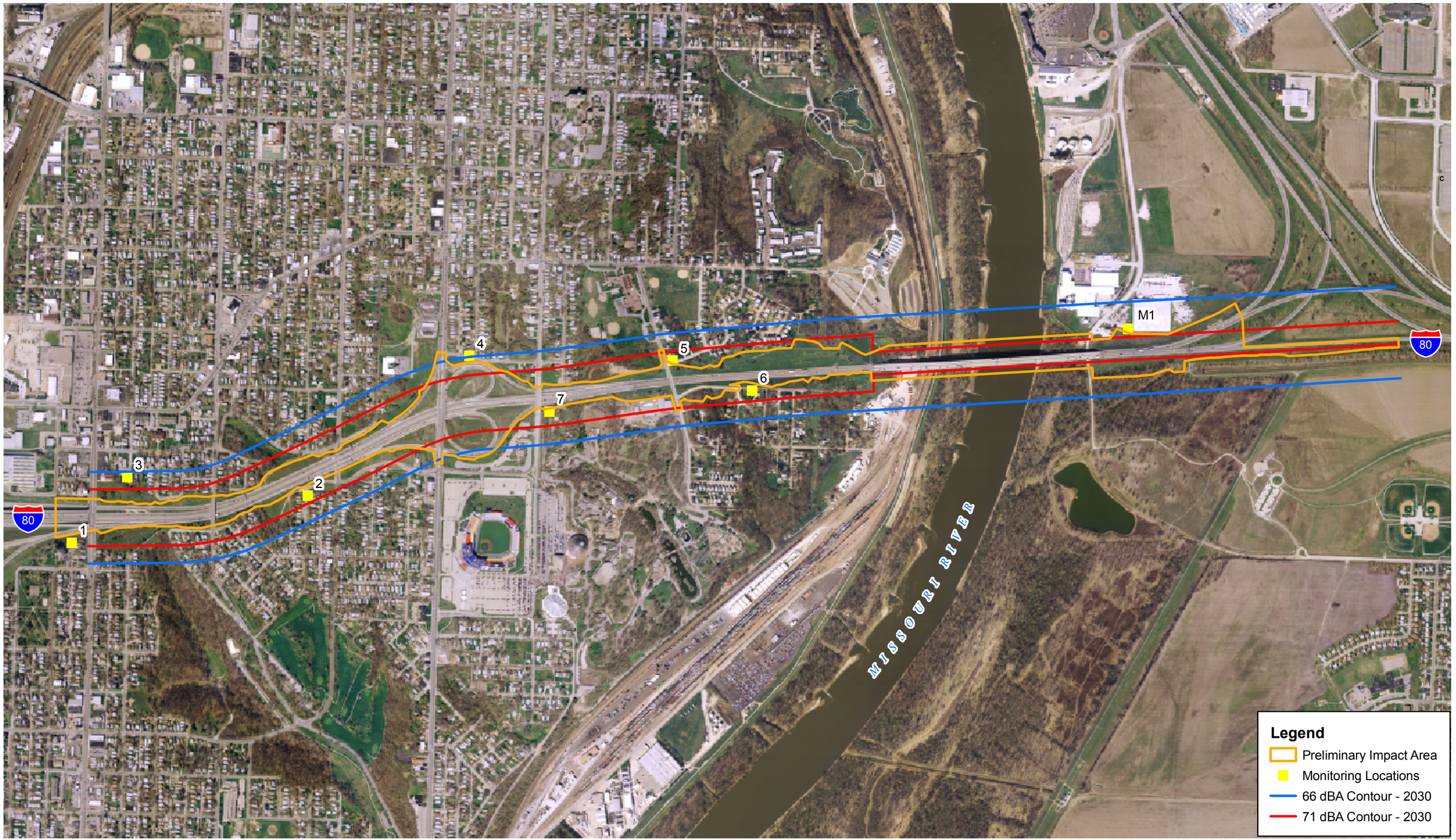
NDOR Nebraska Department of Roads

Western Historic Trails Center
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
July 2006

FIGURE
3-8



1,000 500 0 1,000 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. Noise Contours in Nebraska - URS, 2006
3. Noise Contours in Iowa - HDR, 2006

Note: Modeling of contours along and west of the Missouri River take into account more project specific details (the river as reflective/ project elevations), thus the discrepancy in the 71 dBA contour.

Iowa Department of Transportation

NDOR Nebraska Department of Roads

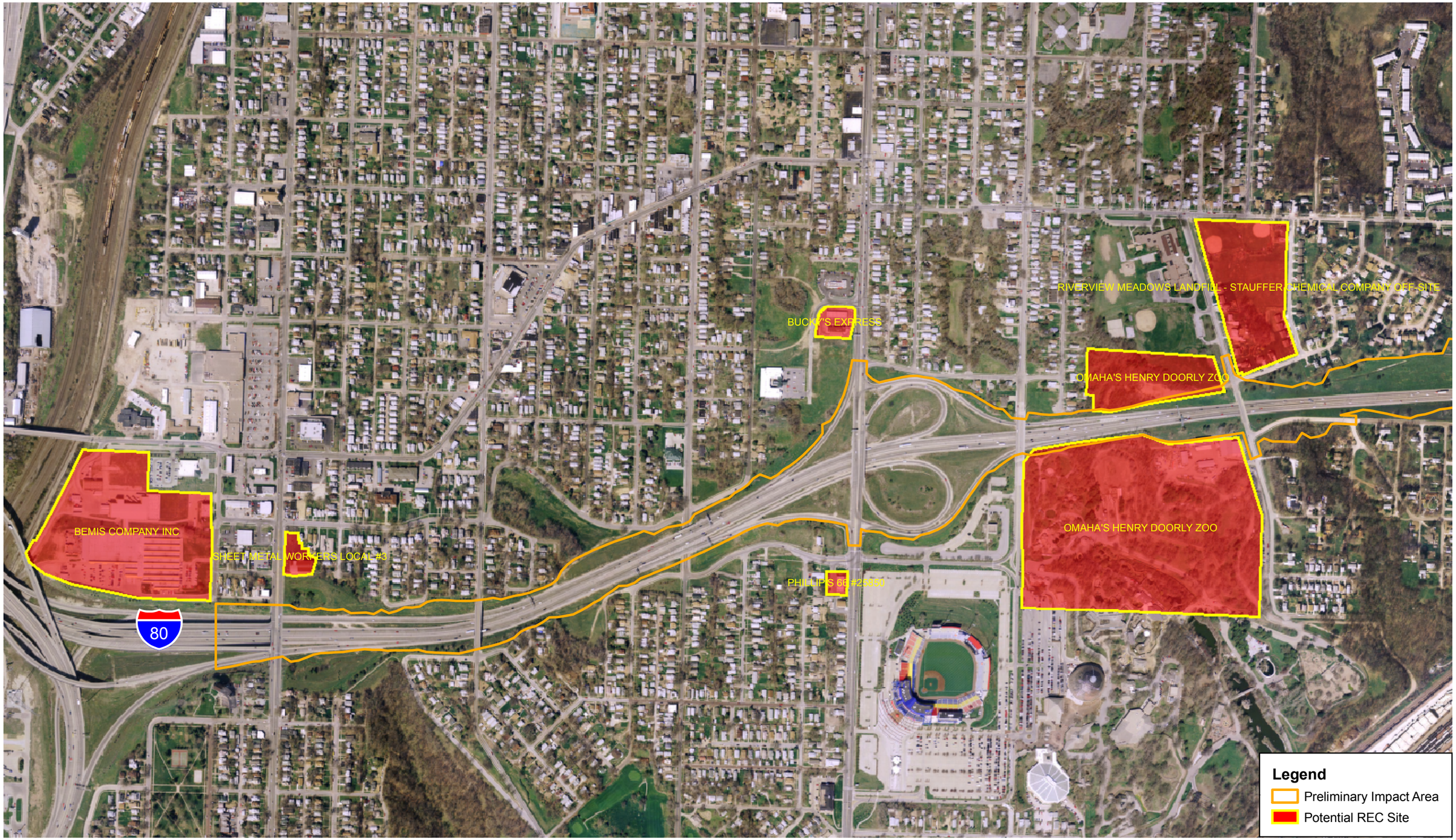
Noise Contours and Monitoring Locations Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
Oct 2006

FIGURE
3-9

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Noise.mxd|July06|jcm



600 300 0 600 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. RECs - HDR, 2006

Iowa Department of Transportation

NDOR Nebraska Department of Roads

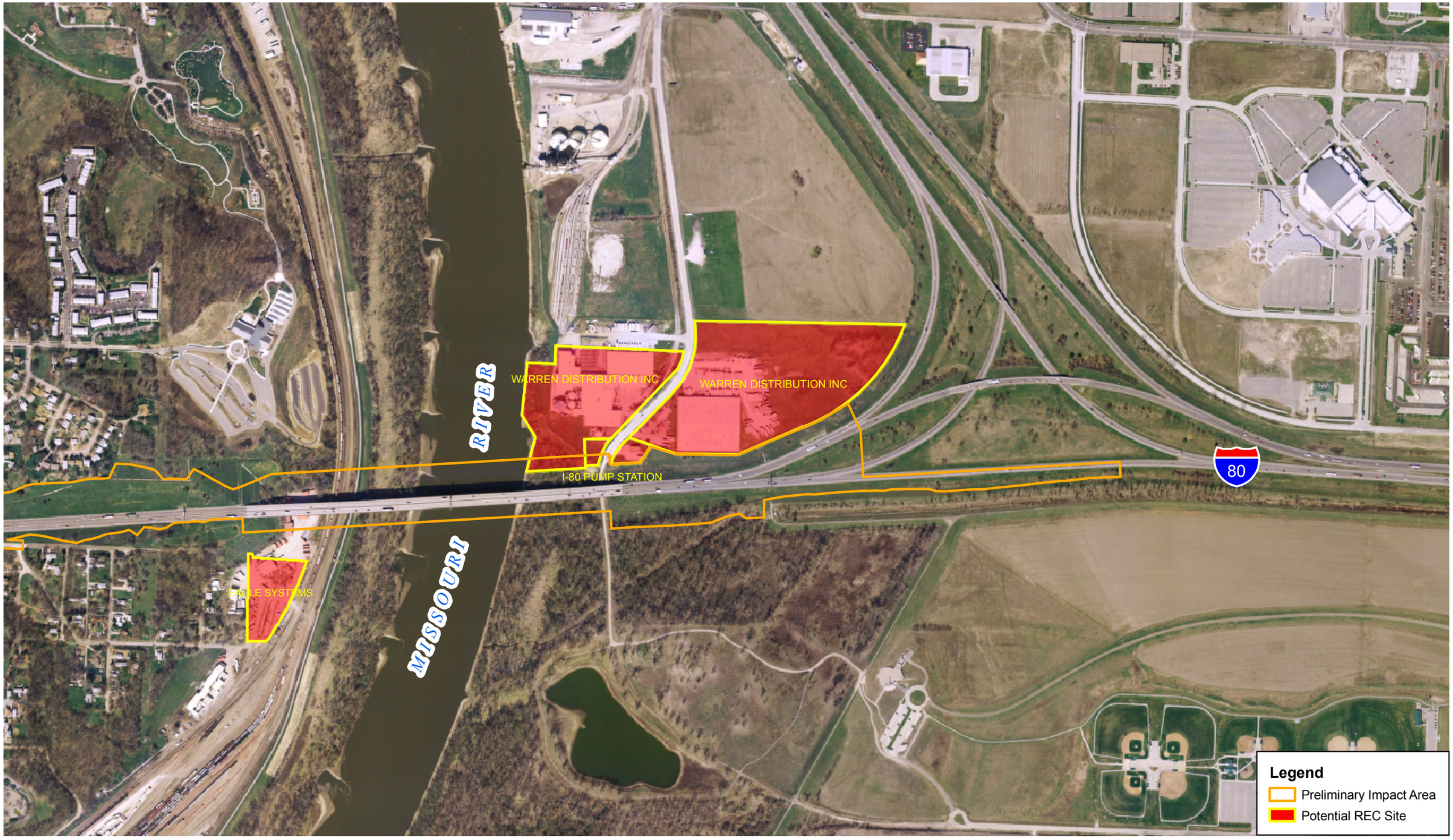
Regulated Materials Sites (Sheet 1 of 2)
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
July 2006

FIGURE
3-10A

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_REC.mxd\july06\jcm



600 300 0 600 Feet

Scale

Sources:
1. Aerial Photography - MAPA, 2004
2. RECs - HDR, 2006

Iowa Department of Transportation

NDOR Nebraska Department of Roads

Regulated Materials Sites (Sheet 2 of 2)
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
July 2006

FIGURE
3-10B

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView811MXD\CBIS_Segment1_REC.mxd\july06jcm

SECTION 4

DISPOSITION

SECTION 4
DISPOSITION

The Tier 2, Segment 1 EA is being distributed to the following agencies and organizations. Individuals receiving the document are not listed for privacy reasons.

4.1 FEDERAL AGENCIES

Federal Aviation Administration
Federal Emergency Management Agency
Federal Railroad Administration
Federal Transit Administration
Offutt Air Force Base
Small Business Administration
U.S. Army Corps of Engineers – Omaha and Rock Island Districts
U.S. Coast Guard
U.S. Department of Agriculture Natural Resources Conservation Service
U.S. Department of Health and Human Services, Centers for Disease Control and Prevention
U.S. Department of Housing and Urban Development
U.S. Department of the Interior, National Park Service
U.S. Department of the Interior, Office of Environmental Policy and Compliance
U.S. Environmental Protection Agency – Region 7
U.S. Fish and Wildlife Service – Nebraska and Rock Island Field Offices

4.2 STATE AGENCIES

Iowa Department of Natural Resources, Conservation and Recreation
Iowa Department of Natural Resources, Environmental Services
Nebraska Commission on Indian Affairs
Nebraska Department of Aeronautics
Nebraska Department of Environmental Quality
Nebraska Department of Health and Human Services System/Division of Environmental Health Services
Nebraska Department of Natural Resources
Nebraska Game and Parks Commission
Nebraska State Historical Society
State Historical Society of Iowa, Department of Cultural Affairs

4.3 LOCAL/REGIONAL UNITS OF GOVERNMENT

City of Council Bluffs, Iowa (Mayor, Council, and Engineer)
City of Omaha, Nebraska (Mayor, Council, and Engineer)
Council Bluffs Parks, Recreation, and Public Property Department
Douglas County Board of Commissioners
Omaha Parks, Recreation, and Public Property Department
Papio-Missouri River Natural Resources District
Pottawattamie County Conservation Board

4.4 OTHER

Burlington Northern Santa Fe Railway
Iowa Tribe of Oklahoma
Metro Area Transit
Metropolitan Area Planning Agency
Metropolitan Utilities District
Nebraska Trucking Association
Omaha Tribe
Omaha's Henry Doorly Zoo
Otoe-Missouria Tribe
Pawnee Tribe of Oklahoma
Ponca Tribe of Nebraska
Sac and Fox Tribe of Mississippi
Urban League of Nebraska
Winnebago Tribe

4.5 LOCATIONS WHERE THIS DOCUMENT IS AVAILABLE FOR PUBLIC REVIEW

Council Bluffs Public Library
400 Willow Avenue
Council Bluffs, IA 51503

Omaha Public Library
215 South 15th Street
Omaha, NE 68102

Federal Highway Administration
105 6th Street
Ames, IA 50010

Federal Highway Administration
100 Centennial Mall North
Lincoln, NE 68508

Iowa Department of Transportation
300 West Broadway
Council Bluffs, IA 51503

Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

Nebraska Department of Roads
1500 Highway 2
Lincoln, NE 68509

SECTION 5

COMMENTS AND COORDINATION

SECTION 5
COMMENTS AND COORDINATION

This section includes a summary of agency coordination, public involvement, and tribal coordination that has taken place during development of this EA. Appendix B contains agency coordination letters received throughout the development of this EA.

5.1 AGENCY COORDINATION

5.1.1 Agency Early Coordination

An early coordination packet was mailed to Federal, state, and local resource agencies on March 13, 2006. The entities contacted as part of the early coordination efforts are as follows:

- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Railroad Administration
- Federal Transit Administration
- Small Business Administration
- U.S. Army Corps of Engineers – Omaha and Rock Island Districts
- U.S. Coast Guard
- U.S. Department of Agriculture Natural Resources Conservation Service
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior, National Park Service
- U.S. Department of the Interior, Office of Environmental Policy and Compliance
- U.S. Environmental Protection Agency – Region 7
- U.S. Fish and Wildlife Service – Nebraska and Rock Island Field Offices
- Iowa Department of Natural Resources
- Nebraska Department of Environmental Quality
- Nebraska Department of Natural Resources
- Nebraska Game and Parks Commission
- Nebraska State Historical Society
- State Historical Society of Iowa
- Papio-Missouri River Natural Resources District
- Pottawattamie County Conservation Board
- Metropolitan Area Planning Agency
- Metro Area Transit

Resource agency responses to early coordination inquiries are summarized in Table 5-1. Written responses to the early coordination request are provided in Appendix B.

Table 5-1
Summary of Agency Comments

Agency/Industry	Comment
U.S. Department of Housing and Urban Development	They do not contemplate any detrimental effect on any of their projects.
U.S. Department of Agriculture – Nebraska State Conservationist	No comments.
Nebraska Department of Environmental Quality	Four permits through NDEQ may be required of the project. They are Air Quality Construction Permit, Open Burning Permit, Integrated Solid Waste Management Permit, and Construction/Industrial Storm Water Permit. Dust emission must be controlled throughout the project. Open burning for the disposal of trees, brush, vegetation, and untreated lumber would need approval by NDEQ. Building demolition would be subject to Nebraska Air Quality Regulations regarding open burning and asbestos. The Nebraska Department of Health and Human Services also has asbestos requirements. Building debris and waste materials must be deposited at a licensed solid waste management facility.
Nebraska Department of Natural Resources	They have no comments concerning groundwater or surface water. The new Missouri River bridge will impact the floodplain/floodway of the Missouri River. If bridge supports are built in the floodway, a no-rise certification will be required to be completed and filed with the local authority. Any bridge supports in the floodplain (fringe) area will require a floodplain development permit at the local level.

5.1.2 NEPA/404 Merge Coordination

FHWA, Iowa DOT, and NDOR coordinated with resource agencies using the Iowa DOT concurrence point process during both Tier 1 and Tier 2 of the CBIS Improvements Project. The process incorporates planning, design, agency coordination, and public involvement elements, and it integrates compliance with NEPA and Section 404 of the Clean Water Act. The transportation agencies request agency concurrence regarding four points: Purpose and Need, Alternatives to be Analyzed, Alternatives to be Carried Forward, and the Preferred Alternative. The intent of this concurrence point process is to encourage early participation by the regulatory agencies in an effort to validate decisions made by the transportation agency during the NEPA process and to avoid revisiting those decisions after significant effort has been expended performing detailed analyses and design.

The transportation and resource agencies agreed that Tier 1 would include Concurrence Points 1, 2, 3, and 4 and that Tier 2 would include Concurrence Points 2, 3, and 4 for each segment. The agencies agreed that Concurrence Point 1 was not necessary for Tier 2 because the purpose of and need for the CBIS Improvements Project was established and concurred upon in Tier 1. The range of alternatives evaluated and selected for detailed analysis was also concurred upon. Finally, the Construction Alternative was concurred upon as the preferred alternative.

Concurrence Points 2 and 3, Tier 2

Concurrence Points 2 and 3 were addressed at one meeting held on April 26, 2006. At this meeting, all participants (USACE – Omaha District, USACE – Rock Island District, Iowa DNR, and NGPC) concurred on Concurrence Point 2, Alternatives to be Analyzed, and Concurrence Point 3, Alternatives to be Carried Forward. EPA and USFWS – Rock Island Field Office were not able to participate in the meeting but concurred on both points. General comments from this meeting are summarized as follows:

- Agencies appreciated that ROW acquisition was being minimized with the improvements focused along the existing interstate and not in new corridors.
- Although certain resources could not be avoided due to expansion within or adjacent to the existing interstate, the agencies requested that impacts on wetlands and other resources be minimized as the design process continues.
- The agencies agreed to postpone the decision on whether Concurrence Point 4 would be conducted via mailed packages and a meeting or only via mailed packages.

USACE and NGPC provided specific comments. These comments have been addressed in this document and are briefly discussed in Table 5-2.

Table 5-2
Summary of Agency Comments at Concurrence Points 2 and 3 Meeting

Agency	Comment	Resolution
U.S. Army Corps of Engineers	The agency requested that the project avoid wetland areas as feasible, then minimize unavoidable impacts, and then address specific mitigation in the Section 404 permitting process.	The EA addresses avoidance, minimization, and mitigation. Specific mitigation will be addressed in the Section 404 Permit.
	Floodplain development permits will be needed, and 100-year levees modified by the Build Alternative would need to be reconstructed to maintain the former level of flood protection.	Coordination will occur with the local floodplain agency to permit construction within a floodplain. Coordination with USACE will be conducted concerning the design of the roadway serving as a levee.
Nebraska Game and Parks Commission	There have been no additional species listed that are concerns since the Tier 1 EIS was completed.	Comment noted.
	The agency desires copies of the EA and BE for review.	Copies of the EA and BE will be provided for review.

5.2 PUBLIC INVOLVEMENT

An extensive public involvement program was used during Tier 1 and at the start of Tier 2 to effectively engage the general public and interested parties. The key components of this program are outlined in the following sections.

5.2.1 Public Meetings

Two public information meetings were held during the NEPA process for Tier 1, which included the Segment 1 Study Area. The meetings were conducted in an open house format on January 23, 2003, and August 7, 2003. Public comments were considered in preparing the Tier 1 Draft EIS. The public also participated in the review of the Draft EIS through the public comment process and the public hearing conducted on February 8, 2005. The public supported the Construction Alternative proposed by the transportation agencies and recognized that the CBIS Improvements Project would resolve many existing issues with the interstate system, including roadway condition, traffic congestion, and crashes.

An additional public meeting was held on October 11, 2005, to present preliminary design concepts under consideration for Segments 1 through 5. The concepts presented were refinements of concepts considered during Tier 1 to determine the area of potential impact and were the same as the range of alternatives discussed in Section 2.1, Range of Alternatives for Segment 1, of this EA. The public had the opportunity to observe and comment on the proposed roadway improvements.

General comments from this meeting, including specific comments on Segment 1, are summarized as follows (with answers in this NEPA process provided in italics):

- The public asked whether there is a "legal way" for a pedestrian or bicyclist to cross the Missouri River in the Omaha/Council Bluffs metropolitan area. *Pedestrians and bicyclists are not prohibited from traveling on the South Omaha Veterans Memorial Bridge connecting U.S. 275 in Omaha and Council Bluffs. When completed, the Missouri River Pedestrian Bridge and the replacement South Omaha Veterans Memorial Bridge will facilitate pedestrian and bicyclist traffic across the Missouri River.*
- All elevated road structures should have aesthetic treatments, and landscaping should be included along the ROW to be more visually impressive. *Some landscaping is planned along Segment 1 and a study on aesthetic improvements associated with the CBIS Improvements Project is being conducted. The aesthetics study will identify landscaping and other treatments to incorporate and provide impressive views of the improvements and from the upgraded roadways and bridges.*
- There is concern about increased noise levels as capacity expands and moves closer to residential areas. Noise abatement measures (that is, noise walls) are recommended to be installed where appropriate. *The need for noise walls was studied in 11 locations, but none were determined to be reasonable and feasible for mitigation. See Section 3.9.4 and Appendix D for further information.*
- There is concern for potential impacts on the foundations of properties close to the interstate. *Iowa DOT and NDOR recognize the close proximity of the interstate system to properties and plan to install retaining walls in many locations to minimize ROW acquisition and maximize the distance from the interstate to foundations.*
- Protective barriers, such as guardrails, should be placed to ensure that interstate traffic "stays on the interstate" and does not impact residential or other property outside the

ROW. *Barriers separating eastbound and westbound traffic will be maintained to minimize the potential for cross-over accidents. Guardrails near the outside shoulders of the interstate will be used where appropriate to decrease the potential for vehicles leaving the interstate and damaging property.*

- Proper signage will be important to provide sufficient information for interstate users to make driving decisions in a timely manner. *Signage is an important component of the CBIS Improvements Project, especially in the area of the dual-divided section of Segments 2 and 3. Signs will be developed for Segment 1 that assist motorists in making timely decisions.*
- There is concern with moving Spring Street south in Segment 1. *NDOR studied the Spring Street and Riverview Boulevard intersection immediately south of I-80 and proposed a new alignment that avoids any residential relocations and will improve the turning radius of vehicles (see Figure 2-2B).*
- There is concern about the replacement of the Riverview Boulevard Bridge in Segment 1, and the public asked if the bridge could be replaced in its existing location with a staged approach. *NDOR evaluated multiple options for replacement of the Riverview Boulevard Bridge and determined the best option to replace the bridge with a staged approach essentially in its current location. See Section 2.1 for more information on the options considered.*

5.2.2 Correspondence

Throughout the course of the CBIS Improvements Project, correspondence was received from the public through a variety of means, including the public information meetings, telephone calls, letters, and email. All public correspondence was logged, and a response was sent to the specific public entity or individual if one was requested.

5.2.3 Project Newsletters

A series of newsletters addressing the CBIS Improvements Project during Tier 1, which included information on Segment 1, were published and distributed to all interested parties on the Project mailing list. Newsletter #1 was sent in January 2003 before the first Tier 1 public meeting, Newsletter #2 was sent in July 2003 before the second Tier 1 public meeting, and Newsletter #3 was sent in January 2005 in advance of the public hearing on the Tier 1 Draft EIS. Newsletter #4 was sent in September 2005 prior to the public meeting announcing Tier 2, which was held on October 11, 2005. The Project mailing list includes more than 2,000 businesses, city and county officials, public entities, and residents.

5.2.4 Project Website

A website (http://www.cbinterstate.com) has been developed for the public to access relevant information about the CBIS Improvements Project, including information on the Segment 1 Project. The website provides information on the overall project, the public involvement process, environmental studies and documents to support the Project, the design and property acquisition processes, and Iowa DOT and NDOR contact information.

5.2.5 Future Public Involvement

A public hearing on this EA for the Segment 1 Project is anticipated in the fall of 2006.

5.3 TRIBAL COORDINATION

Under the guidance of Section 106 of the National Historic Preservation Act of 1966 (16 USC 470f), states are required to coordinate with Indian tribes if a project could potentially impact lands with cultural or religious significance. Each state has its own process of tribal notification. Iowa employs a four-step process, beginning with early coordination. As part of the Iowa DOT early coordination process for Tier 1 and with input from NDOR, project information was sent in January 2003 to tribal contacts of the Iowa, Omaha, Otoe-Missouria, Sac and Fox, and Winnebago tribes with potential interest in the project area. Table 5-3 summarizes the responses received as part of the Tier 1 process.

Table 5-3
Tribal Notification During Tier 1

Tribe	Response Summary	Date of Response
Iowa Tribe of Kansas-Nebraska	No Response.	
Iowa Tribe of Oklahoma	Would like to review any archaeological studies.	January 27, 2003
Omaha Tribe	No immediate concerns of discovering evidence of the Omaha Tribe's occupation. Contact if evidence is discovered.	January 30, 2003
Otoe-Missouria Tribe	Would like to review any archaeological studies.	May 13, 2003
Sac and Fox Tribe of Mississippi	Contact if human remains or objects are discovered.	February 6, 2003
Sac and Fox Tribe of Missouri	No Response.	
Sac and Fox Tribe of Oklahoma	No Response.	
Winnebago Tribe	The tribe did not inhabit the area.	January 24, 2003

During Tier 2, copies of this Segment 1 EA were sent to tribes involved in the Iowa DOT early coordination process from which responses were received during Tier 1 as well as tribes with which NDOR coordinated.

SECTION 6

CONCLUSION AND RECOMMENDATION

SECTION 6
CONCLUSION AND RECOMMENDATION

This EA documents the absence of significant impacts associated with the implementation of the Build Alternative, introduced in Section 2.1, Range of Alternatives for Segment 1, and evaluated for impacts in Section 3, Affected Environment and Environmental Consequences. The potential impacts of the Build Alternative are shown in Table 6-1. The impacts are presented based on a comparison with existing conditions. Under the No-Build Alternative, no transportation improvements would occur in the Segment 1 Study Area, and no project-related impacts in terms of disturbances would occur. However, congestion would continue to increase and out-of-distance travel would increase because of drivers choosing alternate routes to avoid highly congested portions of the interstate. If the interstate improvements are not constructed, however, additional projects may be needed elsewhere in the Omaha/Council Bluffs metropolitan area to accommodate the projected traffic increases on local roads and major arterials. Consequently, future projects could still result in some undetermined level of impacts on resources within and near the Segment 1 Study Area.

There were no findings of a significant nature identified in this EA. Unless impacts of a significant nature are introduced during agency review or at the public hearing on this EA, then a FONSI would be the proper decision document for the Segment 1 Project. This determination is based on the appropriate implementation of applicable Federal, state, and local requirements for erosion, water quality, waters of the U.S., floodplains, Section 4(f) properties, and regulated materials sites. The FONSI would note specific activities to avoid, minimize, or mitigate impacts and would address any comments on the Signature EA.

Table 6-1
Summary of Potential Environmental Impacts

Resource	Potential Impact [1]	
	Nebraska	Iowa
New ROW [2]		
ROW acquisition (acres)	4.31	3.66
Displacements (residences, apartment complexes, businesses)	3, 0, 0	0, 0, 0
Noise receivers [3]	119	0
Wetlands (acres) [4]	1.6	0
Waterways (feet)	0	0
Floodplain		
Acres of fill	0	5.05
Feet of rise	0	0
Threatened or endangered species – potential habitat (acres) [5]	2.83	6.44
Architectural/historic resources (sites) eligible for listing on the NRHP [6]	0	0
Archaeological resources (sites) eligible for listing on the NRHP	0	0
Potential Section 4(f) resources (sites)		
Parks, recreation areas, trails	1, 1, 0	0, 0, 0
Wildlife and waterfowl refuges	0	0
Historic sites	0	0
Regulated materials (sites)	2	1

Notes:

1 *The impacts were calculated based primarily on the preliminary impact area and data from field studies conducted in the summer and fall of 2005.*

2 *New ROW requirements were estimated by comparing the preliminary impact area with parcel data showing the existing ROW. NDOR determined potential residential displacements.*

3 *All impacts are to residential receivers. A residential impact is when noise levels approach (within 1 dBA, or 66 dBA) or exceed the Noise Abatement Criteria of 67 dBA. Under the No-Build Alternative, 113 receivers would be impacted.*

4 *Wetland acreage impacts are based on a comparison of the wetland determination boundary to the preliminary impact area. Jurisdiction will be determined by the U.S. Army Corps of Engineers.*

5 *Potential habitat includes only riparian acreage for western prairie fringed orchid, eastern massasauga rattlesnake, bald eagle, and Indiana bat.*

6 *NRHP is the National Register of Historic Places.*

Sources:

CH2M HILL. January 2006. Threatened and Endangered Species Survey Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

Douglas County Assessor website (for property parcel data). Accessed 2005. www.dcassessor.org/valsearch.html.

FEMA. February 4, 2005a. Flood Insurance Rate Map, Pottawattamie County, Iowa, and Incorporated Areas.

FEMA. December 2, 2005. Flood Insurance Rate Map, Douglas County, Nebraska, and Incorporated Areas.

HDR. December 2005. Section 6(f) Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. February 2006a. Section 4(f) Technical Memorandum, Section 4(f) Decision Process Step 1. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. February 2006b. Wetland Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. March 2006. Regulated Materials Technical Memorandum, Phase I Environmental Site Assessment. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

HDR. April 2006. Noise Study Technical Memorandum (For the portion of Segment 1 located in Iowa).

HDR. August 2006c. Section 4(f) Technical Memorandum, Section 4(f) Decision Process Steps 2-5. Segment 1 of the Council Bluffs Interstate System Improvements Project.

Nash, Jan. April 2006. Segment 1: Historical/Architectural Intensive-Level Survey & Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project.

Pottawattamie County Assessor website (for property parcel data). Accessed 2005. www.pottco.org.

Rogers, Leah. December 2005. Segment 1 Archaeological Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project.

URS. October 2006. Interstate-80: 24th Street Bridge to Missouri River Bridge. Noise Study Report.

USFWS. National Wetlands Inventory. www.fws.gov/nwi.

SECTION 7

REFERENCES

SECTION 7
REFERENCES

23 CFR 771.111(f). Early Coordination, Public Involvement, and Project Development.

23 CFR 771.135. Section 4(f) (49 USC 303).

33 CFR 328. Definition of Waters of the United States.

40 CFR 1502.21. Incorporation by Reference.

40 CFR 1508.7. Cumulative Impact.

40 CFR 1508.8. Effects.

40 CFR 1508.28. Tiering.

42 FR 26951. May 24, 1977. Executive Order 11988, Floodplain Management.

42 FR 26961. May 24, 1977. Executive Order 11990, Protection of Wetlands.

67 FR 2020-2095. January 15, 2002. Issuance of Nationwide Permits; Notices.

71 FR 42611. July 27, 2006. Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites. Notice of Proposed Rulemaking (NPRM); Request for Comments.

567 IAC Chapter 61, Water Quality Standards.

16 USC 460l-4 through 460l-11. Land and Water Conservation Fund Act of 1965, as amended.

16 USC 470f. Section 106 of the National Historic Preservation Act of 1966, as amended.

16 USC 1531 et seq. Endangered Species Act of 1973, as amended.

23 USC 138. Preservation of Parklands.

33 USC 1251 et seq. Water Pollution Prevention and Control.

33 USC 1315. State Reports on Water Quality.

42 USC 4321-4347. National Environmental Policy Act of 1969, as amended.

42 USC 4601 et seq. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

49 USC 303. Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites.

Bozell, Rob. February 24, 2003. Highway Archeology Program Project Survey Summary: NH-80-9(878). 16th Street-Missouri River. Nebraska State Historical Society, Lincoln, Nebraska.

Bozell, Rob. July 23, 2003. Highway Archeology Program Project Survey Summary: NH-80-9(878). 24th Street-Missouri River. Nebraska State Historical Society, Lincoln, Nebraska.

Bozell, Rob. September 1, 2004. Nebraska State Historical Society, Archeology Division. Memo regarding NH-80-9(889), 24th Street-Missouri River.

CEQ. January 1997. Considering Cumulative Effects Under the National Environmental Policy Act. http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm. Retrieved 30 December 2003.

CEQ. June 24, 2005. Guidance on the Consideration of Pact Actions in Cumulative Effects Analysis. http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm. Retrieved August 24, 2005.

CH2M HILL. January 2006. Threatened and Endangered Species Survey Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

Cowardin, Lewis M., Virginia Carter, and Edward T. LaRoe. December 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* FWS/OBS-79/31. U.S. Department of the Interior, Washington D.C.

Douglas County Assessor website(for property parcel data). Accessed 2005. www.dcassessor.org/valsearch.html.

Dupuis, T.V., et al. 1985. *Effects of Highway Runoff on Receiving Waters, Volume IV: Procedural Guidelines for Environmental Assessments*. Prepared for FHWA.

Environmental Laboratory. January 1987. *Corps of Engineers Wetlands Delineation Manual.* Technical Report Y-87-1. U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.

FEMA. February 4, 2005a. Flood Insurance Rate Map, Pottawattamie County, Iowa, and Incorporated Areas. Map Number 19155C0560E.

FEMA. February 4, 2005b. Flood Insurance Study, Pottawattamie County, Iowa, and Incorporated Areas.

FEMA. December 2, 2005. Flood Insurance Rate Map, Douglas County, Nebraska, and Incorporated Areas. Map Number 31055C0360H.

FHWA. October 30, 1987. Technical Advisory T 6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents.

FHWA. April 1992. Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process.

FHWA. January 2003. Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process.

FHWA. March 1, 2005. FHWA Section 4(f) Policy Paper. Office of Planning, Environment and Realty. Project Development and Environmental Review.

FHWA. September 28, 2006. Personal communication.

FHWA, NDOR, and NDEQ. November 2004. Memorandum of Understanding, Air Quality Analysis for Environmental Documents.

HDR. December 2005. Section 6(f) Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

HDR. February 2006a. Section 4(f) Technical Memorandum, Section 4(f) Decision Process Step 1. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

HDR. February 2006b. Wetland Technical Memorandum. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

HDR. March 2006. Regulated Materials Technical Memorandum, Phase I Environmental Site Assessment. Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

HDR. April 2006. Noise Study Technical Memorandum (For the portion of Segment 1 located in Iowa). Council Bluffs Interstate System Improvements, Omaha/Council Bluffs Metropolitan Area, Pottawattamie County, Iowa. Prepared for Iowa DOT.

HDR. August 2006a. Limited Phase II Environmental Site Assessment Sampling Report, Omaha Lead Superfund Site. Segments 1 and 2 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

HDR. August 2006b. Limited Phase II Environmental Site Assessment Sampling Report, Warren Industries, Inc. Segment 1 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa. Prepared for Iowa DOT.

HDR. August 2006c. Section 4(f) Technical Memorandum, Section 4(f) Decision Process Steps 2-5. Segment 1 of the Council Bluffs Interstate System Improvements Project, Pottawattamie County, Iowa, Douglas County, Nebraska. Prepared for Iowa DOT and NDOR.

HDR. October 2006. Personal Communication Regarding Preliminary Results of Wetland Delineation Conducted September 22, 2006 for NDOR.

Iowa DNR. "Private Well Data Tracking System." Iowa DNR Water Supply Operations website. http://www.iowadnr.com/water/wells/tracking.html.

Iowa DNR. 2004a. Iowa's Final 2004 List of Clean Water Act Section 303(d) Impaired Waters. Available online through the Iowa DNR/[Iowa Geological Survey] IGS website, Iowa Section 303(d) Impaired Waters Listings, Final 2004 303(d) List. Accessed on May 1, 2006. http://wqm.igsb.uiowa.edu/WQA/303d.html.

Iowa DNR. 2004b. Water Quality in Iowa from 2000 through 2004. Iowa DNR/IGS website. Accessed on May 1, 2006. http://wqm.igsb.uiowa.edu/wqa/305b/2004/2004_305b.html.

Iowa DOT. April 17, 2003. Policies and Procedures Manual: Highway Traffic Noise Analysis and Abatement. Policy No. 500.07.

Iowa DOT. April 2004. Draft Office of Location and Environment Manual. Part IV – Resource Studies, Chapter 40, Regulated Materials.

Iowa DOT. February 17, 2006. Letter from Matt Donovan, Office of Location and Environment, to Douglas W. Jones, Review and Compliance, Bureau of Historic Preservation, SHSI.

Iowa DOT. May 2006. Biological Evaluation of Threatened and Endangered Species and Habitat in Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements Project.

Iowa DOT. May 17, 2006. Letter from Matt Donovan, Office of Location and Environment, to Ralph Christian, Review and Compliance, Bureau of Historic Preservation, SHSI.

Nash, Jan. 2003. I-29 & I-80 Historical/Architectural Reconnaissance Survey: Council Bluffs, Iowa & Omaha, Nebraska. I-80 in Douglas County, Nebraska and I-29/I-80 in Pottawattamie County, Iowa. IMN-29-3(62)5—13-78. DOT Contract No. 05469, Work Order #1 to Tallgrass Historians L.C.

Nash, Jan. April 2006. Segment 1: Historical/Architectural Intensive-Level Survey & Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project, Omaha, Douglas County, Nebraska & Council Bluffs, Pottawattamie County, Iowa. Project No. IMN-29-3(62)54-13-78. HADB# 78-027. Tallgrass Historians L.C.

Nash, Jan. June 2006. Supplemental Report: Examination of the Cottage Park Neighborhood, Segment 1: Historical/Architectural Intensive-Level Survey & Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project, Omaha, Douglas County, Nebraska & Council Bluffs, Pottawattamie County, Iowa. Project No. IMN-29-3(62)54-13-78. HADB# 78-027. Nebraska SHPO # HP 0203-041-01. Tallgrass Historians L.C.

National Park Service. December 7, 2005. Personal communication.

NDEQ. December 31, 2002. Title 117, Nebraska Surface Water Quality Standards.

NDEQ. April 27, 2006. Telephone conversation between Dave Johnson, NDEQ, and Quinn Damgaard, HDR.

NDEQ, Water Quality Division. March 2004. 2004 Surface Water Quality Integrated Report. Available online through the NDEQ website, Reports. Accessed on May 1, 2006. http://www.deq.state.ne.us/Publica.nsf/pages/WAT021.

NDEQ, Water Quality Division. March 2006a. 2005 Nebraska Surface Water Quality Monitoring Report. Available online through the NDEQ website, Annual Reports. Accessed on May 1, 2006. http://www.deq.state.ne.us/Publica.nsf/pages/WAT096.

NDEQ, Water Quality Division. March 2006b. 2006 Surface Water Quality Integrated Report. Available online through the NDEQ website, Reports. Accessed on May 1, 2006. http://www.deq.state.ne.us/Publica.nsf/pages/WAT095.

NDOR. May 1998. Noise Analysis and Abatement Policy for Federal-Aid Type I Projects.

NDOR. April 15, 2004. Right of Way Manual. Available through ROW On-Line Documents. http://www.nebraskatransportation.org/roway/doc-pub.htm.

NDOR. April 5, 2006. Personal communication regarding minimization measures for Deer Hollow Park and Omaha's Henry Doorly Zoo.

Neb. Rev. Stat. Section 76-1214 et seq. Nebraska Relocation Assistance Act.

NP Dodge. April 28, 2006. Personal communication with Glen Tiessen. NP Dodge Evaluation of Comparable Listings for Potential Relocations.

NSHS. March 5, 2003. Letter from Terry Steinacher, H.P. Archaeologist, and L. Robert Puschendorf, Deputy NeSHPO, to Leonard J. Sand, Environmental Analyst Supervisor, NDOR.

NSHS. August 7, 2003. Letter from Terry Steinacher, H.P. Archaeologist, and L. Robert Puschendorf, Deputy NeSHPO, to Leonard J. Sand, Environmental Analyst Supervisor, NDOR.

NSHS. September 14, 2004. Letter from Terry L. Steinacher, H.P. Archaeologist, and L. Robert Puschendorf, Deputy NeSHPO, to Leonard J. Sand, Planning & Project Development, NDOR.

NSHS. May 18, 2006. Letter from L. Robert Puschendorf, Deputy NeSHPO, to Leonard Sand, Planning and Project Development Division, NDOR.

NSHS. June 26, 2006. Letter from L. Robert Puschendorf, Deputy NeSHPO, to Leonard Sand, Planning and Project Development Division, NDOR.

Omaha Parks, Recreation, and Public Property Department. January 9, 2005. Personal communication.

Omaha's Henry Doorly Zoo. July 7, 2006. Personal communication with Dr. Lee Simmons, Director.

P.L. 101-549. November 15, 1990. Clean Air Act Amendments of 1990.

Pottawattamie County Assessor website (for property parcel data). Accessed 2005. www.pottco.org.

Reed, Porter B., Jr. May 1988a. National List of Plant Species That Occur in Wetlands: Central Plains (Region 5). National Ecology Research Center, U.S. Fish and Wildlife Service: St. Petersburg, FL.

Reed, Porter B., Jr. May 1988b. National List of Plant Species That Occur in Wetlands: North Central (Region 3). National Ecology Research Center, U.S. Fish and Wildlife Service: St. Petersburg, FL.

Rogers, Leah. 2003. I-29 & I-80 Archaeological Assessment: Council Bluffs, Iowa, I-29/I-80 in Pottawattamie County, Iowa. IMN-29-3(62)5—13-78. DOT Contract No. 05469, Work Order #1 to Tallgrass Historians L.C.

Rogers, Leah. December 2005. Segment 1 Archaeological Evaluation, Council Bluffs Interstate System Improvements (CBIS) Project, City of Council Bluffs, Pottawattamie County, Iowa. Project No. IMN-29-3(62)54-13-78. R&C Number 020378055. Tallgrass Historians L.C.

SHSI. June 18, 2006. Letter from Ralph Christian, SHPO Historian, to Matthew J.F. Donovan, Office of Location and Environment, Iowa DOT.

U.S. Census Bureau. 2000. 2000 Census Lookup. http://factfinder.census.gov.

URS. July 2006. Interstate-80: 24th Street Bridge to Missouri River Bridge. Air Quality Report. NH-80-9[889].

URS. October 2006. Interstate-80: 24th Street Bridge to Missouri River Bridge. Noise Study Report. NH-80-9[889].

USACE. 2001. Missouri River Revised Draft Environmental Impact Statement, Master Water Control Manual, Review and Update (Study).

USDA NRCS. 1975. Soil Survey of Douglas County, Nebraska. In cooperation with University of Nebraska-Lincoln, Conservation and Survey Division.

USDA NRCS. 1989. Soil Survey of Pottawattamie County, Iowa. In cooperation with Iowa Agricultural and Home Economics Experiment Station and other local agencies.

USFWS. National Wetlands Inventory. www.fws.gov/nwi.

USGS. May 3, 2006. Water Quality Samples for Nebraska, USGS 06610000 Missouri River at Omaha, NE. Accessed on May 3, 2006. http://nwis.waterdata.usgs.gov/ne/nwis/qwdata?search_site_no=06610000&search_site_no_match_type=anywhere&format=station_list&sort_key=site_no&group_key=NONE&sitefile_output_format=html_table&column_name=agency_cd&column_name=site_no&.

APPENDIX A

STREAMLINED RESOURCE CHECKLIST AND JUSTIFICATION

RESOURCE ANALYSIS CHECKLIST

The first column with a check means the resource is in the Segment 1 Study Area. The second column with a check means the impact on the resource warrants more discussion in this document. Resources without a check in both the first and second column have been reviewed and are included in the summary (see the following page.)

		SOCIOECONOMIC			NATURAL ENVIRONMENT
☒	☒	Land Use	☒	☒	Wetlands
☒	☐	Community Cohesion	☒	☒	Water Resources
☒	☒	Relocation Potential	☐	☐	Wild and Scenic Rivers
☒	☐	Churches and Schools	☒	☒	Floodplains
☒	☐	Railroads and Utilities	☒	☐	Wildlife and Habitat
☐	☐	Energy	☐	☐	Farmland
☒	☐	Public Services	☒	☒	Threatened and Endangered Species
☒	☐	Environmental Justice	☒	☐	Vegetation
☒	☐	Transportation	☒	☐	Ecosystem
☒	☒	Right-of-Way	☐	☐	Coastal Barriers
☒	☒	Construction	☐	☐	Coastal Zones
☒	☐	Pedestrians and Bicyclists			
☒	☐	Economics			
		CULTURAL			**PHYSICAL**
☒	☒	Archaeological Sites	☒	☒	Noise
☒	☒	Historic Sites or Districts	☒	☒	Air Quality
☒	☐	Recreation	☒	☒	Regulated Materials
☒	☒	Section (4(f) Properties	☒	☐	Visual Resources and Aesthetics

☒ **CONTROVERSY POTENTIAL:**

Controversy is minimal because the Segment 1 Project is primarily within existing right-of-way, with small portions of adjacent land needed for the Segment 1 Project. Expansion of the Interstate by two or more lanes near residential areas in Nebraska could result in some traffic noise encroachment concerns.

☒ **Section 4(f): Specify details:**

Although use of some property from Deer Hollow Park and Omaha's Henry Doorly Zoo cannot be feasibly and prudently avoided, the use has been minimized in the design process. The amounts of property affected are minimal and do not affect the function of the resources.

Community Cohesion:

Evaluation and Date:	The interstate already exists in the area. Communities originally severed by the initial interstate highway would remain unchanged. The Segment 1 Project would not isolate or change the boundaries of any neighborhoods. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Churches and Schools:

Evaluation and Date:	The Segment 1 Project, during construction or after completion, would not impact access to the Bancroft Academy, Vinton School, other schools, or churches in the vicinity of the interstate. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Railroads and Utilities:

Evaluation and Date:	A Burlington Northern Santa Fe Railway rail line is present in Omaha along the Missouri River, under the existing Interstate 80 (I-80) Missouri River bridge. Various utilities are also present in the vicinity of the project. During construction, coordination would be needed to minimize the effect of the Segment 1 Project. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Energy:

Evaluation and Date:	Energy would be consumed during construction, including processing of materials for use in construction. The capacity of Segment 1 would be expanded by adding lanes and another I-80 Missouri River bridge, thus decreasing congestion and vehicle idling. Consequently, a slight reduction in vehicle fuel consumption would result in an energy savings. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Public Services:

Evaluation and Date:	The Segment 1 Project would have no direct effect on emergency/health care services. Interstate traffic and public services will continue throughout construction. It has the potential to result in improved emergency response times in the future. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Environmental Justice:

Evaluation and Date:	The improved transportation route and access to the remainder of the Council Bluffs Interstate System (CBIS) resulting from the Segment 1 Project would benefit all residents in the Segment 1 Study Area. The project would not exert high or disproportionate adverse impacts on minority or low-income residents. Although these populations exist in some Census blocks and block groups in the Study Area and may experience some impacts from the project (such as relocation or increased noise), the type and extent of impact would not be considered an Environmental Justice impact as defined by Executive Order 12898. The interstate currently exists adjacent to some EJ populations, but expansion immediately adjacent to the existing roadway would cause the least impacts. 4/28/06
Database Used:	U.S. Census Bureau, 2000
Completed by:	Brian Goss

Transportation:

Evaluation and Date:	The Segment 1 Project would improve transportation on Segment 1 of the CBIS and access to the interconnecting highway network. Access to and from the interstate would be maintained during construction. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Pedestrians and Bicyclists:

Evaluation and Date:	The Segment 1 Project would have no direct effect on the Iowa Riverfront Trail and the Back to the River Trail, which traverse the Segment 1 Study Area. Detours may be necessary during construction, but all trail access and continuity would be maintained. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Economics:

Evaluation and Date:	Economic benefits would accrue from introducing construction to the region and, after completion of the Segment 1 Project, from the more efficient transportation system resulting from the project. Access along the CBIS would be maintained during construction. The estimated cost for the Segment 1 Project is approximately $95 million to $100 million in the year of expenditure from state fiscal year 2008 to 2011. Project expenditures would benefit the local economy. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Recreation:

Evaluation and Date:	Recreation facilities along I-80 in the Segment 1 Study Area include Spring Lake Park, Deer Hollow Park, Rosenblatt Stadium, Omaha's Henry Doorly Zoo (Zoo), Lauritzen Gardens, and the Western Historic Trails Center (WHTC). Activities at these sites and access to the sites would be maintained during construction. Potential Section 4(f) issues with respect to the Deer Hollow Park, the Zoo, and the WHTC are addressed separately. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Wild and Scenic Rivers:

Evaluation and Date:	None present in the Segment 1 Study Area. The Missouri River does not have a wild, scenic, or recreational designation in this area. 4/28/06
Database Used:	Website: http://www.nps.gov/rivers/wildriverslist.html#ne
Completed by:	Brian Goss

Wildlife and Habitat:

Evaluation and Date:	The Segment 1 Study Area is urban. Negligible wildlife habitat currently exists along and adjacent to the existing right-of-way (ROW). Project impacts would be minimal compared with those of a new alignment. Specifics regarding threatened and endangered species habitat are addressed separately. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Farmland:

Evaluation and Date:	None present in or along the Segment 1 Study Area. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Vegetation:

Evaluation and Date:	As noted under Wildlife and Habitat, above, this is an urban environment, with limited vegetation along and adjacent to the existing ROW. Project impacts would be minimal compared with those of a new alignment. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Ecosystem:

Evaluation and Date:	As noted under Wildlife and Habitat and under Vegetation, above, this is an urban environment, with minimal wildlife habitat and vegetation along and adjacent to the existing ROW. Project impacts would be minimal compared with those of a new alignment. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Coastal Barriers:

Evaluation and Date:	None present in the Segment 1 Study Area. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Coastal Zones:

Evaluation and Date:	None present in the Segment 1 Study Area. 4/28/06
Database Used:	none
Completed by:	Brian Goss

Visual Resources and Aesthetics:

Evaluation and Date:	The Segment 1 Study Area is an urban environment dominated by residential and commercial land uses. Although the Segment 1 Project would result in a highway that is wider than the existing interstate highway facility, it would have minimal effect on the existing viewshed. 4/28/06
Database Used:	none
Completed by:	Brian Goss

APPENDIX B

AGENCY CORRESPONDENCE AND COMMENT LETTERS

Dave Heineman
Governor

STATE OF NEBRASKA
DEPARTMENT OF ROADS
John L. Craig, Director
1500 Highway 2 • PO Box 94759 • Lincoln NE 68509-4759
Phone (402)471-4567 • FAX (402)479-4325 • www.dor.state.ne.us

October 13, 2006

Mr. Larry Foster
Omaha Parks and Recreation Department
1819 Farnam St Ste 701
Omaha NE 68183

Re: Project No. IM-080-1(318) 0-13-78
Segment 1 – Council Bluffs Interstate System (CBIS) Improvements Project
NH-80-9(878), I-80, Missouri River to 24th Street in Omaha.
Coordination of Trail Use During Bridge Construction

Dear Mr. Foster:

The Back-to-the-River Trail, a component of the Omaha Riverfront Trail, is beneath the existing Interstate 80 (I-80) Missouri River Bridge. The planned improvements to I-80 include the construction of a new Missouri River Bridge on the north side of the existing I-80 bridge. It is planned to use the existing I-80 bridge in place. During preparation of the Environmental Impact Statement (EIS) for Tier 1 of the CBIS Improvements Project, the Back-to-the-River-Trail was identified as a Section 4(f) property. Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 provides special protection for certain properties such as public parks, recreation areas, wildlife or waterfowl refuges and historic sites. Section 4(f) requires coordination with the officials with jurisdiction over the potentially affected resource.

In the EIS for Tier 1 of the CBIS Improvements Project, it was indicated that during construction the continuity of and access to these trails would be maintained; therefore, FHWA determined that this Section 4(f) resource would only be temporarily occupied and that the temporary occupancy would not result in a direct or constructive use. Currently, an Environmental Assessment (EA) is being prepared for Segment 1 of the Project. The EA will note that coordination will be conducted with the Omaha Parks and Recreation Department concerning temporary occupancy of the trail during installation of piers and girders for the bridge. This letter reaffirms this commitment to minimize temporary impacts to the trail system.

As the I-80 project continues through the design process to final design and specification preparation, a meeting with the Omaha Parks and Recreation Department will be arranged to address temporary trail occupancy. Topics of discussion will include, but are not limited to, timeframes when temporary occupancy may occur, methods for notifying trail users concerning the occupancy of the trail, and protective measures for the trail during bridge construction.

If there are any questions, please contact me at (402) 479-4411. Thank you.

Sincerely,

Leonard J. Sand
Highway Environmental Program Manager
Planning and Project Development Division

LJS/S5-B

xc: Terry Gibson, Roadway Design

Iowa
Fields of Opportunities

STATE OF IOWA

THOMAS J. VILSACK, GOVERNOR
SALLY J. PEDERSON, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

October 12, 2006

Mr. James P. Rost
Director, Office of Location and Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

RE: Environmental Review for Natural Resources
Council Bluffs Interstate System Improvements Project, Pottawattamie County, IA;
IM-029-3(62)54—13-78

Dear Mr. Solberg:

Thank you for inviting our comments on the impact of the above referenced project.

We concur with the Determination of Effect for Threatened and Endangered Species prepared by HDR Engineering, Inc. dated May, 2006 regarding the project identified above.

If you have any questions about this letter or if you require further information, please contact Keith Dohrmann at (515) 281-8967.

Sincerely,

Diane Ford-Shivvers, Supervisor
Policy and Coordination
Conservation and Recreation Division

DFS:kld

CC: Christine Schwake, Water Quality Bureau, Iowa DNR (by email)

FILE COPY: Keith L. Dohrmann

06-4661La.doc

Iowa Department of Transportation
800 Lincoln Way, Ames, IA 50010

October 12, 2006

Mr. Ronald Hopp
Director
Council Bluffs Parks, Recreation and Public Property Department
209 Pearl Street
Council Bluffs, Iowa 51503

Re: Project No. IM-080-1(318)0—13-78
Segment 1 – Council Bluffs Interstate System (CBIS) Improvements Project
Coordination of Trail Use During Bridge Construction

Dear Mr. Hopp:

The Iowa Riverfront Trail is beneath the existing Interstate 80 (I-80) bridge. The Segment 1 CBIS Improvements Project will involve installation of a 5-lane westbound bridge to the north of the existing bridge. The existing I-80 bridge will be converted to a 5-lane eastbound bridge after completion of Segment 2 of the CBIS Improvements Project. During Tier 1 of the CBIS Improvements Project, the Iowa Riverfront Trail was identified as a Section 4(f) property. Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 provides special protection for certain properties such as public parks, recreation areas, wildlife or waterfowl refuges and historic sites. Section 4(f) requires coordination with the officials with jurisdiction over the potentially affected resource.

During Tier 1, FHWA determined that the continuity of and access to these trails would be maintained during and after construction; therefore, FHWA agreed that these Section 4(f) resources would be only temporarily occupied and that the temporary occupancy would not result in a direct or constructive use. An Environmental Assessment (EA) is being prepared for Segment 1 of the Project. The EA will note that coordination will be conducted with the Council Bluffs Parks, Recreation, and Public Property Department concerning temporary occupancy of the trail during installation of piers and girders for the bridge. This letter reaffirms this commitment to minimize temporary impacts to the trail system.

If there are any questions, please contact me at (515) 233-7977 or kris.riesenberg@dot.iowa.gov.

Thank you.

Sincerely,

Kris Riesenberg
Office of Location and Environment
Iowa Department of Transportation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Rock Island Field Office
4469 48th Avenue Court
Rock Island, Illinois 61201
Phone: (309) 793-5800 Fax: (309) 793-5804

IN REPLY REFER TO:
FWS/RIFO

August 30, 2006

Mr. James P. Rost
Attn: Scott Marler
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

Dear Mr. Rost:

We have reviewed your letter of July 28, 2006, regarding plans to reconstruct and add capacity to the I-29/I-80/I-480 Interstate Systems in Council Bluffs, Pottawattamie County, Iowa, and Omaha, Douglas County, Nebraska. We have also reviewed the *Threatened and Endangered Species Survey Technical Memorandum* (survey) that documents the results of the literature reviews and field surveys. We have the following comments.

We concur with your findings that, in regard to the 11 species considered during the survey, either no suitable habitat is present, or no effect is anticipated as a result of avoidance measures during project construction. Therefore, the proposed project is not likely to adversely affect threatened or endangered species. Should the project be modified or new information indicate endangered species may be affected, consultation should be initiated.

Thank you for the opportunity to provide comments. If you have any additional questions or concerns, please contact Heidi Woeber of my staff.

Sincerely,

Richard C. Nelson
Field Supervisor

S:\Office Users\Heidi\concurnlaaiadotI-2980480.doc

STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF ROADS
John L. Craig, Director
1500 Highway 2 • PO Box 94759 • Lincoln NE 68509-4759
Phone (402)471-4567 • FAX (402)479-4325 • www.dor.state.ne.us

August 18, 2006

Mr. Larry Foster
Omaha Parks and Recreation Department
1819 Farnam St Ste 701
Omaha NE 68183

Re: Project No. IM-080-1(318)0-13-78
Segment 1 – Council Bluffs Interstate System (CBIS) Improvements Project
NH-80-9(878), I-80, Missouri River to 24th Street in Omaha.
Section 4(f) *De Minimis* Finding for Deer Hollow Park

Dear Mr. Foster:

Deer Hollow Park, located adjacent to Interstate 80 (I-80) in Omaha, has been identified as a Section 4(f) property. Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 provides special protection for certain properties such as public parks, recreation areas, wildlife or waterfowl refuges and historic sites. Deer Hollow Park is considered to be a public park subject to Section 4(f) provisions. Section 4(f) requires coordination with the officials with jurisdiction over the potentially affected resource.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49, United States Code, to simplify the processing and approval of projects that have only *de minimis* (trifling or minimal) impacts on lands protected by Section 4(f).

The improvements in Segment 1 of the CBIS Improvement Project would result in an encroachment on Deer Hollow Park property north and south of I-80. The encroachment results from the need to widen the existing interstate from the Missouri River to 24th Street in Omaha to accommodate additional eastbound and westbound traffic lanes. Figure 1 shows the boundary of the park and the proposed preliminary impact area. The preliminary impact area consists of the approximate right-of-way (ROW) needs of the preferred alternative based on the preliminary design completed to date and includes the area where construction activities would occur.

The encroachment would result in the conversion of approximately 0.27 acre of Deer Hollow Park property to interstate ROW; this equates to approximately 3.4 percent of the total Deer Hollow Park area. The land to be incorporated does not include any of the developed or recently renovated park recreational facilities. A row of ten 25-foot tall trees recently planted on the south boundary of the park north of I-80 may need to be removed and the fence separating the park from the interstate may need to be relocated. A stormwater drain is located on the north end of the row of trees and may need to be replaced. In addition, 0.07 acre of the historic Omaha Park and Boulevard system (including five mature trees) that is still maintained by the Omaha Parks Department would also be permanently incorporated into the interstate system.

The planned interstate improvements will have a minor impact on Deer Hollow Park and will not adversely impact the activities, features, attributes, and functions of Deer Hollow Park that qualify the park for protection under Section 4(f). Additionally, the Nebraska State Historic Preservation Office has concurred with a determination that the small amount of land to be incorporated into interstate ROW would result in no effect on the historic Omaha Park and Boulevard System. Based on these findings, the Federal Highway Administration (FHWA) had determined this is a *de minimis* impact.

As part of the design development process by the Nebraska Department of Roads (NDOR), the ROW acquisition area required at Deer Hollow Park has been minimized to the extent practicable without compromising the Project's ability to meet the purpose and need as well as safety standards. As the project progresses, NDOR plans to meet with the Omaha Parks and Recreation Department representatives to discuss design details. NDOR will work with the Omaha Parks and Recreation Department to identify suitable mitigation for impacted trees and fence.

An Environmental Assessment (EA) is being prepared for Segment 1 of the project. In accordance with recent guidance regarding public involvement in the Section 4(f) process, NDOR will seek signed concurrence from you (either via the signature block below or a comment letter by the Omaha Parks and Recreation Department) on the Section 4(f) *de minimis* finding. The proposed project to include the encroachment on Deer Hollow Park will be discussed at the public hearing on the EA.

If there are any questions, please contact me at (402) 479-4411.

Thank you.

Sincerely,

Leonard J. Sand
Highway Environmental Program Manager
Planning and Project Development Division

.....

Omaha Parks and Recreation Department
Concurs with the Section 4(f) *de minimis* finding by FHWA

.....

Date

LJS:P4-A1-2

STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF ROADS
John L. Craig, Director
1500 Highway 2 • PO Box 94759 • Lincoln NE 68509-4759
Phone (402)471-4567 • FAX (402)479-4325 • www.dor.state.ne.us

August 18, 2006

Mr. Larry Foster
Omaha Parks and Recreation Department
1819 Farnam St Ste 701
Omaha NE 68183

Re: Project No. IM-080-1(318)0—13-78
Segment 1 – Council Bluffs Interstate System (CBIS) Improvements Project
NH-80-9(878), I-80, Missouri River to 24th Street in Omaha
4(f) *De Minimis* Finding for Omaha's Henry Doorly Zoo

Dear Mr. Foster:

Omaha's Henry Doorly Zoo (Zoo) located adjacent to Interstate 80 (I-80) in Omaha has been identified as a Section 4(f) property. Because the Omaha Parks and Recreation Department leases the former Riverfront Park property to the Zoo, both the Omaha Parks and Recreation Department and the Zoo are being asked for concurrence on a 4(f) *de minimis* finding for impacts of the CBIS Improvements Project (Project).

Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 provides special protection for certain properties such as public parks, recreation areas, wildlife or waterfowl refuges, and historic sites. The uses or functions of the Zoo are as a conservation, research, recreation, and educational facility. Consequently, the Zoo is considered to be a recreational area subject to Section 4(f) provisions. Section 4(f) requires coordination with the officials with jurisdiction over the potentially affected resource.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49, United States Code, to simplify the processing and approval of projects that have only *de minimis* (trifling or minimal) impacts on lands protected by Section 4(f).

The improvements in Segment 1 of the Project would result in an encroachment on Zoo property north and south of I-80. The encroachment results from the need to widen the existing interstate from the Missouri River to 24th Street in Omaha to accommodate additional eastbound and westbound traffic lanes. The Nebraska Department of Roads (NDOR) has modified the design in this area to minimize right-of-way (ROW) impacts through the use of retaining walls north and south of I-80.

The encroachment would result in the conversion of approximately 0.89 acre of Zoo property (0.30 acre north of I-80 and 0.59 acre south of I-80). Figure 1 shows Zoo property boundaries near the interstate and the proposed preliminary impact area. The preliminary impact area consists of the approximate ROW needs of the preferred alternative based on the preliminary design completed to date and includes the area where construction activities would occur. In this area of the Zoo south of I-80, specific recreational features include animal exhibits, the railroad, walking paths, and a smoking area. Other Zoo features south of I-80 include a fence (with footers 4-foot deep to prevent dogs and other animals from burrowing underneath the fence and entering the Zoo), a flagpole, and maintenance buildings. Another feature in this area is a tunnel beneath I-80 connecting the north and south areas of the Zoo.

The Project is being designed to not affect the tunnel or maintenance buildings. NDOR will work with the Omaha Parks and Recreation Department and the Zoo to relocate the flagpole and fence, if necessary, to mitigate for the impacts of the Project. The planned interstate improvements will have a minor impact on the Zoo and will not adversely impact the activities, features, attributes, and functions of the Zoo, neither north nor south of the interstate, that qualify the Zoo for protection as a recreational area under Section 4(f). Based on these findings, the Federal Highway Administration (FHWA) has determined this is a *de minimis* impact. .

As the Project progresses, NDOR plans to meet with Omaha Parks and Recreation Department representatives to discuss design details. An Environmental Assessment (EA) is being prepared for Segment 1 of the Project. In accordance with recent guidance regarding public involvement in the Section 4(f) process, NDOR will seek signed concurrence from you (either via the signature block below or a comment letter by the Omaha Parks and Recreation Department) on the Section 4(f) *de minimis* finding. The proposed project to include the encroachment on Henry Dooley Zoo will be discussed at the public hearing on the EA.

If there are any questions, please contact me at (402) 479-4411.

Thank you.

Sincerely,

Leonard J. Sand
Highway Environmental Program Manager
Planning and Project Development Division

.....
Omaha Parks and Recreation Department
Concurs with the Section 4(f) *de minimis* finding by FHWA

.....
Date

LJS:P4-A3-4

cc: Dr. Lee Simmons, Omaha's Henry Doorly Zoo

Dave Heineman
Governor

STATE OF NEBRASKA
DEPARTMENT OF ROADS
John L. Craig, Director
1500 Highway 2 • PO Box 94759 • Lincoln NE 68509-4759
Phone (402)471-4567 • FAX (402)479-4325 • www.dor.state.ne.us

August 18, 2006

Dr. Lee Simmons
Omaha's Henry Doorly Zoo
3701 S 10th St
Omaha NE 68107

Re: Project No. IM-080-1(318)0-13-78
Segment 1 – Council Bluffs Interstate System (CBIS) Improvements Project
NH-80-9(878), I-80, Missouri River to 24th Street in Omaha
4(f) *De Minimis* Finding for Omaha's Henry Doorly Zoo

Dear Dr. Simmons:

Omaha's Henry Doorly Zoo (Zoo) located adjacent to Interstate 80 (I-80) in Omaha has been identified as a Section 4(f) property. Because the Omaha Parks and Recreation Department leases the former Riverfront Park property to the Zoo, both the Omaha Parks and Recreation Department and the Zoo are being asked for concurrence on a 4(f) *de minimis* finding for impacts of the CBIS Improvements Project (Project).

Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 provides special protection for certain properties such as public parks, recreation areas, wildlife or waterfowl refuges, and historic sites. The Zoo functions as a conservation, research, recreation, and educational facility. Consequently, the Zoo is considered to be a recreational area subject to Section 4(f) provisions. Section 4(f) requires coordination with the officials with jurisdiction over the potentially affected resource.

Section 6009(a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59, amended existing Section 4(f) legislation at Section 138 of Title 23 and Section 303 of Title 49, United States Code, to simplify the processing and approval of projects that have only *de minimis* (trifling or minimal) impacts on lands protected by Section 4(f).

The improvements in Segment 1 of the Project would result in an encroachment on Zoo property north and south of I-80. The encroachment results from the need to widen the existing interstate from the Missouri River to 24th Street in Omaha to accommodate additional eastbound and westbound traffic lanes. The Nebraska Department of Roads (NDOR) has modified the design in this area to minimize right-of-way(ROW) impacts through the use of retaining walls north and south of I-80.

The encroachment would result in the conversion of approximately 0.89 acre of Zoo property (0.30 acre north of I-80 and 0.59 acre south of I-80). Figure 1 shows Zoo property boundaries near the interstate and the proposed preliminary impact area. The preliminary impact area consists of the approximate ROW needs of the preferred alternative based on the preliminary design completed to date and includes the area where construction activities would occur. In this area of the Zoo south of I-80, specific recreational features include animal exhibits, the railroad, walking paths, and a smoking area. Other Zoo features south of I-80 include a fence (with footers 4-foot deep to prevent dogs and other animals from burrowing underneath the fence and entering the Zoo), a flagpole, and maintenance buildings. Another feature in this area is a tunnel beneath I-80 connecting the north and south areas of the Zoo.

The Project is being designed to not affect the tunnel or maintenance buildings. NDOR will work with the Omaha Parks and Recreation Department and the Zoo to relocate the flagpole and fence, if necessary, to mitigate for the impacts of the Project. The planned interstate improvements will have a minor impact on the Zoo and will not adversely impact the activities, features, attributes, and functions of the Zoo, neither north nor south of the interstate, that qualify the Zoo for protection as a recreational area under Section 4(f). Based on these findings, the Federal Highway Administration (FHWA) has determined this is a *de minimis* impact.

As the Project progresses, NDOR plans to meet with Zoo representatives to discuss design details. An Environmental Assessment (EA) is being prepared for Segment 1 of the Project. In accordance with recent guidance regarding public involvement in the Section 4(f) process, NDOR will seek signed concurrence from you (either via the signature block below or a comment letter by the Zoo) on the Section 4(f) *de minimis* finding. The proposed project to include the encroachment on the Henry Doorly Zoo will be discussed at the public hearing on the EA.

If there are any questions, please contact me at (402) 479-4411.

Thank you.

Sincerely,

Leonard J. Sand
Highway Environmental Program Manager
Planning and Project Development Division

.....
This office concurs with the Section 4(f) *de minimis* finding by FHWA

.....
Date

LJS:P4-A5-6

cc: Larry Foster, Omaha Parks and Recreation Department

K. Riesenberg

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1225
Fax: 515-239-1726

July 28, 2006

Ref. Pottawattamie County
IM-029-3(62)54--13-78
PIN: 04-78-029-010

Richard C. Nelson
U.S. Fish and Wildlife Service
Rock Island Field Office
4469 48th Avenue Court
Rock Island, Illinois 61201

Dear Mr. Nelson:

The Iowa Department of Transportation (DOT) and Nebraska Department of Roads are proposing to reconstruct and add capacity to the I-29/I-80/I-480 Interstate Systems in Council Bluffs, Pottawattamie County, Iowa and Omaha, Douglas County, Nebraska.

A Tier 1 Environmental Impact Statement and Record of Decision were approved by FHWA for this project on October 26, 2005. The project has been divided into five segments for completion of Tier 2 level NEPA documentation.

Iowa DOT requests informal consultation with the Service regarding the Tier 2 Segment 1, 2, and 3 projects, in accordance with Section 7(a)(2) of the Endangered Species Act, 50 CFR §402.13, and the delegation authority provided by FHWA.

On April 15, 2003, the Service provided information concerning species, listed or proposed to be listed, in the project area. A survey of the project area was conducted on July 7 and 8, 2005 to document the presence of any protected species and critical or suitable habitat in the project area. No listed species or critical habitat were identified during the survey. Please find enclosed the *Threatened and Endangered Survey Technical Memorandum* that documents the results of the literature reviews and field surveys.

Based on this information, the Iowa DOT has determined, under the delegation authority provided by FHWA, that the proposed project is not likely to adversely affect federally listed species or result in the destruction or adverse modification of federally designated critical habitat. *We request that the Service concur with this determination.*

We have enclosed supporting information to assist in your review of this project, including forms documenting "Not Likely to Adversely Affect" for seven species.

This project is a federal-aid project. If you have questions or need additional information, please contact me or Scott Marler at 515/ 239-1510.

Sincerely,

James P. Rost
Director, Office of Location and Environment

Enc.

cc: Daryl Howell, Iowa Department of Natural Resources

Christine Schwake, Iowa Department of Natural Resources

Neal Johnson, U.S. Army Corps of Engineers, Rock Island District

Steve Anschutz, U.S. Fish and Wildlife Service, Grand Island Field Office, 203 West 2nd Street, Grand Island, Nebraska 68801

Carey Grell, Nebraska Game and Parks Commission, 2200 N 33rd Street, PO Box 30370, Lincoln Nebraska, 68503

Len Sand, Nebraska Department of Roads, 1500 Highway 2, PO Box 94759, Lincoln, Nebraska, 68509

R. Ridnour, Location & Environment
K. Riesenberg, Location & Environment
S. Marler, Location & Environment
M. Solberg, Location & Environment (file)
J. Selmer, District 4, Iowa DOT
M. LaPietra, Federal Highway Administration

Iowa Department of Transportation
800 Lincoln Way, Ames, Iowa 50010
515-239-1795
FAX 515-239-1726

July 10, 2006

Ref. No IMN-29-3(62)54--13-78
City of Council Bluffs
Pottawattamie County
Primary

Ralph Christian
Review and Compliance
Department of Cultural Affairs
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319

R&C# ***020378055***

Dear Ralph:

RE: Architectural Survey – Cottage Park, Omaha

Enclosed for your review and file is the supplemental architectural survey for Segment 1 of 3 segments of the I-29 and I-80 improvements in the Council Bluffs/Omaha area. Segment 1 is within Omaha's Cottage Park Neighborhood. The report has been sent to the Nebraska State Historic Preservation Office for review and comment.

The supplemental survey investigated the potentially significant 1093 Ontario St under criteria A & C. Under criterion C, the home was determined to be common structural type in Nebraska and not eligible for the National Register. In investigating for criterion A, the study determined that the Cottage Park Neighborhood is not a historic district.

If you have any questions or need any further information, please do not hesitate to contact me.

Sincerely,

Judy McDonald
Office of Location & Environment
judy.mcdonald@dot.iowa.gov

JM
Enclosure
cc: John Selmar, District 4
Donna Matulac, OLE
DeeAnn Newell, OLE

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

June 26, 2006

Leonard Sand, Highway Environmental Program Manager
Planning and Project Development Division
Nebraska Department or Roads
ITERAGENCY CORRESPONDENCE

Re: Interstate 80 (I-80) Missouri River to 24th Street
Omaha, Douglas County, Nebraska
Project No. NH-80-9(878), CN-22069
In reply refer to HP 0203-041-01

Dear Len:
In response to our letter dated May 18, we have received further information regarding the property identified TG61 or 1903 Ontario Street (Supplemental Report: Examination of the Cottage Park Neighborhood; Tallgrass Historians L.C., June 2006 TG61). It is our opinion that this property is not individually eligible or contributing to an historic district eligible for listing in the National Register of Historic Places. No historic properties will be affected by the project, as proposed.

Our comment on this project and its potential to effect historic properties is made under Section 106 of the National Historic Preservation Act, as amended, and implementing regulations 36CFR Part 800.

If you have any questions, please contact me at 471-4769 or email bpsuchendorf@nebraskahistory.org

Sincerely,

L.Robert Puschendorf
Deputy State Historic Preservation Officer

MAY 1 9 2006

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

May 17, 2006

Ref. No: IMN-29-3(62)5-13-78
Pottawattamie
Primary

Mr. Ralph Christian
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C 020378055

Dear Ralph:

RE: I-29 & I-80- Council Bluffs Interstate System Improvements Project (CBIS) Historic / Architectural Intensive-Level Survey & Evaluation

Enclosed for your information and review is the Historical / Architectural Intensive-Level Survey & Evaluation for the above-mentioned federal funded project. This evaluation / survey reviewed Segment One of a 22-mile corridor involving Interstate-29 and Interstate-80 that runs through Omaha, Nebraska and Council Bluffs, Iowa.

Segment One of this project encompasses a project corridor that is approximately 1.13 miles in length. However, only 1200 ft. of the project corridor exists with the State of Iowa.

This investigation was conducted using an extensive archival / records search, along with inspections of each of the properties within the project corridor. During these inspections, details were recorded and black-and-white survey photographs were taken of all of the properties.

Three modern properties were recorded on the Iowa side of the project corridor. All of these properties were determined not eligible for the National Register and no further work was recommended.

Based on the finding of this Historical / Architectural Survey & Evaluation, in regards to the Iowa side of this segment, the determination is **No Historic Properties Affected**. If you concur with this determination, please sign the concurrence line below and return this letter. If you have any questions regarding this project, please feel free to contact me.

Sincerely,

Matthew J.F. Donovan

Matthew J.F. Donovan
Office of Location and Environment
Matt.Donovan@dot.state.ia.us

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
Kris Riesenberg- Location and Environment
Leah D. Rogers- Principal Investigator- Tallgrass

Concur:

SHPO Historian

Date: 6/15/06

Comments

Dave Heineman
Governor

STATE OF NEBRASKA
DEPARTMENT OF ROADS
John L. Craig, Director
1500 Highway 2 • PO Box 94759 • Lincoln NE 68509-4759
Phone (402)471-4567 • FAX (402)479-4325 • www.dor.state.ne.us

June 15, 2006

Mr. L. Robert Puschendorf
Deputy State Historic Preservation Officer
P O Box 82554
Lincoln NE 68501-2554

Re: Project NH-80-9(878), CN-22069
Interstate 80 (I-80), Missouri River to 24th Street, Omaha, Douglas County, Nebraska.
Segment 1: Historical/Architectural Intensive-Level Survey & Evaluation,
by Tallgrass Historians L.C., April 2006, [revision June 2006]
Response to comments dated May 18, 2006, HP #0203-041-01

Dear Mr. Puschendorf:

This project is part of a study to reconstruct the Council Bluffs Interstate System (CBIS), and is the only project that extends into Nebraska. Project NH-80-9(878), identified as Segment #1 of the CBIS study, provides for the upgrade of the segment of I-80 from the Missouri River (MO Rv) to approximately 24th Street, in Omaha. The upgrade will include the addition of traffic lanes adjacent to the existing roadway. This effort will include construction of a new bridge over the MO Rv adjacent to the upstream side of the existing bridge.

The historic report identified above was submitted to your office, and comments were received on May 18, 2006. The enclosed report, dated June 2006, is in response to those comments.

Please review the enclosed report with regard to Section 106 of the National Historic Preservation Act, and inform this office of the review outcome.

If you have any questions or need additional information, please contact me at (402) 479-4411.

Sincerely,

Leonard J. Sand
Highway Environmental Program Manager
Planning and Project Development Division

LJS/PDV6-ZO

Enclosure

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

May 18, 2006

Leonard Sand, Highway Environmental Program Manager
Planning and Project Development Division
Nebraska Department of Roads
INTERAGENCY CORRESPONDENCE

Re: Interstate 80 (I-80) Missouri River to 24th Street
Omaha, Douglas County, Nebraska
Project No. NH-80-9(878), CN-22069
In reply refer to HP 0203-041-01

Dear Len:

We have received the Historical/Architectural Intensive-Level Survey & Evaluation (Tallgrass Historians L.C., April 2006). Our comment on this project and its potential to affect historic properties is required by Section 106 of the National Historic Preservation Act of 1966, as amended, and implementing regulations 36 CFR Part 800.

Three properties were identified in this report for potential eligibility to the National Register of Historic Places. Our comments on each:

- TG9 Omaha Park and Boulevard System, Deer Hollow Park. In our opinion there will be no historic properties affected by the project as proposed.
- TG55 Omaha Park and Boulevard System, Spring Lake Park. In our opinion there will be no historic properties affected by the project as proposed.
- TG61 1903 Ontario Street, folk Victorian cottage. We are unable to make a determination of eligibility pending further information. We request that survey identify the potential for a historic district, roughly bounded by or within the Cottage Park plat including, but not limited to, the neighborhood's significance as one of Omaha's "streetcar suburbs."

If you have any questions, please do not hesitate to give me a call at (402) 471-4769 or email bpuschendorf@nebraskahistory.org

Sincerely,

L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historic Preservation Office

K. Riesenberg - OLE

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

May 17, 2006

Ref. No: IMN-29-3(62)5-13-78
Pottawattamie
Primary

Mr. Ralph Christian
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C _____

Dear Ralph:

RE: I-29 & I-80- Council Bluffs Interstate System Improvements Project (CBIS)
Historic / Architectural Intensive-Level Survey & Evaluation

Enclosed for your information and review is the Historical / Architectural Intensive-Level Survey & Evaluation for the above-mentioned federal funded project. This evaluation / survey reviewed Segment One of a 22-mile corridor involving Interstate-29 and Interstate-80 that runs through Omaha, Nebraska and Council Bluffs, Iowa.

Segment One of this project encompasses a project corridor that is approximately 1.13 miles in length. However, only 1200 ft. of the project corridor exists with the State of Iowa.

This investigation was conducted using an extensive archival / records search, along with inspections of each of the properties within the project corridor. During these inspections, details were recorded and black-and-white survey photographs were taken of all of the properties.

Three modern properties were recorded on the Iowa side of the project corridor. All of these properties were determined not eligible for the National Register and no further work was recommended.

Based on the finding of this Historical / Architectural Survey & Evaluation, in regards to the Iowa side of this segment, the determination is **No Historic Properties Affected**. If you concur with this determination, please sign the concurrence line below and return this letter. If you have any questions regarding this project, please feel free to contact me.

Sincerely,
Matthew J.F. Donovan

Matthew J.F. Donovan
Office of Location and Environment
Matt.Donovan@dot.state.ia.us

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
Kris Riesenberg- Location and Environment
Leah D. Rogers- Principal Investigator- Tallgrass

Concur:

_____ _____

SHPO Historian Date:
Comments

RECEIVED
APR 17 2006
OFFICE OF LOCATION & ENVIRONMENT

STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY
Michael J. Linder
Director
Suite 400, The Atrium
1200 'N' Street
P.O. Box 98922
Lincoln, Nebraska 68509-8922
Phone (402) 471-2186
FAX (402) 471-2909
website: www.deq.state.ne.us

April 5, 2006

Kris Riesenberg
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

RE: Council Bluffs Interstate System Improvements, Segments 1, 2, and 3 Tier 2, National Environmental Policy Act Documents, Douglas County, Nebr., and Pottawattamie County, Iowa, Iowa DOT Project No. IMN-29-3(62)54-13-78

Dear Mr. Riesenberg:

The Nebraska Department of Environmental Quality (NDEQ) has reviewed the above referenced project. As with any facility, permits may be required prior to beginning construction or operation. At minimum, you should be aware of the possible requirement for the following permits:

	Contact	Phone
Air Quality Construction	AQC Hotline	(800) 834-0474
Open Burning	Renee Hancock	(402) 471-6412
Integrated Solid Waste Management	Jim Harford	(402) 471-8308
Construction/Industrial Storm Water	Donna Luckner	(402) 471-1367

You should include statements regarding the following in your environmental assessment:

- Dust emissions must be controlled throughout the construction project (Title 129, Chapter 32).
- Using open burning for the disposal of trees, brush, vegetation and untreated lumber would need approval by the Director of NDEQ per Nebraska Air Quality Regulations, Title 129, Chapter 30).
- Building demolition would be subject to Nebraska Air Quality Regulations regarding both open burning (Title 129, Chapter 30) and asbestos (Title 129, Chapter 23). The Nebraska Department of Health and Human Services (HHS) regulations also contain asbestos requirements; contact Doug Gillespie at (402) 471-0548.

- Building debris and waste materials must be deposited at a licensed solid waste (or construction and demolition waste) management facility (per Integrated Solid Waste Management Regulations, Title 132).

You should also be aware of the following possible requirements:

--Asbestos Issues and Building Demolition or Renovation—
The project would be subject to the Asbestos regulation of both our office and the Department of Health and Human Services (HHS). You should be aware that HHS regulations are more stringent. At a minimum, because it is a demolition and/or renovation project that is not exempted, you are required to conduct an inspection for asbestos (using a certified inspector), legally remove the asbestos if it meets the regulatory criteria, and provide a demolition notification to NDEQ at least 10 days before commencing the demolition or renovation, per Nebraska Air Quality Regulations, Title 129, Chapter 23.

--Land Clearing and Construction Activities—
The project would need approval by the Director of NDEQ before any open burning could be used for the disposal of any land clearing and construction debris, per Nebraska Air Quality Regulations, Title 129, Chapter 30.

You must also deposit all the building debris and waste at a licensed solid waste or construction and demolition waste management facility, per Integrated Solid Waste Management Regulations, Title 132.

	Contact	Phone
Asbestos	Doug Gillespie, HHS	(402) 471-0548
Open Burning	Renee Hancock	(402) 471-6412
Integrated Solid Waste Mgmt	Morgan Leibrandt	(402) 471-1744

Until further along in the planning process, it is unknown whether there may be additional regulatory requirements. Additionally, we would recommend you check with the U.S. Army Corps of Engineers concerning the need for a 404 permit if any wetlands are impacted.

We strongly urge the project sponsors to make contact with the Department. It has been our experience that early and open communication helps facilitate the permitting process.

Should you have any questions, feel free to contact me at (402) 471-8697

Sincerely,

Hugh Stirts, PhD
NEPA Coordinator

U.S. Department of Housing and Urban Development
Iowa State Office
Federal Building
210 Walnut Street, Room 239
Des Moines, Iowa 50309-2155

March 21, 2006

Iowa Department of Transportation
Kris Riesenberg
Office of Location/Environment
800 Lincoln Way
Ames, IA 50010

Subject: Council Bluffs Interstate System Improvements, Segments 1, 2, and 3 Tier 2
National Environmental Policy Act (NEPA) Documents
Douglas County, Nebraska and Pottawattamie County, Iowa
Iowa DOT Project No. IMN-29-3(62)54-13-78

Dear Mr. Riesenberg:

We have received your inquiry to the subject location for Environmental Assessment Documentation and have reviewed such.

We do not contemplate any detrimental effects on any of our projects in the area under review.

Sincerely,

Thomas J. Wall

James P. Ryan, Director
Des Moines Multifamily
Program Center

RECEIVED

MAR 2 2 2006

OFFICE OF LOCATION & ENVIRONMENT

STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF NATURAL RESOURCES
Ann Bleed
Acting Director

March 20, 2006

IN REPLY TO:

Kris Riesenberg
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010-6993

RE: Council Bluffs Interstate System Improvements – Segment 1

Dear Ms. Riesenberg:

The Nebraska Department of Natural Resources has reviewed this proposed project and has the following comments:

Ground Water/Surface Water

No comments.

Floodplain Management

The proposed new bridge crossing the Missouri River immediately north of the existing bridge will impact the floodplain/floodway of the Missouri River in that bridge supports will tend to impede water flow. If bridge supports are designed to be built in the floodway in Nebraska's jurisdiction, a "No-rise" certification will be required to be completed and filed with the local authority. Any bridge supports in the floodplain (fringe) area will require a floodplain development permit at the local level.

For technical assistance on how to proceed with local permits and requirements, please call Paul Woodward of the Papio-Missouri River Natural Resources District at (402) 444-6222. According to our records, the local floodplain administrator for Omaha is:

Tom Blair
City Planning Department
1819 Farnam St.
Omaha, NE 68102
Telephone: (402) 444-4979

If you have any questions about this letter, please call me at (402) 471-3957.

Sincerely

Steve McMaster
Water Resources Planner III

cc: Tom Blair, Omaha

Iowa Department of Transportation

March 13, 2006

Stephen Chick
USDA
100 Centennial Mall North
Federal Building Room 152
Lincoln, NE 68508-3866

Project as described is cleared of Farmland Protection Policy Act (FPPA) concerns

State Conservationist 3/17/06 Date

Subject: Council Bluffs Interstate System Improvements, Segments 1, 2, and 3 Tier 2 National Environmental Policy Act (NEPA) Documents
Douglas County, Nebraska and Pottawattamie County, Iowa
Iowa DOT Project No. IMN-29-3(62)54—13-78

Dear Mr. Chick,

The Iowa Department of Transportation (Iowa DOT), in coordination with the Federal Highway Administration (FHWA), Nebraska Department of Roads (NDOR), and the Cities of Council Bluffs, Iowa, and Omaha, Nebraska, is initiating the Tier 2 NEPA documents for Segments 1, 2, and 3 of the Council Bluffs Interstate System Improvements.

The Iowa DOT has contracted with HDR Engineering and CH2M HILL to prepare the Tier 2 NEPA documents for the aforementioned segments. A Tier 1 Final Environmental Impact Statement (EIS) and Record of Decision were completed in 2005 with a system-wide scope covering a portion of the interstate system in Council Bluffs and Omaha. The Tier 1 EIS identified five segments of the interstate system for detailed evaluation in Tier 2. Based on prioritization and funding availability, Segments 1, 2, and 3 were selected for initial detailed study. FHWA and Iowa DOT have determined that the following NEPA evaluations will be performed for the individual segments:

An Environmental Assessment (EA) will be prepared for Segment 1
A Categorical Exclusion (CE) will be prepared for Segment 2
An EA will be prepared for Segment 3

As part of our early coordination efforts for the Tier 2 NEPA documents, we are alerting you to the initiation of this study and enclosing an early coordination package for your agency's input and comments in your area of expertise and/or jurisdiction by law. The input and comments will help prioritize the specific resources studies on the three segments. The attached information provides background material about the tiered process, the Tier 2 study area and the potential impacts associated with the project's Selected Alternative. Please submit any comments your agency has on the Segment 1, 2, and 3 projects to me.

Thank you for your participation in this project's Tier 1 activities. We look forward to continued coordination during Tier 2. Please feel free to call me at (515) 233-7977 if you have any questions or concerns about this project.

Sincerely,

Kris Riesenberg
IOWA DEPARTMENT OF TRANSPORTATION

cc: Donna Matulac – Iowa DOT - Office of Location & Environment,
John Carns – Iowa DOT – District 4
Len Sand – NDOR (w/enclosure)
Michael LaPietra – FHWA - (w/enclosure)

FEB 2 2 2006

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

February 17, 2006

Ref. No: IMN-29-3(62)54-13-78
Pottawattamie
Primary

Mr. Douglas W. Jones
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C: 020378055

Dear Doug:

Phase I/A Archaeological Evaluation for *Segment One* of the Council Bluffs Interstate System Improvements, City of Council Bluffs, Iowa / Pottawattamie County, Iowa

Enclosed for your information and review is the Phase I / A Archaeological Evaluation for Segment One of the above-mentioned federal-funded project. This project proposes series of road improvements along Interstate 80 in the City of Council Bluffs, Iowa. Please note that this evaluation only reviewed the Iowa side of Segment One. (The Iowa Side of Segment 1 of this project measures approximately 600 ft. in length.)

This evaluation reviewed current design plans for the project and conducted an extensive archival / records search. Along with a background search of the known and potential archaeological resources, a windshield assessment of the project corridor was also conducted. This evaluation reviewed 23 acres through the area of potential effect in Segment One of this project.

Do to disturbances caused by previous construction activities in the project area of Segment 1, the potential for intact archaeological deposits are considered low. Due to this no further archaeological investigation are warranted.

Based on the recommendations of this Phase I A archaeological evaluation, the determination for Segment 1 of this project is No Historic Properties Affected. If you concur with this determination, please sign the concurrence letter below. If you have any questions, please feel free to contact me.

Sincerely,

Matthew J. Donovan

Matt Donovan
Office of Location and Environment
Matt.Donovan@dot.state.ia.us

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
Kris Riesenberg- Location and Environment
Leah D. Rogers- Principal Investigator- Tallgrass

Concur:

Douglas W. Jones

SHPO Archaeologist

2/22/2006

Date:

Comments

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

14 September 2004

Leonard J. Sand
Planning & Project Development
Department of Roads
P.O. Box 94759
Lincoln, NE 68509-4759

Re: NH-80-9(889)
24th Street – Missouri River
Omaha, NE
Douglas Co.
H.P. #0302-108-01

Dear Mr. Sand:

We have reviewed the recommendation of Mr. Bozell regarding the above referenced project. We concur that the APE revisions in 2004 will have no effect on historic resources and that additional archaeological survey is not necessary.

Sincerely,

Terry L. Steinacher
H.P. Archaeologist

Concurrence:

L. Robert Puschendorf
Deputy NeSHPO

Cc: Goss

NEBRASKA STATE HISTORICAL SOCIETY

Archeology Division

Memo

To: Bob Puschendorf (NeSHPO)

From: Rob Bozell

CC: Brian Goss (HDR)

RE: NH-80-9 (889), 24th Street –Missouri River

Date: September 1, 2004

Bob,

Our office surveyed the above referenced Nebraska Department of Roads project in 2003 and submitted a report for Section 106 review. There have been some very minor APE revisions in 2004. I examined maps (attached) of the 2003 and 2004 APEs and feel that additional archeological survey is not warranted. The NDOR and their consultant (HDR, Omaha) would however like a comment from your office on our opinion that additional archeological work is not required. Please have staff review the attached maps and respond to:

Leonard Sand

Planning and Project Development

Nebraska Department of Roads

PO Box 94759

Lincoln, NE 68509

with a copy to:

Brian Goss

HDR

8404 Indian Hills Drive

Omaha NE 68114

IA-DOT -29-3(62) 54-18-78

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

7 August 2003

Leonard J. Sand
Environmental Analyst Supervisor
Department of Roads
P.O. Box 94759
Lincoln, NE 68509-4759

Re: NH-80-9(878)
24th Street - Missouri River
Douglas Co.
H.P. #0302-108-01

Dear Mr. Sand:

The cultural resources survey report (Bozell 2003) on the above referenced project has been reviewed by this office. We concur with the findings of the report that no archaeological, architectural, or historic context property resources will be effected by the proposed project.

Sincerely,

Terry Steinacher
H.P. Archaeologist

Concurrence:

L. Robert Puschendorf
Deputy NeSHPO

STATE OF NEBRASKA

Rec'd 8/22

DEPARTMENT OF ROADS
John L. Craig, *Director*
1500 Highway 2
PO Box 94759
Lincoln NE 68509-4759
Phone (402)471-4567
FAX (402)479-4325
www.dor.state.ne.us

Mike Johanns
Governor

July 23, 2003

Mr. L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historical Society
PO Box 82554
Lincoln NE 68501-2554

RE: NH-80-9(878), 24th Street - Missouri River, Douglas County, CN 22069

Dear Mr. Puschendorf:

Enclosed are documents regarding the referenced project(s), including archeological survey(s), historic status of bridge(s) if applicable, and recommendations. Please review these with regard to Section 106 of the National Historic Preservation Act, and inform this office of the review outcome.

If you have any questions or wish additional information, please call.

Sincerely,

Leonard J. Sand

Leonard J. Sand
Environmental Analyst Supervisor
Project Development Division

LJS/PDV1-DO

Enclosures

Highway Archeology Program
Project Survey Summary

Project Number: NH-80-9 (878) **Project Name:** 24th Street-Missouri R

County: Douglas **Nearest Water:** Missouri River

Legal Description: Center Section 34; T15N R13E

Maps Used: Project study air photo

Project Character: Interstate Rehabilitation **Project Length/Area:** .8m.9.6a

Survey Date: July 2, 2003 **Survey Length/Area:** .8m.9.6a

Name(s) of Survey Personnel: Rob Bozell

Person-Hours of Fieldwork: 2.5

Ground Cover (% - Visibility): Urban (25-50%). This project area has been extensively modified by urban development and previous I-80 construction

Survey Interval/Provisions: 75 m wide transect (at 25m intervals) outside of state ROW on both sides of I-80

Rationale for Nonsurveyed Area(s): all of project surveyed

Result of Survey:

x **No Cultural Resources Discovered**

___ **Site(s) Discovered** **[Number(s)** ___ **]**

___ **Other (explain)** ___

Project Effect on Archeological/Other Properties Potentially Eligible for the *National Register of Historic Places*:

x **None**

___ **Other (explain)** ___

Are Further Cultural Resources Investigations Warranted? ___ **Yes** x **No**

Stipulations/Exceptions to Survey Results: Evaluate Buried Cultural Remains if Encountered (Nebraska Department of Roads Standard Specifications 107.10)

Comments: This project was previously submitted for SHPO review but the length has been extended to 24th Street from 16th Street

Prepared By: R. Bozell **Date:** July 23, 2003


N
W
E
S
500
0
500 Feet
Scale

MAY 15 2003

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097
515-239-1726 FAX

May 13, 2003

Ref. No: IMN-29-3(62)5-13-78
Pottawattamie
Primary

Mr. Douglas W. Jones
Review and Compliance
Bureau of Historic Preservation
State Historical Society of Iowa
600 East Locust
Des Moines, IA 50319-0290

R&C 020378055

Dear Doug:

I-29 & I-80 Archaeological Assessment: Council Bluffs, Iowa

Enclosed for your information and review is the Archaeological Assessment for the above-mentioned federal funded project. This assessment reviewed a 22-mile corridor involving Interstate-29 and Interstate-80 in Council Bluffs, Pottawattamie County, Iowa. Please note that this archaeological assessment only reviewed the Iowa side of the proposed project corridor.

This assessment was conducted using an extensive archival / records search, along with an evaluation of the known and potential archaeological resources and a windshield assessment of the project corridor.

At the present, there are no major known site locations of concern, however, those locations retaining some archaeological potential that have not been previously surveyed or have not been destroyed by modern construction, would warrant Phase I archaeological investigations.

Once these Phase I investigations have been completed, they will be forwarded to your office for review and concurrence. If you concur with the finding of this assessment, please sign the concurrence line below. If you have any questions concerning this report or project, please feel free to contact me.

Sincerely,

Matthew J. Donovan

MJFD
Enclosure
cc: John Selmer- Engineer- District 4
✓Kris Riesenberg- Location and Environment
Leah D. Rogers- Principal Investigator- Tallgrass

Matt Donovan
Office of Location and Environment
Matt.Donovan@dot.state.ia.us

Concur:

Douglas W. Jones 5/19/03

SHPO Archaeologist Date:
Comments

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

5 March 2003

Leonard J. Sand
Environmental Analyst Supervisor
Department of Roads
P.O. Box 94759
Lincoln, NE 68509-4759

Re: NH-80-9(878)
16th Street - Missouri River
Douglas Co.
H.P. #0302-108-01

Dear Mr. Sand:

The cultural resources survey report (Bozell 2003) on the above referenced project has been reviewed by this office. We concur with the findings of the report that no archaeological, architectural, or historic context property resources will be effected by the proposed project.

Sincerely,

Terry Steinacher
H.P. Archaeologist

Concurrence:

L. Robert Puschendorf
Deputy NeSHPO

STATE OF NEBRASKA

DEPARTMENT OF ROADS
John L. Craig, *Director*
1500 Highway 2
PO Box 94759
Lincoln NE 68509-4759
Phone (402)471-4567
FAX (402)479-4325
www.dor.state.ne.us

Mike Johanns
Governor

February 25, 2003

Mr. L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historical Society
PO Box 82554
Lincoln NE 68501-2554

RE: NH-80-9(878), 16th Street - Missouri River, Omaha, Douglas County, CN 22069

Dear Mr. Puschendorf:

Enclosed are documents regarding the referenced project(s), including archeological survey(s), historic status of bridge(s) if applicable, and recommendations. Please review these with regard to Section 106 of the National Historic Preservation Act, and inform this office of the review outcome.

If you have any questions or wish additional information, please call.

Sincerely,

Leonard J. Sand
Environmental Analyst Supervisor
Project Development Division

LJS/PDV1-DO

Enclosures

Highway Archeology Program
Project Survey Summary

Project Number: NH-80-9(878) **Project Name:** 16th Street-Missouri River

County: Douglas **Nearest Water:** Missouri River

Legal Description: North ½ Section 35 and northeast ¼ of Section 34; T15N R13E

NOTE: This form only applies to the Nebraska portion of the project.

Maps Used: Study area corridor map supplied by the Iowa DOT

Project Character: Interstate rehabilitation (4 to 6 lane) **Project Length/Area:** 1.25m/15ac

Survey Date: 2-12-2003 **Survey Length/Area:** 1.25m/15ac

Name(s) of Survey Personnel: Rob Bozell

Person-Hours of Fieldwork: 4 hours

Ground Cover (% - Visibility): Parkland and urban (25-50%). This project area has been extensively modified from its original setting by construction of I-80, the Henry Doorly Zoo, neighborhoods and the Omaha Botanical Gardens.

Survey Interval/Provisions: 75m wide transect (at 25 m intervals) outside of state ROW on both sides of I-80

Rationale for Nonsurveyed Area(s): All project areas surveyed.

Result of Survey:

x **No Cultural Resources Discovered**

___ **Site(s) Discovered** [Number(s) _____]

___ **Other (explain)** _____

Project Effect on Archeological/Other Properties Potentially Eligible for the *National Register of Historic Places*:

x **None**

___ **Other (explain)** _____

Are Further Cultural Resources Investigations Warranted? ___ Yes x No

Stipulations/Exceptions to Survey Results: Evaluate Buried Cultural Remains if Encountered (Nebraska Department of Roads Standard Specifications 107.10)

Comments: Most of this undertaking is in Iowa. The Iowa DOT will arrange for archeological survey on the Iowa side as well as architectural survey in Nebraska and Iowa.

Prepared By: R. Bozell **Date:** Feb 24, 2003

The Historical Division of the Department of Cultural Affairs

STATE HISTORICAL SOCIETY OF IOWA

Where past meets future

March 12, 2002

In reply refer to:
R&C#: 020378055

Matthew Tondl, P.E.
HDR Engineering, Inc.
8404 Indian Hills Drive
Omaha, Nebraska 68114-4049

American Gothic House
Eldon

Blood Run NHL
Larchwood

Centennial Building
Iowa City

Matthew Edel Blacksmith Shop
Marshalltown

Abbie Gardner Cabin
Arnolds Park

Iowa Historical Building
Des Moines

Montauk Governor's Home
Union Sunday School
Clermont Museum
Clermont

Plum Grove Governor's Home
Iowa City

Toolesboro Indian Mounds
Toolesboro

Western Historic Trails Center
Council Bluffs

RE: FHWA – POTTAWATTAMIE COUNTY – CITY OF COUNCIL BLUFFS – IMN-29-3(62)54—13-78 – COUNCIL BLUFFS INTERSTATE SYSTEM IMPROVEMENTS – I-80, I-29, I-480 FROM US HWY 6 (KANESVILLE BLVD) TO IA HWY 192 (16TH ST.) – HDR – PREPARATION OF A TIERED ENV. IMPACT STATEMENT

Dear Mr. Tondl,

Thank you for notifying our office about the above referenced proposed project. Unfortunately, our staff will be unable to attend the meeting on April 30. However, we understand that these projects will be federal undertakings and will need to comply with Section 106 of the National Historic Preservation Act. We look forward to consulting with you and/or the Iowa Department of Transportation on the Area of Potential Effects for these proposed projects and whether these projects will affect any significant historic properties under 36 CFR Part 800.4. We will need the following types of information for our review:

- The Area of Potential Effect (APE) for this project needs to be adequately defined (36 CFR Part 800.16 (d)).
- Information on what types of cultural resources are or may be located in the APE (36 CFR Part 800.4).
- The significance of the historic properties in the APE in consideration of the National Register of Historic Places Criteria.
- A determination from the responsible federal agency of the undertaking's effects on historical properties within the APE (36 CFR Part 800.5).

Also, the responsible federal agency will need to identify and contact all potential consulting parties that may have an interest in historic properties within the project APE (36 CFR 36 Part 800.2 (c)).

Please reference the Review and Compliance Number provided above in all future submitted correspondence to our office for this project. We look forward to further consulting with you, the Iowa Department of Transportation, and the Federal Highway Administration on this project.

IOWA HISTORICAL BUILDING
600 East Locust • Des Moines, Iowa 50319-0290
Phone: (515) 281-6412 • Fax: (515) 242-6498 or (515) 282-0502
www.iowahistory.org

Should you have any questions please contact me at the number below.

Sincerely, Douglas W. Jones

Douglas W. Jones, Archaeologist
Community Programs Bureau
(515) 281-4358

cc: Gerry Kennedy, FHWA
Randall Faber, Office of Environmental Services, IDOT
Steve Larson, IDOT

APPENDIX C

PROPOSED SECTION 4(f) *DE MINIMIS* IMPACT FINDING

APPENDIX C
PROPOSED SECTION 4(f) *DE MINIMIS* IMPACT FINDING

The Federal Highway Administration (FHWA) issued guidance on December 13, 2005, for determining *de minimis*[1] impacts on Section 4(f) resources. This guidance came from an amendment of existing Section 4(f) legislation through adoption of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)[2] to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This is the first substantive revision of Section 4(f) legislation since passage of the U.S. Department of Transportation Act of 1966. This revision of Section 4(f) legislation provides that once FHWA determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. In other words, although some impacts may be unavoidable (and would be minimized or mitigated), avoidance alternatives would not need to be developed if a *de minimis* impact determination is made.

Additional guidance on Section 4(f) was published in the Federal Register on July 27, 2006, as a notice of proposed rulemaking for implementing Section 6009 of SAFETEA-LU (71 FR 42611). The notice included proposed regulations under 23 CFR 774 addressing *de minimis* applicability; 23 CFR 774.5(b)(2) specifies a requirement for public notice and opportunity for public review of a *de minimis* impact finding for a park, recreation area, or wildlife or waterfowl refuge. The Segment 1 Project will comply with the aforementioned proposed requirement.

Section 1.1 of this Section 4(f) *De Minimis* Impact Finding provides background information on the project and the Section 4(f) properties in the project area. Sections 1.2 and 1.3 address impacts and mitigation, respectively, for two Section 4(f) properties evaluated for *de minimis* impacts. Section 1.4 introduces the process proposed for review of and comment on this *de minimis* impact finding.

1.1 BACKGROUND

The proposed action for Segment 1 of the Council Bluffs Interstate System (CBIS) Improvements Project is limited to improvements to roadway and bridge design on the Nebraska section of Interstate 80 (I-80) and the I-80 Missouri River bridge as well as a small portion of I-80 in Iowa. The preliminary impact area where the improvements are planned was evaluated for the presence of potential Section 4(f) resources. The preliminary impact area consists of the approximate

---

1 "Black's Law Dictionary (8th ed. 1999) defines *de minimis* as 1. Trifling, minimal. 2. (Of a fact or thing) so insignificant that a court may overlook it in deciding an issue or case. 3. *De Minimis Non Curat Lex*, The law does not concern itself with trifles." as cited in FHWA, December 19, 2005, Questions and Answers on the Application of the Section 4(f) *De Minimis* Impact Criteria.

2 Section 6009(a) of SAFETEA-LU, Public Law 109-59, amended existing Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 303. SAFETEA-LU replaces the term "Section 4(f)" with "Section 303" (referring to 49 USC 303, the current section of the Federal code dealing with "Section 4(f)" issues). However, this *de minimis* impact finding retains the term "Section 4(f)" in keeping with current guidance from FHWA and the state transportation departments.

right-of-way (ROW) needs of the preferred alternative based on the preliminary design completed to date and includes the area where construction activities could occur.

The existing interstate corridor through Segment 1 is constrained by physical as well as natural features. Parks and recreational areas as well as residential areas in Omaha are located close to the existing ROW. Consequently, the preliminary design focused on trying to remain within the existing ROW to the maximum extent possible. The use of retaining walls and other design features was considered for expanding capacity while minimizing the need for new ROW. The design also had to account for existing overpasses and underpasses in Nebraska, and it had to be determined whether those structures would also need to be rebuilt.

Deer Hollow Park and Omaha's Henry Doorly Zoo (Zoo) in Omaha and the Western Historic Trails Center (WHTC) in Council Bluffs are Section 4(f) resources with components of their land within the preliminary impact area. However, the WHTC is a multiple-use facility with no recreational component within the preliminary impact area. Consequently, only Deer Hollow Park and the Zoo were further evaluated for Section 4(f) impacts.

Deer Hollow Park has been identified as a remnant of the historic Omaha Park and Boulevard System, which is a system of green space and recreational areas joined by tree-lined boulevards. The system is potentially eligible for listing on the National Register of Historic Places (NRHP) as a contributing resource to an Omaha historic park and boulevard district. The Zoo is a 155-acre publicly owned zoo that evolved from the small Riverview Park Zoo, established in 1894, and is currently on Riverview Park land owned by the Omaha Parks, Recreation, and Public Property Department and leased by the Zoo. In the Segment 1 Environmental Assessment (EA), Sections 3.8.1 and 3.8.3 provide additional information on the existing conditions of Deer Hollow Park and the Zoo as well as property maintained by the Omaha Parks, Recreation, and Public Property Department that is considered part of the original Deer Park Boulevard system.

1.2 IMPACTS

Both Deer Hollow Park and the Zoo exist north and south of I-80, with their boundaries adjacent to I-80. Several avoidance alternatives evaluated in the Tier 1 Final Environmental Impact Statement for the Council Bluffs Interstate System Improvements Project (Tier 1 EIS) were analyzed, but none were determined to be prudent alternatives to avoiding Section 4(f) properties. Although these Section 4(f) properties cannot be avoided by the additional lanes planned for Segment 1, impacts were minimized in the design process to the extent practicable without compromising the ability to meet the project purpose and need as well as safety standards.

1.2.1 Deer Hollow Park

To minimize acquisition of Deer Hollow Park property that occurs at a lower elevation than I-80, the Nebraska Department of Roads (NDOR) considered the use of a steeper slope with a guardrail. However, some Deer Hollow Park property would still need to be acquired. Consequently, NDOR decided on a typical safety section because it was the most prudent in terms of safety and would have only a minimal impact on Deer Hollow Park and the Omaha Park and Boulevard System.

The improvements for Segment 1 of the CBIS Improvement Project will result in a physical encroachment on property maintained by the Omaha Parks, Recreation, and Public Property Department in Deer Hollow Park and within the original Deer Park Boulevard system. Figure C-1 shows the boundary of Deer Hollow Park, the original Deer Park Boulevard system located outside current interstate ROW, and the preliminary impact area. Only narrow strips of land outside the existing ROW would be needed for the Segment 1 Project. A total of 0.27 acre

of the 7.92-acre Deer Hollow Park property would be permanently incorporated into the interstate system; this equates to 3.4 percent of the total Deer Hollow Park area. In addition, 0.07 acre of the remnants of the Omaha Park and Boulevard System that is still maintained by the Omaha Parks, Recreation, and Public Property Department would also be permanently incorporated into the interstate system.

The planned interstate improvements would have a minor impact on Deer Hollow Park and will not adversely impact the activities, features, attributes, and functions of Deer Hollow Park that qualify the park for protection under Section 4(f). The land to be incorporated does not include any of the developed or recently renovated park facilities. Ten cottonwoods that are approximately 25 feet tall were recently planted in two tree rows in Deer Hollow Park and are within the preliminary impact area. A storm drain is present between the two tree rows immediately north of the current ROW fence. The portion of the park that would be affected does not support recreational activity but does supply green space to the urban surrounding area. The Project would have a *de minimis* impact on the park because it only affects a small area of the park. In addition, the Nebraska State Historic Preservation Office has concurred with a determination that the small amount of land to be incorporated into interstate ROW would result in no effect on the historic Omaha Park and Boulevard System. Based on these findings, FHWA determined that this is a *de minimis* impact.

1.2.2 Omaha's Henry Doorly Zoo

To reduce the use of Zoo property on the north and south sides of I-80, the design for the interstate adjacent to the Zoo includes concrete retaining walls and barriers. The property boundary of the Zoo north and south of I-80 as well as the preliminary impact area is shown in Figure C-2. Only narrow strips of land outside the existing ROW would be needed for the Segment 1 Project. A total of 0.89 acre of the 155-acre Zoo property (the land is part of Riverview Park land leased to the Zoo by the Omaha Parks, Recreation, and Public Property Department) would be permanently incorporated into the interstate system as ROW or a permanent easement; this equates to approximately 0.6 percent of the total area of the Zoo. Approximately 0.29 acre would be from Zoo property north of I-80 and 0.60 acre would be from Zoo property south of I-80.

The planned interstate improvements would have a minor impact on the Zoo and will not adversely impact the activities, features, attributes, and functions of the Zoo that qualify it as a recreational area protected under Section 4(f). The land to be incorporated does not include any portion of animal exhibits, walking trail, the Zoo's railroad, or other recreational features. The Project would only require small areas of land north and south of I-80. Based on these findings, FHWA determined that this is a *de minimis* impact.

1.3 MITIGATION

Both Section 4(f) properties directly affected by the Segment 1 Project are located in Nebraska. Consequently, NDOR has initiated coordination with the agencies administering the properties to discuss potential park impacts and determine suitable mitigation.

As the project design develops, NDOR will continue to work with the Omaha Parks, Recreation, and Public Property Department to identify suitable mitigation for the potentially impacted trees and fence at the current Deer Hollow Park boundary north of I-80 and on land maintained by the Omaha Parks, Recreation, and Public Property Department that was part of the original Omaha Park and Boulevard System. The existing ROW fence would be relocated in areas adjacent to Deer Hollow Park and remnants of the Deer Park Boulevard system that would be incorporated into interstate ROW. Areas disturbed by construction equipment would be graded and reseeded.

The stormwater drainage system would likely need to be replaced or improved as a result of the Segment 1 Project.

For the Zoo, the construction impact area would occur near the Zoo's flagpole and fence to the south of I-80. NDOR will continue to work with the Omaha Parks, Recreation, and Public Property Department and the Zoo to relocate, and replace if necessary, the flagpole and fence.

1.4 IMPACT FINDING REVIEW PROCESS

This proposed *de minimis* impact finding is being made available for public and agency review as required under proposed 23 CFR 774.5(b)(2), implementing Section 6009 of SAFETEA-LU (71 FR 42611). Public and agency comments on the proposed *de minimis* impact finding, either through review of the EA or participation at the public hearing on the EA, will be analyzed. If the analysis introduces no significant controversy, the *de minimis* impact finding would be included with the FONSI (assuming no significant impacts are introduced through agency and public review) as an EA appendix and signed by FHWA. If comments require modification, the proposed *de minimis* impact finding would be revised and included within the FONSI as an EA appendix and signed by FHWA. If there is significant controversy, the proposed *de minimis* impact finding will be re-evaluated to determine if the application is valid. Three letters to the administering agencies are included in Appendix B. The letters result from preliminary discussions between park and zoo officials and NDOR, and seek concurrence for the proposed *de minimis* impact finding. Along with public input, the administering agency needs to concur with the proposed *de minimis* finding in order for it to be finalized.

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Deer_Hollow_Park.mxd\august06\jcm

Sources:
1. Aerial Photography - MAPA, 2004
2. Deer Hollow Park and Maintained Park Boundaries - HDR, 2006

400 200 0 400
Feet
Scale

Iowa Department of Transportation

NDOR Nebraska Department of Roads

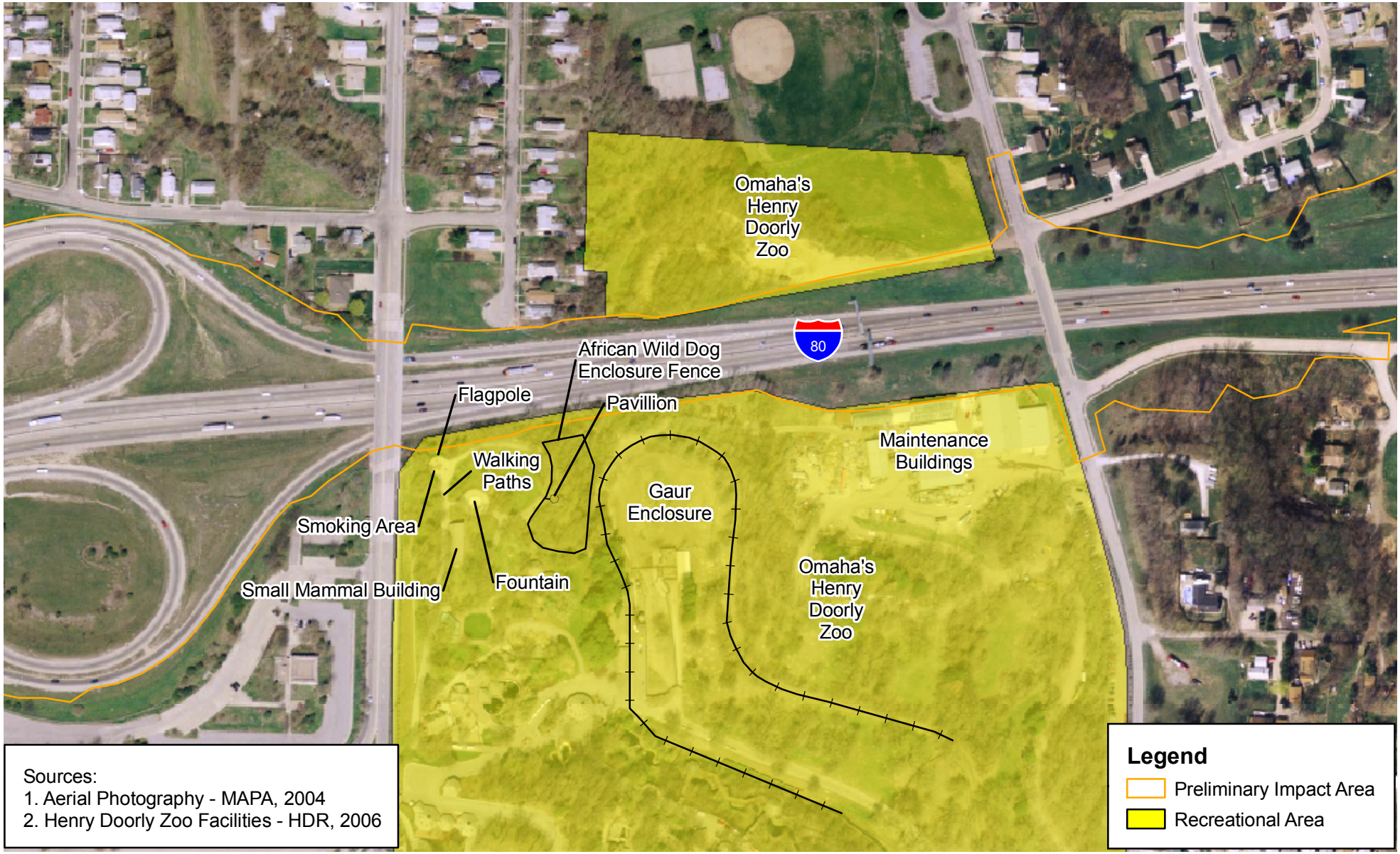
Deer Hollow Park
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
August 2006

FIGURE
C-1

Z:\Projects\IDOT\339-134_CB_Interstate\Software\ArcGIS\ArcView81\MXD\CBIS_Segment1_Henry_Doorly_Zoo.mxd\august06\jcm



300 150 0 300
Feet
Scale

Iowa Department of Transportation

NDOR Nebraska Department of Roads

Omaha's Henry Doorly Zoo
Segment 1

Council Bluffs Interstate System Improvements Project
Council Bluffs, IA and Omaha, NE

DATE
August 2006

FIGURE
C-2

APPENDIX D

NOISE STUDY REPORTS

NOISE STUDY TECHNICAL MEMORANDUM

(*For the portion of Segment 1 located in Iowa)*

Council Bluffs Interstate System Improvements
Omaha/Council Bluffs Metropolitan Area

Pottawattamie County, Iowa

Prepared for:

Iowa Department of Transportation

Prepared by:

HDR, Inc.
8404 Indian Hills Drive
Omaha, NE 68114

April 2006

CONTENTS

Chapter Page

TABLES

Table Title Page

NOISE STUDY REPORT

The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and evaluation of noise from traffic on new or modified highways (FHWA, June 1995). These criteria and procedures are set forth in Title 23 of the Code of Federal Regulations (CFR), Part 772 (23 CFR 772). The Iowa Department of Transportation (Iowa DOT) also regulates noise with its Noise Policy No. 500.07 *Highway Traffic Noise Analysis and Abatement* (Iowa DOT, April 2003). Iowa DOT regulations incorporate FHWA Policy.

The purpose of this noise report is to identify current noise levels in the study area and evaluate the potential for and quantify the impacts of new alignments and roadway interchanges relative to the Federal Noise Abatement Criteria noise level of 67 dBA for residential dwellings and 72 dBA for commercial uses, both on an L_{eq} basis.

Iowa DOT, Nebraska Department of Roads (NDOR), and FHWA are proposing improvements to the interstate system in the Omaha/Council Bluffs metropolitan area. These improvements for the Project along Interstate 80 (I-80), Interstate 480 (I-480), and Interstate 29 (I-29) include approximately 18 mainline miles of interstate and 14 interchanges.

Segment 1 of the Project is located primarily in Nebraska, along I-80 from the Missouri River westward nearly to the I-480/I-80/U.S. 75 system interchange and partly in Iowa along I-80 from the Missouri River eastward nearly to the I-80/I-29 West System interchange. This noise study evaluates the portion of Segment 1 located in Iowa. The portion of Segment 1 in Nebraska is evaluated in a separate report by URS Corporation.

A. NATURE OF NOISE

Noise is defined as unwanted sound. Sound is the sensation produced in the hearing organs when waves are created in the surrounding air by the vibration of some material body. The impact that sound waves have on the hearing organs is dependent on the pressure generated by the wave. The unit of measure of sound pressure level in common use is the decibel (dB). A decibel can be simply defined as a logarithmic function of the actual sound pressure. The logarithmic function is used because the range of sound pressures is too great to be accommodated on a linear scale. The reference for sound pressure measurements is 0 dB which corresponds to 0.0002 microbars. This represents the weakest sound that can be heard by a person with very good hearing in an extremely quiet place. A sound level of 100 decibels corresponds to a pressure of 20 microbars, or 100,000 times the pressure that corresponds to 0 decibels.

B. MEASUREMENT OF SOUND

The sound-level meter is the basic instrument of noise measurement. The American National Standards Institute (ANSI S1.4, 1971) specifies that sound level meters have the capability of measuring three alternate frequency response characteristics designated as A, B, and C. The

FHWA has specified that noise be predicted and evaluated in decibels weighted with the A-level frequency response (FHWA, June 1995); this unit of measure is referred to as dBA. Measurements in dBA incorporate the ear's reduced sensitivity to both low frequency and very-high frequency noises, thereby correlating well with our subjective impression of loudness. The range of sound pressure levels most frequently encountered in evaluating traffic-generated noise on highways is 50 to 95 dBA. The following table displays noise levels common to our everyday activities.

Table 1
Common Exterior Noise Levels

Activity/Distance	Noise Level (dBA)
Rock Band at 16.4 ft.	110
Jet Flyover at 984.3 ft	105
Gas Lawn Mower at 3.3 ft.	95
Diesel Truck at 49.2 ft.	85
Same Truck at 108.3 ft.	80
Gas Lawn Mower at 98.4 ft.	70
Normal Speech at 3.3 ft.	65
Birds Chirping	50
Leaves Rustling	40
Very Quiet Soft Whisper	30
Threshold of Hearing	0

C. 23 CFR PART 772 STANDARDS

23 CFR Part 772 was written by FHWA. Its purpose is to provide procedures for noise studies, to supply noise abatement criteria, to furnish noise abatement measures to help protect the public health and welfare, and to establish requirements for traffic noise information to be given to those officials who have planning and zoning authority in the project area.

23 CFR 772 contains noise abatement criteria that are based on the equivalent level (L_{eq}) noise descriptor. $L_{eq}(h)$ is the equivalent steady state sound level which during the hour under consideration contains the same acoustic energy as the time-varying traffic sound level during that same hour. Table 2 shows the upper limits of desirable hourly L_{eq} noise levels which are part of the noise abatement criteria established by 23 CFR 772. Any noise levels that approach or exceed this criterion would not be desirable and would be referred to as noise impacts.

The selection and analysis of all individual noise sensitive receivers is based on the data included in Table 2. Most areas come under Activity Category "B" or "C". Activity "C" mostly pertains to commercial land use or business offices, but would not necessarily include such things as a factory, machine shop or a service station. Also, storage buildings or

warehouses are not usually considered to be noise sensitive. Primary consideration is to be given to exterior areas; therefore, all noise levels referred to in this study are exterior noise levels unless otherwise stated. Activity Category "E" is not normally used since interior noise depends on the type of windows, doors or wall structures of each building; however, sometimes a specific receiver might warrant its use.

Iowa DOT's *Highway Traffic Noise Analysis and Abatement Policy* further defines a traffic noise impact as occurring when the predicted traffic noise levels approach or exceed the noise abatement criteria or when the predicted traffic noise levels substantially exceed the existing noise levels (Iowa DOT, April 2003). A measured or predicted traffic noise level of one dBA less than the noise abatement criteria in the FHWA standards constitutes approaching the noise abatement criteria. Also, a predicted traffic noise increase of 10 dBA or more above the existing noise level substantially exceeds the existing noise level.

Table 2
Federal Noise Abatement Criteria
Hourly A-Weighted Sound Level

Activity Category	Hourly Noise Levels $L_{eq}(h)$ dBA	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, play grounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	—	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR Part 772, FHWA.

D. NOISE PREDICITION METHOD

Traffic noise levels estimated for this study reflect "peak hour" noise levels and are predicted in hourly L_{eq} dBA. The L_{eq} descriptor is reliable for low volume as well as high volume roadways, is simpler in most instances for highway designers to work with, and is more flexible in terms of permitting noise levels from different sources to be included in the analysis of the total ambient noise.

The FHWA Highway Traffic Noise Model (TNM) Version 2.5 was used for establishing predicted L_{eq} dBA noise levels for the existing, no-build, and build alternatives. This model was developed and approved for use by FHWA (FHWA, June 1995). The procedures included in the FHWA model permit analysis of variations in traffic noises in terms of traffic parameters, roadway and observer characteristics. Terrain lines and a ground zone (depicting the Missouri River) are examples of some of the refinements included in the TNM modeling input files.

1. Traffic Parameters

Tables 3-5 show the Peak PM traffic volumes used on this project. Traffic noise levels were provided by Iowa DOT and entitled "West System Interchange – Traffic Capacity Analysis" (dated May 2005 and July 2005). Heavy trucks include all vehicles having three or more axles, generally having a gross vehicle weight greater than 26,000 pounds. Medium trucks include all vehicles having two axels and six wheels, generally having a gross vehicle weight greater than 10,000 pounds but less than 26,000 pounds. The vehicle mix for Segment 1 included 86.3% Autos, 2.0% Medium Trucks, 10.7% Heavy Trucks, 0.2% Buses, and 0.8% Motorcycles.

Table 3 - 2003 Peak AM Existing Traffic Volumes

Segment	2005 (estimate)					
	Peak Hour Volume	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
Vehicle Percentage		86.3%	2.0%	10.7%	0.2%	0.8%
Eastbound I-80 West of I-29	3926	3388	79	420	9	31
Eastbound I-80 East of I-29	2912	2513	58	312	6	23
Ramp EB I-80 to NB I-29	1014	875	20	108	2	8
Ramp SB I-29 to WB I-80	691	596	14	74	2	6
Westbound I-80 East of I-29	2340	2019	47	250	5	19
Westbound I-80 West of I-29	3926	3388	79	420	9	31

Table 4 - 2030 Peak AM No-Build Traffic Volumes

Segment	2030 NO-BUILD					
	Peak Hour Volume	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
Vehicle Percentage		86.3%	2.0%	10.7%	0.2%	0.8%
Eastbound I-80 West of I-29	5930	5118	119	635	13	47
Eastbound I-80 East of I-29	4620	3987	92	494	10	37
Ramp EB I-80 to NB I-29	1310	1131	26	140	3	10
Ramp SB I-29 to WB I-80	950	820	19	102	2	8
Westbound I-80 East of I-29	4510	3892	90	483	10	36
Westbound I-80 West of I-29	4600	3970	92	492	10	37

Table 5 - 2030 Peak AM Build Traffic Volumes

Segment	2030 BUILD					
	Peak Hour Volume	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
Vehicle Percentage		86.3%	2.0%	10.7%	0.2%	0.8%
Eastbound I-80 West of I-29	6500	5610	130	696	14	52
Eastbound I-80 East of I-29	5450	4703	109	583	12	44
Ramp EB I-80 to NB I-29	1050	906	21	112	2	8
Ramp SB I-29 to WB I-80	1060	915	21	113	2	8
Westbound I-80 East of I-29	4230	3650	85	453	9	34
Westbound I-80 West of I-29	5290	4565	106	566	12	42

A design speed of 55 miles per hour (mph) was used on the mainline alignment.

2. Adjacent Land Use

The majority of land use throughout the project area is undeveloped. There is one commercial receptor (Warren Industries, Inc.) north of the mainline alignment, east of the Missouri River.

3. Noise Measurements

Noise level data was collected at one location in Segment 1 on January 19, 2006. The monitored data was collected with a Type I noise meter. The duration of the monitoring was 3 readings of 10 minutes each. The meter was calibrated before the data collection period and the calibration was checked following the period, to ensure that the meter was measuring correctly. The location of the monitoring site is displayed on Figure 1 in Attachment A. Noise monitoring results are shown in Table 6.

The noise monitoring location was selected based on location to I-80, and thus the highway noise source. Since there is only one potential receptor in the project area, one location was monitored within Segment 1 in Iowa. M1 is located north of I-80 at Warren Industries, Inc.

Table 6
Noise Measurements

Monitoring Location Number	Date	Start Time	Stop Time	Distance to Nearest Existing I-80 Centerline (ft)	Measured Leq (dBA)	TNM Model Leq (dBA)
M1	01/19/06	3:53 pm	4:03 pm	≈ 230	67	68
	01/19/06	4:04 pm	4:14 pm		66	68
	01/19/06	4:15 pm	4:25 pm		67	68

4. Traffic Noise Prediction

Table 7 lists the modeled receiver along Segment 1. The modeled noise levels for the existing and future design year for both the Build Alternative and the No-Build Alternative (2005 and 2030 traffic volumes used) are also shown in the table. The computed noise levels are compared to the noise abatement criteria. Figure 1 in Attachment A depicts the modeled noise receiver.

Table 7
Predicted Noise Levels (Leq) at Receivers
Segment 1

Receptor ID	Residential/ Commercial/ Recreational	2005 Existing Noise Level (dBA)	2030 No-Build Noise Level (dBA)	2030 Build Noise Level	Noise Abatement Criteria (dBA)	Predicted Increase[1] (dBA)	Approaches or Exceeds NAC in 2030 Build
M1	Commercial	68	70	70	71	2	No

[1] Predicted increase is difference between Build and Existing Noise levels.

5. Traffic Noise Impacts

Iowa DOT *Highway Traffic and Noise Abatement Policy* (Iowa DOT, April 2003) considers that an impact occurs and abatement measures will be considered for receivers if:

1. Future noise levels approach or exceed 67 dBA for residences in Category B, and 72 dBA for commercial receivers in Category C. Approach is defined as one decibel less than the noise abatement criteria level for a particular activity category.

2. Future build noise levels are 10 decibels or more above the existing noise levels.

Table 8 summarizes the results by impact type and year. Analysis results indicate that no traffic noise impacts are predicted to occur under the Build alternative.

Table 8
Summary of Receptor Impacts

NAC Class	Receptor Types		2005 Existing	2030 No-Build	2030 Build
C	Commercial	Meet or Exceed Standard	0	0	0
		Approach Standard	0	0	0

E. NOISE ABATEMENT MEASURES

Noise abatement measures are considered where predicted traffic noise levels approach or exceed the noise abatement criteria, or when the predicted traffic noise levels substantially exceed the existing noise levels. As shown in Table 8, no impacts are predicted to occur as a result of this project and therefore, noise abatement measures need not be evaluated.

F. CONSTRUCTION NOISE AND VIBRATION

The construction of the proposed project would result in temporary noise and vibration increases within the project area. The evaluation and control of construction noise and vibration must be considered as well as traffic noise. This project is bordered by just one commercial receiver and no residential receivers. This receiver is also a concern for impacts caused by construction noise and vibration.

The following are basic categories for mitigation measures for construction noise. Due to the interrelatedness of construction noise and vibration, some of these measures will also apply for vibration resulting from construction activities. At the time of construction, the project manager will determine appropriate mitigation measures.

Design Considerations: This includes measures in the plans and specifications to minimize or eliminate adverse impacts. The design for this project includes the alteration of the alignment through the existing corridor. The proposed roadway and its proximity to noise sensitive receivers were factors during the initial design considerations.

Community Awareness: It is important for the public to be made aware of the possible inconvenience and to know its approximate duration so they can plan their activities accordingly. It is the policy of Iowa DOT that information concerning the upcoming project be submitted to all local news media.

Source Control: This involves reducing noise impacts from construction by controlling the noise emissions at their source. This can be accomplished by specifying proper muffler systems, either as a requirement in the plans and specifications on this project or through an established local noise ordinance requiring mufflers. Contractors generally maintain proper muffler systems on their equipment to ensure efficient operation and to minimize noise for the benefit of their own personnel as well as the adjacent receivers.

Site Control: Site control involves the specification of certain areas where extra precautions should be taken to minimize construction noise. One way to reduce construction noise impacts at sensitive receivers is to operate stationary equipment, such as air compressors or generators, as far away from the sensitive receivers as possible. Another method might be placing a temporary noise barrier in front of the equipment. As a general rule, good coordination between the project engineer, the contractor, and the affected receivers will help to make site control less confusing and is a more personal approach to work out ways to minimize construction noise impacts in the more noise-sensitive areas. No specific construction-noise, site-control specifications will be included in the plans.

Time and Activity Constraints: Limiting working hours on a construction site can be very beneficial during the hours of sleep or on Sundays and holidays. However, most construction activities do not occur at night and usually not on Sundays. Exceptions due to weather, schedule, and a time-related phase of construction work could occur. No specific constraints will be incorporated in the plans of the proposed project. Enforcement of these constraints could be handled through a general city or county ordinance, either listing the exceptions or granting them on a case-by-case basis.

G. COORDINATION WITH LOCAL OFFICIALS

In accordance with 23 CFR, Part 772, the state highway agency (Iowa DOT) is delegated the responsibility of taking measures that are prudent and feasible to assure the location and design of highways are compatible with existing and planned land uses.

Approximately 500 feet was found to be the distance between the proposed roadway centerline and the 66 dBA contour for the design year (2030) Build Alternative. Approximately 125 feet was found to be the distance between the proposed roadway centerline and the 71 dBA contour for the design year (2030) Build Alternative (Table 9).

Local planning agencies can utilize this information as a guide to ensure that noise impacts are minimized in the event of future land use changes. A copy of this report will be provided to the appropriate local planning authorities in order to assist in the development of compatible future land use criteria.

Table 9
Noise Isopleth Locations

Roadway Segment	Noise Level Leq (dBA)	Distance from Proposed Roadway Centerline (feet)
		2030 Build Alternative
I-80	66	500
I-80	71	125

H. CONCLUSION

No noise impacts are predicted as a result of the proposed project. The cumulative noise levels in the area should be consistent with the noise levels experienced in other similar areas of the community. There are no indications that the cumulative noise levels in the project area would represent a significant environmental issue or concern.

I. REFERENCES

1. American National Standards Institute (ANSI) S1.4. Standard for Sound Level Meters. 1971.

2. Iowa Department of Transportation (DOT), Highway Traffic Noise Analysis and Abatement. April 2003.

3. Iowa Department of Transportation (DOT), West System Interchange – Traffic Capacity Analysis. Existing Traffic. May 2005.

4. Iowa Department of Transportation (DOT), West System Interchange – Traffic Capacity Analysis. Refined Concept 1 Projected 2030 AM Peak Hour Traffic. July 2005.

5. Iowa Department of Transportation (DOT), West System Interchange – Traffic Capacity Analysis. 2030 No-Build AM Peak Hour Traffic. May 2005.

6. U.S. Department of Transportation, Federal Highway Administration (FHWA). FHWA Traffic Noise Model: User's Guide. FHWA Report Number FHWA-PD-96-009. January 1998.

7. U.S. Department of Transportation, FHWA. Highway Traffic Noise Analysis and Abatement Policy and Guidance. June 1995.

8. U.S. National Archives and Records Administration, Office of the Federal Register. Title 23, Code of Federal Regulations, Part 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise.

Figure 1

Monitoring and Receiver Location

Council Bluffs Interstate System Improvements

Omaha/Council Bluffs Metropolitan Area

N

HDR

Interstate-80: 24th Street Bridge to Missouri River Bridge

Noise Study Report NH-80-9[889]

October 2006

Prepared for:
Nebraska Department of Roads

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PROJECT BACKGROUND

This report documents the noise analysis completed in support of the Nebraska Department of Roads' (NDOR) Interstate 80 (I-80) 24th Street Bridge to Missouri River Bridge project. The proposed roadway project is the expansion of I-80 to nine lanes, for approximately 1.66 miles from the 24th Street overpass to west side of the Missouri River bridge. The project will be compatible with the Iowa Department of Transportation's reconstruction of the Council Bluffs Interstate system.

The purpose of this noise report is to:

- Provide an overview of noise fundamentals and traffic noise analysis.
- Evaluate existing traffic noise levels in the corridor.
- Predict future year 2030 traffic noise levels associated with the project at identified sensitive receivers. Sensitive receivers are uses adjacent to the studied corridor (such as houses, businesses, parks and schools) that might be affected by traffic noise.
- Identify the typical distance from the roadway at which noise levels would be predicted to approach the Federal Noise Abatement Criteria (NAC) noise levels of L_{eq} 67 dBA and 72 dBA. "Approaching" this level is defined by NDOR policy as a noise level within one decibel of the NAC.
- Quantify the number of properties that are predicted to experience traffic noise levels that exceed the applicable standards.
- Evaluate potential mitigation measures for sensitive receivers in the corridor that approach or exceed the NAC.

NATURE OF NOISE

Noise may be defined as unwanted sound. Sound is the sensation produced in the ears when the movement of an object creates waves of air. The relative impact of sound waves depends on the amount of pressure they generate. The unit of measure for sound pressure is the decibel (dB). Decibels are based on a logarithmic scale because the range of sound pressures is too great to be accommodated on a linear scale.

Measured noise levels do not necessarily correspond to our perception of "loudness". For instance, a three (3) decibel increase represents a doubling of the noise level (as measured in sound pressure) on the logarithmic scale. However, this change is barely perceptible for humans. Furthermore, an increase in 10 decibels from a noise source is a tenfold increase in noise pressure, but is only perceived as a doubling in the loudness by the human ear.

For highway traffic noise analysis, the Federal Highway Administration (FHWA) has specified that noise be predicted and evaluated in decibels weighted with the A-level frequency response; this unit of measure is referred to as dBA. Measurements in dBA incorporate a human's reduced sensitivity to both low frequency and very-high

frequency noises to better correlate with our subjective impression of loudness. Table 1 displays noise levels common to our everyday activities.

TABLE 1. Common Exterior Noise Levels (dBA)

Noise Activity and Distance	Noise Level (dBA)
Rock Band at 5 m (16 ft.)	110
Jet Flyover at 300 m (985 ft.)	105
Gas Lawn Mower at 1 m (3.3 ft.)	95
Heavy Truck at 15 m (49 ft.)	90
Busy Restaurant	85
Gas Lawn Mower at 30 m (98 ft.)	70
Normal Speech at 1 m (3.3 ft.)	65
Quiet Office	50
Leaves Rustling	40
Threshold of Hearing	0

The amount of traffic noise exposure will vary from location-to-location throughout a roadway corridor. Three general concepts that affect the level of traffic noise exposure along a roadway corridor are:

- *Traffic characteristics*: Noise levels increase as traffic volumes or travel speeds increase. For example, a doubling of the traffic volumes on a roadway (holding the relative composition of traffic constant) will double the traffic sound levels, an increase of three decibels. The mix/composition of the vehicles (portion of trucks, cars, buses and motorcycles) also affects noise levels; heavy trucks emit more noise than automobiles.
- *Distance to the noise source*: Noise levels decrease as the distance between the noise receiver and the highway traffic increases. For instance, someone standing 200 feet from a noise source would be exposed to twice the level of noise, or three more decibels, than someone standing 400 feet away from the same noise source.
- *Line of sight between the noise source and the noise receiver*: Noise levels are highest when there is a direct line of sight, without solid obstructions, between the source of the noise and the noise receiver. Objects that block the line of sight between the noise source and receiver will reduce noise levels to some extent. Solid, continuous obstructions (whether man-made or natural) can act to significantly reduce noise levels, often between 5 and 10 decibels.

23 CFR PART 772 STANDARDS

23 Code of Federal Regulations (CFR) Part 772 was written by the Federal Highway Administration (FHWA) to provide procedures for noise studies and noise abatement measures. 23 CFR 772 contains noise abatement criteria (NAC), which are based on the equivalent level (L_{eq}) noise descriptor. The noise levels experienced by most persons

adjacent to a highway corridor are not steady over time, since noise levels vary as adjacent traffic conditions vary. The $L_{eq}(h)$ is a descriptor that summarizes a "snapshot" sound level that is equivalent (in terms of acoustic energy) to the varying noise levels experienced over the peak traffic noise hour. To illustrate, the traffic noise levels monitored at one location in the corridor ranged from 63 dBA to 80 dBA during a monitoring period. When the various noise levels experienced over the monitoring period were compiled and summarized, the equivalent $L_{eq}(h)$ was 69 dBA.

Table 2 documents the desired upper limits of $L_{eq}(h)$ by activity category, as established by the NAC. At a sensitive noise receiver, any noise levels that approach or exceed these criteria would not be desirable and would be categorized a noise impact.

TABLE 2. Noise Abatement Criteria, Hourly A-Weighted Sound Level

Activity Category	Hourly Noise Levels Leq(h) dBA	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, play grounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

To determine which abatement criteria should be applied at the various receivers in the corridor, land uses within the I-80 study area were verified during field visits in December 2005. Sensitive receivers adjacent to the roadway centerline were identified and categorized based on the use definitions in Table 2. All of the uses in the study area fall under Activity Category B and C and were evaluated for exterior noise levels.

NOISE PREDICTION METHOD

Traffic noise levels associated with three different scenarios were predicted for this noise study:

- *The Existing Conditions Scenario* assumed current (2005) traffic volumes, vehicle mix (broken down by autos, medium trucks and heavy trucks) and roadway conditions.
- *The 2030 No-Build Scenario* assumed that future (2030) forecasted traffic would be traveling on the existing roadway cross-sections without the widened I-80 and reconfigured ramps.

- *The 2030 Build Scenario* assumed that future (2030) forecasted traffic volumes would be traveling on the widened I-80 roadway cross-section.

Traffic noise levels evaluated in this study reflect design hour volume (DHV) noise levels, typically defined as the 30th highest hourly traffic volume of the year, and are predicted in $L_{eq}(h)$ dBA. The DHV volumes used to predict study noise levels were supplied by NDOR and the Metropolitan Area Planning Organization (MAPA).

The "FHWA Highway Traffic Noise Prediction Model" was used to predict traffic noise levels. This model was developed and approved for use by the U.S. Department of Transportation Federal Highway Administration (FHWA). This method was applied on this project by using the FHWA Traffic Noise Model (TNM) software Version 2.5.

Noise Model Parameters

The following parameters were considered when applying the traffic noise prediction methodology:

- Traffic levels, vehicle composition (whether auto, medium truck or heavy truck) and travel speed
- Plan and profile information for roadways
- Location and elevation of sensitive noise receivers by activity category
- Location of terrain and man-made features that act to shield traffic noise
- Ground cover type
- Existing Noise Walls, retaining walls and median barriers

Table 3 documents the traffic data by vehicle type for existing and future year conditions.

Medium trucks include all vehicles having two axles and six wheels, generally having a gross vehicle weight between 10,000 and 26,000 pounds. Heavy trucks include all vehicles having three or more axles, generally having a gross vehicle weight greater than 26,000 pounds. The vehicle travel speeds used for the noise model were based on observed travel speeds along I-80, which were:

- 60 miles-per-hour (mph) on Interstate 80 between 24th Street and the US 75 / I-480 ramps. This speed assumption was based observed speeds through this segment during approximately LOS "C" conditions. The posted speed is 60 mph on this segment.
- 63 mph on Interstate 80 west of the US 75 / I-480 ramps. This speed assumption was based on observed speeds through this segment during approximately LOS "C" conditions. The posted speed is 60 mph on this segment.
- Posted speed limits on cross-streets.

The existing and build scenario roadway alignments were entered into TNM and reflected the design files received from the NDOR. Elevation information was entered

based on design files from the NDOR and contour information from MAPA's geographic information system (GIS) files.

TABLE 3. Traffic Data for Existing and Future Year Noise Analysis

Segment	2005 (estimate)			2030		
	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
Eastbound I-80 Segments						
I-80 west of 24th St off-ramp	3,196	43	301	4,372	70	400
I-80 west of US75/I-480 on-ramp	2,803	38	294	3,929	64	392
I-80 west of 13th St off-ramp	3,743	87	388	5,345	142	544
I-80 west of 13th St on-ramp	3,016	78	378	4,560	135	535
I-80 west of Missouri River	3,343	96	399	5,010	158	562
Eastbound I-80 Ramps						
24th Street off-ramp	393	5	7	443	6	8
US 75/I-480 on-ramp	939	49	95	1,416	78	152
13th St SB off-ramp	254	2	3	322	3	4
13th St NB loop off-ramp	473	7	8	463	4	5
13th St on-ramp	328	18	21	450	23	27
Westbound I-80 Segments						
I-80 west of Missouri River	2,609	85	304	4,167	137	486
I-80 west of 13th St off-ramp	2,335	70	286	3,767	115	459
I-80 west of 13th St NB loop on-ramp	2,607	73	289	4,004	117	462
I-80 west of 13th St SB on-ramp	3,274	82	299	4,782	124	471
I-80 west of US75/I-480 off-ramps	2,313	32	202	3,304	42	312
I-80 west of 24th St on-ramp	2,484	34	205	3,505	45	315
Westbound I-80 Ramps						
13th Street off-ramp	274	15	19	400	22	27
13th Street NB loop on-ramp	272	3	3	237	2	3
13th Street SB on-ramp	667	9	11	778	7	9
US 75/I-480 off-ramp	961	50	97	1,478	82	159
24th Street on-ramp	171	2	3	201	3	3
Crossing Streets						
24th Street South of I-80	1,597	23	27	1,892	27	32
24th Street between ramps	1,676	25	29	1,953	29	34
24th Street North of I-80	1,845	26	31	2,192	31	37
20th Street at I-80	365	4	4	388	4	4
16th Street at I-80	169	2	2	282	3	3
13th Street South of I-80	1,498	21	26	1,619	23	28
13th Street between ramps	1,709	31	37	1,770	32	39
13th Street North of I-80	2,150	41	48	2,362	45	53
10th Street at I-80	362	6	6	408	6	6
Riverview Boulevard at I-80	216	2	2	258	3	3

ADJACENT LAND USES

There are residential, commercial and recreational uses throughout the corridor. The existing land uses in the study area are documented in Figure 1.

MONITORED NOISE LEVELS

Noise measurements were taken to establish representative traffic noise levels throughout the corridor. The noise monitoring was completed with a Metrosonics 3080 sound level dosimeter, which takes continuous samples and computes the resultant hourly equivalent L_{eq} noise level.

Noise levels were monitored at 7 representative locations across the study area, and are shown in Figures 2 through 4. There are many locations in the corridor where there are elevation differences between the studied roadways and adjacent development. Terrain lines, rows of buildings and interchanges and overpasses throughout the corridor create barriers between adjacent development and the roadway, shielding some portion of the highway traffic noise at these locations. Thus, the noise monitoring locations were selected to represent various elevations and shielding conditions throughout the corridor.

The noise measurements were made in December 2005. Weather conditions during monitoring are provided in Table 4. Based on field observations, it was determined that most of the traffic monitoring should be conducted between 3:30 and 5:00 PM. It was observed during weekday afternoons, traffic congestion and reduced travel speeds occurred at the east end of the corridor after 4:30, so those locations were monitored before 4:30. The lower vehicle speeds associated with traffic congestion limit the resulting level of traffic noise. Thus, it is believed that the noise levels monitored are representative of "worst traffic noise conditions" when there were relatively high traffic volumes at uncongested/free-flow speeds.

TABLE 4. Weather Conditions During Noise Monitoring Events

Date	Temperature (°F)	Wind Direction	Wind Speed (mph)
December 14, 2005	40	North	10-15 mph
December 20, 2005	40	North/Northwest	0-5 mph
December 21, 2005	38	South	0-5 mph

Table 5 presents noise monitoring results at all 7 locations, including comments relating to each location's elevation and shielding conditions relative to the roadway.

TABLE 5. Monitored Noise Levels by Location

Monitor Location	Time	Distance to Centerline	Measured Leq	TNM Model Leq	Location Comments and Conditions
1	3:56 – 4:11 PM	270 feet	71.4 dBA	69.7 dBA	Approximately 30 feet south of existing retaining wall, 20 feet higher than adjacent ramp. Some line of sight shielding to roadways. 130 feet from US 75 on ramp.
2	4:21 – 4:36 PM	230 feet	72.5 dBA	72.2 dBA	Relatively even elevation with roadway and direct line of sight to I-80.
3	3:37 – 3:52 PM	430 feet	58.1 dBA	59.5 dBA	Line of sight to I-80 shielded by berm.
4	4:02 – 4:10 PM	530	68.5 dBA	67.9 dBA	Some traffic on adjacent Frederick St. Located above retaining wall for adjacent 13th Street westbound off-ramp, approximately 50 feet higher than I-80 mainline.
5	4:16 – 4:31 PM	220 feet	66.6 dBA	68.0 dBA	Significant shielding of depressed I-80 to south. 75 feet east of Riverview Blvd
6	4:37 to 4:47 PM	170 feet	69.4 dBA	70.8 dBA	Same elevation as I-80. Minor shielding of I-80 to the east.
7	4:02 – 4:17 PM	160 feet	71.3 dBA	72.0 dBA	Designated smoking area under flag pole at Henry Doorly Zoo. Area is zoo's only public area with direct view of I-80.

PREDICTED NOISE LEVELS

Noise levels were predicted for existing conditions (2005), 2030 no-build conditions, and 2030 build conditions. TNM was applied using the appropriate roadway, traffic and sensitive receiver information to predict the noise levels for each of the scenarios.

The predicted noise levels are summarized in the following bullets:

- There are no instances of build condition noise levels substantially exceeding no-build condition noise levels in the study area.
- 2030 no-build scenario noise levels were predicted to have a typical increase of one (1) to two (2) decibels higher than existing noise levels.
- The difference in predicted noise levels between the 2030 build scenario and the 2030 no-build scenario was between a two-decibel decrease and a two-decibel increase.

Typical 2030 build scenario noise impact contours of L_{eq} 66 dBA and L_{eq} 71 dBA were generated for this analysis. The uses that fall within these contours represent a noise level approaching (within one decibel) the NAC for Activity Category B and C uses. The

distance to the noise impact contour varies significantly through the corridor due to changes in terrain, shielding conditions and variations in traffic levels. The typical noise contours were generated to represent conditions where the roadway and receiver are at the same elevation with a direct line of sight between the roadway and receiver. For this reason, in many locations the actual width of the noise impact contour is narrower than the typical noise impact contour distances documented in Table 6.

TABLE 6. Typical Noise Impact Contour Widths, 2030[1]

Segment	Typical Distance From Build Condition Centerline	
	66 dBA Noise Contour	71 dBA Noise Contour
Interstate 80, 24th Street to 13th Street	500 feet	310 feet
Interstate 80, 13th Street to Missouri River	510 feet	310 feet

Table 7, which begins on page 21, lists the sensitive receivers adjacent to the corridor and their use, including documentation of each receiver's distance to the roadway centerline (the midpoint of both directions of traffic), its predicted noise levels for existing conditions, 2030 no-build and 2030 build scenarios and the relevant NAC. As shown in Table 7, there were no instances of substantial noise increases between existing conditions and the 2030 build scenario. In the 2030 build scenario, 119 of the 252 identified sensitive receivers experience noise levels that approach or exceed the applicable NAC. Approximately one acre of the Henry Doorly Zoo is predicted to experience build condition noise levels that will approach or exceed 67 dBA. The impacted area would be the designated smoking area near the large flagpole just southeast of the 10th Street overpass of I-80, adjacent to monitoring location 7.

Displayed in Figures 2 through 4 are the identified receivers in relation to the general L_{eq} 66 dBA and L_{eq} 71 dBA noise contours.

NOISE ABATEMENT MEASURES

By NDOR policy, noise abatement measures are to be considered when predicted traffic noise levels at sensitive noise receivers approach or exceed the noise abatement criteria (NAC), or when the predicted traffic noise levels substantially exceed the existing noise levels. Four different types of noise abatement measures were considered.

BUFFER ZONES

Buffer zones are setbacks of sufficient distance between the roadway and future developments to minimize future build condition noise impacts. Buffer zones are not a reasonable or feasible mitigation option for the impacted receivers in this corridor,

[1] While the noise contours illustrated in Table 6 and Figures 2 through 4 do not illustrate any variation in impact width due to locations of noise shielding, the estimated noise levels at each receiver do account for location-specific shielding where appropriate.

because creation of the setback would require acquisition of adjacent development, which would be cost prohibitive based on NDOR reasonableness criteria.

Alteration of Horizontal and Vertical Alignment

Alignment shifts can be incorporated into some projects to reduce traffic noise impacts where the receivers are typically on one side of the project or where the surrounding topography reasonably allows for modifying the profile. Modifying the horizontal or vertical alignment was not considered a feasible mitigation measure; this approach would not allow for any significant noise abatement without alteration of the entire Interstate 80 alignment.

Traffic Management Measures

Traffic management measures aim to control/limit the level of the roadway noise generated by reducing traffic volume in the corridor, particularly through regulation of vehicle mix or peak volume. I-80 is part of the Interstate Highway System and limiting or prohibiting heavy and medium trucks or limiting peak hour travel are not reasonable measures for noise mitigation.

Noise Barriers

Noise barriers are continuous, solid objects constructed along the roadway to shield adjacent sensitive receivers from roadway noise. Barriers are considered as a possible means of noise abatement where traffic noise from a new or widened roadway is predicted to impact adjacent uses. Barriers are considered effective when blocking the "line of sight" between the noise source and the noise receiver. A barrier must be continuous to be effective, and when possible noise barriers should be designed to extend approximately four times as far in each direction as the distance from the sensitive receiver to the barrier. Noise barriers are proposed when considered feasible and reasonable under criteria established by the NDOR and FHWA. A noise barrier will be considered *feasible* under NDOR criteria if it can meet *all four* of the following criteria:

1. Be built to fit the topography
2. Achieve at least a 5-dBA noise reduction.
3. Be built 16 feet high or less.
4. Be located beyond the clear recovery zone.

Barrier mitigation at the site is not considered feasible if a site cannot meet all four of the feasibility criteria. If a noise barrier meets the criteria for *feasibility*, it is then evaluated for its *reasonableness*.

A noise barrier will be considered *reasonable* under NDOR criteria if it meets a given score based on four reasonableness criteria, which are judged on a point scoring system. The reasonableness test criteria and their scores are:

1. Cost effectiveness defined as dollars per protected residence.
   - < $18,000/residence = 4
   - $18,000-23,000/residence = 3
   - $23,000-28,000/residence = 2
   - $28,000-30,000/residence = 1
2. The change in computed noise levels between the design year (without abatement) and existing conditions will equal or exceed 3 decibels (the minimally perceptible change).
   - > 3 dBA = 4
   - 3 dBA = 3
   - 2 dBA = 2
   - < 2 dBA = 1
3. The housing development preceded initial highway construction.
   - > 80% = 4
   - 50-80% = 3
   - 30-50% = 2
   - < 30% = 1
4. It is considered unreasonable to provide noise abatement on a highway with partial or no control of access.
   - Full control of access = 4
   - 1/2 mile access control = 2
   - 1/4 mile access control = 1
   - < 1/4 mile access control = 0

If the cost effectiveness test for a specific site is above $30,000 per residence the site is, by NDOR policy, considered not reasonable for noise barrier mitigation. Barriers with a cumulative reasonableness score of less than 10 points are judged to be not reasonable. Barriers with a score of 10 points or above should be evaluated further. The unit base price for the noise wall construction was estimated to be $30 per square foot.

Assessment by Location

Noise barriers were evaluated in ten locations for mitigation of the potentially impacted residences along I-80. Each location is shown in Figure 5. Earth berms require a substantial amount of land to construct, and could not be considered in any of the corridor locations because in all cases berms would physically impact the receivers they were intended to shield. Noise walls were evaluated within the right-of-way, and where possible were designed to:

- Extend approximately four times as far in each direction as the distance from receiver to the barrier.

- Block the line of sight between the receiver and the noise source.

The mitigation evaluation attempted to achieve a reduction of the impacted receivers' predicted noise levels by an average of at least L_{eq} 5 dBA, the minimum considered in NDOR's feasibility criteria.

Location 1: West of 20th Street, North of Interstate 80

There are ten (10) residences at Location 1 that were predicted to experience 2030 build condition noise levels approaching or exceeding the Category B NAC. The ten residences evaluated at Location 1 are:

- Residential 107
- Residential 108
- Residential 109
- Residential 110
- Residential 111
- Residential 125
- Residential 126
- Residential 129
- Residential 131
- Residential 132

These receivers range between 260 to 370 feet north of the I-80 centerline.

At this location I-80 is at a lower elevation than the residences at Location 1. Under the build condition, residences at Location 1 are predicted to experience a noise-level increase of approximately two decibels between today and 2030.

A noise wall at this location was determined to be not feasible for constructability reasons. The roadway right-of-way beyond the clear zone is located on a steep incline (approximately 35 to 40 percent grade) between the residences at Location 1 and I-80, and this slope is relatively continuous through to the edge of the roadway right-of-way. Due to this slope, there are no locations within the right-of-way where a noise wall could feasibly be constructed.

Location 2: West of 16th Street, North of Interstate 80

There are 22 residences at Location 2 that were predicted to experience 2030 build condition noise levels that approach or exceed the Category B NAC. The 22 residences evaluated at Location 2 are:

- Residential 141
- Residential 142
- Residential 144
- Residential 145
- Residential 148
- Residential 155
- Residential 156
- Residential 157
- Residential 158
- Residential 159
- Residential 160
- Residential 161
- Residential 162
- Residential 163
- Residential 164
- Residential 165
- Residential 166
- Residential 167
- Residential 168
- Residential 169
- Residential 246
- Residential 247

These receivers range from 190 to 610 feet north of I-80 centerline. Under the build condition, residences at Location 2 are predicted to experience a noise-level increase of one to two decibels between today and the 2030 build condition. Also at this location, approximately two (2) acres of Deer Hollow Park are predicted to experience noise levels that approach or exceed the Category B NAC in the 2030 build condition.

A noise wall was evaluated north of I-80 at this location. I-80 is elevated above the adjacent land to the north, such that:

- The base of a potential noise wall located outside of the build condition roadway clear zone would be between 10 and 15 feet below I-80.
- The park is approximately 20 to 25 feet lower than I-80.
- The elevation of the impacted receivers varies between 20 feet higher than I-80 to 15 feet lower than I-80.

Two different scenarios were evaluated at this location:

- *A noise wall that would shield the entire length of Location 2, from the east end of the existing noise wall to 16th Street.*
- *A noise wall that would shield the residences along 16th Street and extend approximately 500 feet to the west.* This noise wall would be intended to provide shielding to residences 158 through 169, 246 and 247. This shortened segment was chosen due to the orientation of the terrain and the impacted residences in this shortened location.

Due to the elevation of the adjacent terrain, it was not possible to construct a noise wall that would break the line of sight for the impacted receivers at this location under either scenario. Therefore, it was predicted that a noise wall 16 feet tall or less could not achieve an average 5-dBA noise reduction for the impacted receivers at Location 2.

Existing Noise Wall: East of 20th Street, North of Interstate 80

A noise wall approximately 500 feet long is already in place east of 20th Street, just west of Location 2. The current wall is effective, in that it achieves a greater than 5-dBA noise decrease for the shielded residences. Under the build condition, it is predicted that noise levels would approach the NAC at two residences located behind the wall and exceed the NAC at another two residences behind the wall.

It was determined that replacing the current noise wall would not be reasonable. Residences 141 and 142 are located at the west edge of the noise wall, and no modifications to the current wall configuration and / or height could feasibly change the noise levels predicted for these two receivers. Extending the wall farther east is not predicted to substantially reduce noise levels for Residences 144 and 148, as the elevations east of the current wall location are lower in relation to I-80 (as documented in Location 2 and shown in the picture to the left, looking east behind the wall.) Thus, an extension of the wall further east could not feasibly create significant decreases in noise levels.

Location 3: West of 20th Street, South of Interstate 80

There are six (6) residences at Location 3 that were predicted to experience 2030 build condition noise levels that approach or exceed the Category B NAC. The six residences evaluated at Location 3 are:

- Residence 15
- Residence 16
- Residence 17
- Residence 18
- Residence 19
- Residence 20

These receivers range between 190 to 310 feet south of the I-80 centerline. The elevations of the impacted residences at Location 3 range from even with I-80 to approximately 15 feet higher than I-80. Under the build condition, residences at this location are predicted to experience a noise-level increase of approximately two decibels between today and 2030.

To determine the reasonableness of a barrier at this location, the required size and location of a noise wall that would achieve at least a 5-dBA average noise reduction were estimated. It was predicted that a wall that averages approximately 14 feet high would provide

the required average 5-decibel reduction to the impacted receivers. The noise wall would benefit five (5) receivers by providing a 3-decibel reduction. The estimated cost of the noise wall would be approximately $240,000, or $48,000 per benefited receiver. At this cost per receiver, a noise wall at this location would not meet the reasonableness criteria for cost set forth in the NDOR's policy.

Location 4: 20th Street to 16th Street South of Interstate 80

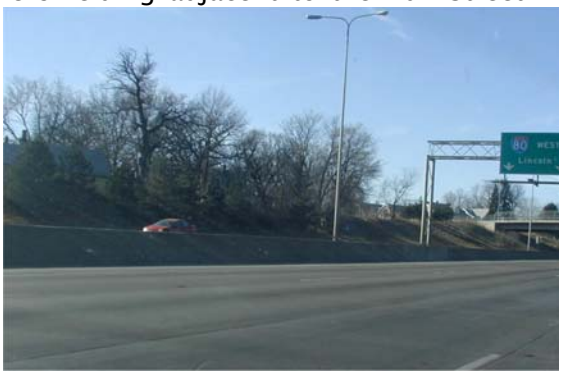
There are 22 receivers at Location 4 that were predicted to experience 2030 build condition noise levels that approach or exceed the Category B NAC. The residences evaluated at Location 4 are:

- Residential 4
- Residential 22
- Residential 23
- Residential 25
- Residential 26
- Residential 27
- Residential 28
- Residential 29
- Residential 30
- Residential 31
- Residential 32
- Residential 33
- Residential 34
- Residential 35
- Residential 36
- Residential 37
- Residential 38
- Residential 85
- Residential 86
- Residential 88
- Residential 223
- Residential 224

These receivers range between 130 to 430 feet south of the I-80 centerline. Under the build condition, the residences at Location 4 are predicted to experience a two to three decibel increase in noise levels between today and 2030.

There is a large open space in the center of this location near 18th Street, approximately 350 feet wide. The rolling terrain creates some shielding adjacent to the 20th Street overpass. The relative elevations of the receivers range from:

- Same elevation as I-80 to approximately 20 feet higher than I-80 near 20th Street.
- Ten (10) feet to 25 feet higher than I-80 near 16th Street.



At this location, receiver 26 would potentially be acquired as a part of the build condition. Thus, abatement scenarios were reviewed with two conditions: with receiver 26 in place and with receiver 26 removed. The mitigation options that were investigated for each condition are documented below.

- *Receiver 26 remains*: This condition assumes that receiver 26 would not be acquired for the widening of I-80 and would remain in place. Three different

scenarios were evaluated for the condition where receiver 26 remained:

- A noise wall that would provide noise abatement for the 10 most western impacted receivers, located between 20th Street and the open space. If receiver 26 remained in the 2030 build scenario, a noise wall could not feasibly be built north of receiver 26. There is not sufficient I-80 right-of-way at this location to construct a noise wall outside of the clear zone, and no traffic barriers are planned. Thus, a noise wall is not considered feasible for this scenario.
- A noise wall that was located outside of the clear zone to the west of receiver 26. This noise wall, which would extend from 20th Street for approximately 260 feet to the east, would provide some shielding of I-80 noise to receivers 22, 23, 25, 30, 223 and 224. However, this noise wall would not be feasible because it could not achieve an average 5-dBA noise reduction, at a height of 16 feet or less, for the impacted residences.
- A noise wall that would provide noise abatement for the 12 most eastern impacted receivers, located between 16th Street and the open space. Under this scenario it was predicted that a noise wall was not feasible, because a barrier 16 feet tall or less could not achieve an average 5-dBA noise reduction for the 12 impacted residences.

- *Receiver 26 is acquired and removed*: This condition assumes that receiver 26 would be acquired and removed for the widening of I-80. Three different noise wall scenarios were evaluated for this location:
  - A single, continuous noise wall that would provide noise abatement for the remaining 21 impacted receivers between 20th Street and 16th Street. Under this scenario it was predicted that a noise wall was not feasible, because a noise wall 16 feet tall or less could not achieve an average 5-dBA noise reduction for the impacted receivers.
  - A noise wall that would provide noise abatement for the most western impacted receivers (nine remaining), located between 20th Street and the open space. Under this scenario it was predicted that a noise wall with an average height of 14 feet would provide an average 5-decibel noise attenuation to the nine (9) impacted residences. The wall would provide a noise reduction benefit to seven (7) residences at this location. The wall would have an estimated cost of $260,000, or $37,100 per benefited receiver. At this cost per receiver, a noise wall at this location would not meet the reasonableness criteria for cost set forth in the NDOR's policy.
  - A noise wall that would provide noise abatement for the 12 most eastern impacted receivers, located between 16th Street and the open space. The removal of receiver 26 has no bearing on the feasibility of a noise wall for this scenario: it was predicted to be not feasible, because a noise wall 16 feet tall or less could not achieve an average 5-dBA noise reduction for the 12 impacted residences.

Location 5: East of 16th Street, North of Interstate 80

There are seven (7) residences at Location 5 that were predicted to experience 2030 build condition noise levels that exceed the Category B NAC. The seven residences evaluated at Location 5 are:

- Residence 170
- Residence 171
- Residence 172
- Residence 173
- Residence 174
- Residence 175
- Residence 176

These receivers range between 250 to 470 feet north of the I-80 centerline. Under the build condition, the residences at Location 5 are predicted to experience a two to three decibel increase in noise levels between today and 2030.

The residences are on a hill at elevations between 10 and 25 feet higher than I-80 and the base of the evaluated noise wall. The terrain conditions do not allow a wall to block the line of sight to I-80. It was predicted that a noise wall at this location was not feasible, because a wall 16 feet tall or less could not achieve an average 5-dBA noise reduction for the seven (7) impacted residences.

Location 6: 16th Street to 13th Street South of Interstate 80

There are seven (7) residences at Location 6 that were predicted to experience 2030 build condition noise levels that exceed the Category B NAC. The seven residences evaluated at Location 6 are:

- Residence 41
- Residence 42
- Residence 43
- Residence 44
- Residence 45
- Residence 49
- Residence 50

The terrain through this location is rolling, so that elevations of the receivers range from:

- The same elevation as I-80 to approximately 10 feet higher than I-80 near 16th Street.
- On average 30 feet lower than I-80 near 15th Street. There is some shielding of this location from the hill to the west and the eastbound 13th Street off ramp.

The impacted receivers range between 250 to 470 feet north of the I-80 centerline. Under the build condition, the residences at Location 6 are predicted to experience a two to three decibel increase in noise levels between today and 2030.

The higher elevation of residences 41, 42, 43, 44 and 45 and their proximity to 16th Street, which was the west edge of the noise wall, reduced the effectiveness of a noise wall at this location to the point where a wall 16 feet tall or less could not achieve an average 5-dBA noise reduction for the seven (7) impacted residences.

Location 7: 13th Street to 10th Street North of Interstate 80

There are six (6) residences at Location 7 that were predicted to experience 2030 build condition noise levels that exceed the Category B NAC. The six residences evaluated at Location 7 are:

- Residence 178
- Residence 179
- Residence 185
- Residence 186
- Residence 187
- Residence 188

The impacted residences are located north of the 13th Street off-ramp, ranging from 25 feet to 50 feet higher in elevation than the mainline I-80. The distance of the receivers to the I-80 centerline is from 230 to 660 feet north. Under the build condition, the residences at Location 7 are predicted to experience a one (1) to four (4) decibel increase in noise levels between today and 2030.

Two different mitigation scenarios were evaluated at this location:

- *A continuous noise wall between 13th Street and 10th Street:* This noise wall would provide some shielding of I-80 noise to all of the impacted receivers identified at location 7. It was predicted that a noise wall that averages 10 feet tall would provide would provide the required average 5-decibel reduction to the impacted receivers. A noise wall at this location predicted to benefit 8 residences. The estimated cost of the noise wall would be approximately $310,000, or $38,800 per benefited receiver. At this cost per benefited receiver, the wall at this location is not considered reasonable according to the criteria set forth in the NDOR *Noise Analysis and Abatement Policy*.
- *A noise wall between approximately 11th Street and 10th Street*: This noise wall would provide some shielding of I-80 noise to receivers 185, 186, 187 and 188. It was predicted that a noise wall that averages 13 feet tall would provide the require average 5-decibel reduction to these four (4) impacted receivers. The noise wall would benefit three receivers at this location. The estimated cost of the noise wall would be approximately $170,000, or $57,000 per benefited receiver. At this cost per benefited receiver, the wall at this location is not considered reasonable according to the criteria set forth in the NDOR *Noise Analysis and Abatement Policy*.

Location 8: East of 10th Street, North of Interstate 80

There are nine (9) residences at Location 8 that are predicted to experience 2030 build condition noise levels that exceed the Category B NAC. The 9 residences evaluated at Location 8 are:

- Residence 189
- Residence 190
- Residence 191
- Residence 192
- Residence 193
- Residence 230
- Residence 231
- Residence 232
- Residence 233

The impacted residences range from between 160 and 500 feet north of the I-80 centerline. The elevation of the residences is the same as I-80 to 35 feet higher than the mainline I-80. Under the build condition, the residences at Location 8 are predicted to experience a three (3) decibel increase in noise levels between today and 2030.

It was predicted that a noise wall that averages 16 feet tall would provide an average 5-decibel noise attenuation to seven (7) of the impacted residences. The wall would have an estimated cost of $230,000, or $32,900 per benefited receiver. At this cost per benefited receiver, the wall at this location is not considered reasonable according to the criteria set forth in the NDOR *Noise Analysis and Abatement Policy*.

Location 9: East of Riverview Boulevard, North of Interstate 80

There are 17 residences and one recreational use at Location 9 that are predicted to experience 2030 build condition noise levels that exceed the Category B NAC. The 18 impacted uses are:

- Residence 194
- Residence 195
- Residence 196
- Residence 197
- Residence 198
- Residence 199
- Residence 200
- Residence 201
- Residence 202
- Residence 203
- Residence 204
- Residence 205
- Residence 206
- Residence 207
- Residence 208
- Residence 209
- Residence 210
- Recreational 216

The recreational use predicted to approach the Category B NAC in the 2030 build condition is Kenefick Park, a Union Pacific locomotive display

located south of the Lauritzen Gardens (currently under construction). The locomotive's visibility to westbound I-80 traffic appears to be intentional; the Lauritzen Gardens website promotes Kenefick Park with the statement: "Two of the greatest locomotives ever to power Union Pacific Railroad sit at the southwest point of the Lauritzen Gardens property, highly visible to passersby on Interstate 80 and welcoming motorists to Nebraska."

The impacted residences range from 30 to 75 feet higher elevation than the mainline I-80, and are located between 200 and 390 feet north of the build-condition I-80 centerline. There is significant shielding of I-80 traffic noise due to the steep slope between I-80 and the Location 9 residences. Under the build condition, the residences at Location 9 are predicted to experience a two (2) to three (3) decibel increase in noise levels between today and 2030.

Two different mitigation scenarios were investigated at this location:

- *A continuous noise wall that would provide noise abatement for the 17 impacted residences, but not Kenefick Park:* Under this mitigation scenario, it was predicted that a noise wall that averages 15 feet tall would provide an average 5-decibel noise attenuation to the impacted residences. This wall would provide a noise reduction benefit to 19 additional residences. The noise wall would cost approximately $690,000, or $36,300 per impacted and benefited receiver. At this cost per benefited receiver, the wall at this location is not considered reasonable according to the criteria set forth in the NDOR *Noise Analysis and Abatement Policy*.
- *A continuous noise wall that would provide noise abatement for all 18 impacted receivers, including Kenefick Park*: The park is located approximately 400 feet east of the nearest impacted residence, and thus would require a substantial extension of the noise wall from the cluster of impacted residences. This mitigation scenario was determined not reasonable, as the cost of a noise wall that would provide an average 5-decibel noise reduction would cost approximately $950,000, or $47,500 per benefited receiver.

Location 10: East of Riverview Blvd, South of Interstate 80

There are nine (9) residences at Location 10 that were predicted to experience 2030 build condition noise levels that exceed the Category B NAC. The nine residences evaluated at Location 10 are:

- Residence 61
- Residence 63
- Residence 64
- Residence 66
- Residence 67
- Residence 69
- Residence 70
- Residence 71

The terrain through this location is rolling, so that elevations of the receivers range from 50 feet higher than I-80 to 20 feet lower than I-80.

The impacted receivers range between 250 to 630 feet south of the I-80 centerline. Under the build condition, the residences at Location 10 are predicted to experience a one (1) to five (5) decibel increase in noise levels between today and 2030.

The higher elevation of the majority of impacted receivers significantly reduced the effectiveness of a noise wall at this location to the point where a noise wall of 16 feet or less could not achieve an average 5-dBA noise reduction for the nine (9) impacted residences.

Location 11: Henry Doorly Zoo

Henry Doorly Zoo is located south of I-80 between 10th Street and Riverview Boulevard. The terrain through this location is rolling. The northern-most portion of the zoo property ranges from 10 to 25 feet higher than I-80, with the remainder of the zoo downhill to the south. Thus, the northern portion of the zoo property effectively shields the remainder of the zoo and its exhibits from the traffic noise associated with I-80.

The zoo's northern edge includes a designated smoking area, maintenance buildings and staff parking, all uphill from the nearest adjacent zoo exhibits to the south. The uses that should be considered Activity Category B uses, the zoo's exhibits and areas of frequent human use, are shielded from the roadway and / or are located at a distance beyond the noise impact contours documented in Table 6.

Receiver 252 was placed at a location that represented one of the exhibit areas nearest the I-80 corridor, approximately 460 feet south of the roadway centerline. This receiver is predicted to experience traffic noise levels of 59 L_{eq}(h) dBA in the 2030 build condition. Thus, mitigation was not considered feasible for the zoo because Activity Category B uses were not predicted to exceed the NAC in the build condition.

SUMMARY

Noise meters were used to monitor existing noise levels in the study area in seven (7) locations. Monitoring was conducted to get a representative sample of the various terrain and shielding conditions within the corridor, and was verified against the existing conditions TNM model. The monitoring was conducted from 3:30 PM to 5:00 PM on weekdays to collect data during the "worst traffic noise conditions" period, when traffic levels are relatively high but traffic flow is not restricted by congestion.

FHWA's traffic noise model (TNM) was applied to predict noise levels throughout the corridor for existing conditions, the future (2030) no-build scenario and the future (2030) build scenario. The noise analysis identified sensitive receivers adjacent to the corridor that were predicted to approach or exceed the L_{eq} Noise Abatement Criteria of 67 dBA for Activity Category B and 72dBA for Activity Category C documented in Table 2.

Of the 252 sensitive receivers identified in the corridor, 119 were predicted to approach or exceed the NAC.

Abatement measures were evaluated at 11 locations along I-80. In all locations, noise abatement was considered either not feasible or not reasonable according to the NDOR's *Noise Analysis and Abatement Policy*. All of the noise abatement locations are illustrated in Figure 5.

TABLE 7. Summary of Noise Prediction Results by Sensitive Receiver

Receiver ID & Land Use	Distance to Roadway Centerline (Existing / Build)	2005 Existing Noise Level	2030 No-Build Noise Level	2030 Build Noise Level	Leq Noise Abatement Criteria	2030 Build Approaches or Exceeds Leq Criteria
1 – Residential	510' / 510'	63 dBA	64 dBA	64 dBA	66 dBA	NO
2 – Residential	280' / 280'	64 dBA	65 dBA	65 dBA	66 dBA	NO
3 – Residential	470' / 470'	63 dBA	65 dBA	65 dBA	66 dBA	NO
4 – Residential	350' / 350'	65 dBA	67 dBA	68 dBA	66 dBA	YES
5 – Residential	530' / 530'	67 dBA	68 dBA	68 dBA	66 dBA	YES
6 – Residential	460' / 460'	68 dBA	69 dBA	69 dBA	66 dBA	YES
7 – Residential	410' / 410'	68 dBA	70 dBA	70 dBA	66 dBA	YES
8 – Residential	370' / 370'	69 dBA	70 dBA	71 dBA	66 dBA	YES
9 – Residential	430' / 430'	60 dBA	61 dBA	62 dBA	66 dBA	NO
10 – Residential	490' / 490'	60 dBA	61 dBA	61 dBA	66 dBA	NO
11 – Residential	400' / 400'	61 dBA	62 dBA	62 dBA	66 dBA	NO
12 – Residential	450' / 450'	60 dBA	62 dBA	62 dBA	66 dBA	NO
13 – Residential	490' / 490'	60 dBA	62 dBA	62 dBA	66 dBA	NO
14 – Residential	530' / 530'	59 dBA	61 dBA	61 dBA	66 dBA	NO
15 – Residential	210' / 210'	68 dBA	70 dBA	70 dBA	66 dBA	YES
16 – Residential	190' / 190'	74 dBA	75 dBA	76 dBA	66 dBA	YES
17 – Residential	200' / 200'	74 dBA	75 dBA	76 dBA	66 dBA	YES
18 – Residential	220' / 220'	72 dBA	74 dBA	74 dBA	66 dBA	YES
19 – Residential	220' / 220'	72 dBA	74 dBA	74 dBA	66 dBA	YES
20 – Residential	310' / 310'	66 dBA	67 dBA	68 dBA	66 dBA	YES
21 – Residential	350' / 350'	63 dBA	65 dBA	65 dBA	66 dBA	NO
22 – Residential	290' / 290'	67 dBA	69 dBA	69 dBA	66 dBA	YES
23 – Residential	260' / 260'	65 dBA	66 dBA	67 dBA	66 dBA	YES
24 – Residential	310' / 310'	62 dBA	64 dBA	65 dBA	66 dBA	NO
25 – Residential	200' / 200'	72 dBA	74 dBA	74 dBA	66 dBA	YES
26 – Residential	130' / 130'	77 dBA	79 dBA	79 dBA	66 dBA	YES
27 – Residential	170' / 170'	74 dBA	76 dBA	76 dBA	66 dBA	YES
28 – Residential	250' / 250'	70 dBA	71 dBA	72 dBA	66 dBA	YES
29 – Residential	270' / 270'	69 dBA	71 dBA	71 dBA	66 dBA	YES
30 – Residential	300' / 300'	65 dBA	67 dBA	68 dBA	66 dBA	YES
31 – Residential	220' / 220'	72 dBA	73 dBA	75 dBA	66 dBA	YES
32 – Residential	250' / 250'	69 dBA	71 dBA	72 dBA	66 dBA	YES
33 – Residential	300' / 300'	66 dBA	68 dBA	69 dBA	66 dBA	YES
34 – Residential	230' / 230'	72 dBA	74 dBA	75 dBA	66 dBA	YES
35 – Residential	270' / 270'	71 dBA	72 dBA	74 dBA	66 dBA	YES
36 – Residential	340' / 340'	69 dBA	70 dBA	72 dBA	66 dBA	YES
37 – Residential	360' / 360'	66 dBA	68 dBA	68 dBA	66 dBA	YES
38 – Residential	420' / 420'	65 dBA	66 dBA	67 dBA	66 dBA	YES
39 – Residential	460' / 460'	63 dBA	65 dBA	65 dBA	66 dBA	NO
40 – Residential	500' / 500'	62 dBA	63 dBA	64 dBA	66 dBA	NO
41 – Residential	490' / 490'	64 dBA	66 dBA	67 dBA	66 dBA	YES
42 – Residential	450' / 450'	66 dBA	67 dBA	68 dBA	66 dBA	YES
43 – Residential	410' / 410'	68 dBA	69 dBA	70 dBA	66 dBA	YES
44 – Residential	360' / 360'	68 dBA	69 dBA	70 dBA	66 dBA	YES
45 – Residential	350' / 350'	68 dBA	69 dBA	70 dBA	66 dBA	YES
46 – Residential	430' / 430'	63 dBA	64 dBA	65 dBA	66 dBA	NO

TABLE 7. Summary of Noise Prediction Results by Sensitive Receiver (Continued)

Receiver ID & Land Use	Distance to Roadway Centerline (Existing / Build)	2005 Existing Noise Level	2030 No-Build Noise Level	2030 Build Noise Level	Leq Noise Abatement Criteria	2030 Build Approaches or Exceeds Leq Criteria
47 – Residential	460' / 460'	63 dBA	64 dBA	65 dBA	66 dBA	NO
48 – Residential	500' / 500'	62 dBA	64 dBA	64 dBA	66 dBA	NO
49 – Residential	330' / 330'	64 dBA	66 dBA	66 dBA	66 dBA	YES
50 – Residential	360' / 360'	64 dBA	65 dBA	66 dBA	66 dBA	YES
51 – Residential	410' / 410'	64 dBA	65 dBA	65 dBA	66 dBA	NO
52 – Residential	450' / 450'	64 dBA	65 dBA	65 dBA	66 dBA	NO
53 – Residential	480' / 480'	64 dBA	65 dBA	65 dBA	66 dBA	NO
54 – Residential	620' / 620'	61 dBA	63 dBA	63 dBA	66 dBA	NO
55 – Commercial	580' / 580'	61 dBA	63 dBA	63 dBA	71 dBA	NO
56 – Residential	650' / 650'	61 dBA	62 dBA	63 dBA	66 dBA	NO
57 – Residential	380' / 380'	66 dBA	67 dBA	68 dBA	66 dBA	YES
58 – Commercial	710' / 710'	63 dBA	64 dBA	64 dBA	71 dBA	NO
59 – Recreational	1280' / 1280'	60 dBA	61 dBA	62 dBA	66 dBA	NO
60 – Recreational	160' / 160'	75 dBA	77 dBA	75 dBA	66 dBA	YES
61 – Residential	480' / 490'	66 dBA	68 dBA	68 dBA	66 dBA	YES
62 – Commercial	650' / 670'	64 dBA	66 dBA	67 dBA	71 dBA	NO
63 – Residential	280' / 300'	67 dBA	69 dBA	68 dBA	66 dBA	YES
64 – Residential	340' / 360'	66 dBA	67 dBA	67 dBA	66 dBA	YES
65 – Residential	410' / 430'	64 dBA	66 dBA	65 dBA	66 dBA	NO
66 – Residential	220' / 250'	69 dBA	71 dBA	72 dBA	66 dBA	YES
67 – Residential	290' / 320'	65 dBA	67 dBA	69 dBA	66 dBA	YES
68 – Residential	610' / 640'	59 dBA	61 dBA	60 dBA	66 dBA	NO
69 – Residential	620' / 630'	64 dBA	66 dBA	67 dBA	66 dBA	YES
70 – Residential	260' / 300'	67 dBA	69 dBA	70 dBA	66 dBA	YES
71 – Residential	260' / 300'	66 dBA	67 dBA	69 dBA	66 dBA	YES
72 – Residential	220' / 260'	68 dBA	70 dBA	73 dBA	66 dBA	YES
73 – Residential	500' / 530'	62 dBA	64 dBA	65 dBA	66 dBA	NO
74 – Residential	400' / 440'	62 dBA	64 dBA	65 dBA	66 dBA	NO
75 – Residential	420' / 460'	62 dBA	64 dBA	65 dBA	66 dBA	NO
76 – Residential	530' / 580'	61 dBA	63 dBA	64 dBA	66 dBA	NO
77 – Residential	640' / 680'	60 dBA	62 dBA	62 dBA	66 dBA	NO
78 – Residential	740' / 780'	59 dBA	61 dBA	61 dBA	66 dBA	NO
79 – Residential	760' / 810'	58 dBA	60 dBA	59 dBA	66 dBA	NO
80 – Residential	750' / 800'	61 dBA	63 dBA	62 dBA	66 dBA	NO
81 – Residential	690' / 740'	61 dBA	63 dBA	61 dBA	66 dBA	NO
82 – Residential	620' / 680'	62 dBA	64 dBA	62 dBA	66 dBA	NO
83 – Residential	520' / 570'	63 dBA	65 dBA	63 dBA	66 dBA	NO
84 – Residential	420' / 470'	64 dBA	66 dBA	63 dBA	66 dBA	NO
85 – Residential	380' / 380'	66 dBA	68 dBA	69 dBA	66 dBA	YES
86 – Residential	380' / 380'	65 dBA	66 dBA	67 dBA	66 dBA	YES
87 – Residential	410' / 410'	63 dBA	64 dBA	65 dBA	66 dBA	NO
88 – Residential	430' / 430'	65 dBA	66 dBA	67 dBA	66 dBA	YES
89 – Commercial	510' / 510'	67 dBA	69 dBA	69 dBA	71 dBA	NO
90 – Residential	650' / 650'	61 dBA	62 dBA	62 dBA	66 dBA	NO
91 – Residential	610' / 610'	59 dBA	61 dBA	61 dBA	66 dBA	NO
92 – Residential	600' / 600'	59 dBA	60 dBA	60 dBA	66 dBA	NO

TABLE 7. Summary of Noise Prediction Results by Sensitive Receiver (Continued)

Receiver ID & Land Use	Distance to Roadway Centerline (Existing / Build)	2005 Existing Noise Level	2030 No-Build Noise Level	2030 Build Noise Level	Leq Noise Abatement Criteria	2030 Build Approaches or Exceeds Leq Criteria
93 – Residential	550' / 550'	59 dBA	60 dBA	60 dBA	66 dBA	NO
94 – Residential	450' / 450'	59 dBA	61 dBA	61 dBA	66 dBA	NO
95 – Residential	420' / 420'	61 dBA	63 dBA	63 dBA	66 dBA	NO
96 – Residential	530' / 530'	60 dBA	61 dBA	61 dBA	66 dBA	NO
97 – Residential	610' / 610'	59 dBA	61 dBA	61 dBA	66 dBA	NO
98 – Residential	610' / 610'	60 dBA	61 dBA	61 dBA	66 dBA	NO
99 – Residential	600' / 600'	60 dBA	61 dBA	61 dBA	66 dBA	NO
100 – Residential	610' / 610'	60 dBA	62 dBA	62 dBA	66 dBA	NO
101 – Residential	600' / 600'	57 dBA	58 dBA	58 dBA	66 dBA	NO
102 – Residential	540' / 540'	59 dBA	61 dBA	61 dBA	66 dBA	NO
103 – Residential	500' / 500'	60 dBA	62 dBA	62 dBA	66 dBA	NO
104 – Residential	450' / 450'	61 dBA	63 dBA	63 dBA	66 dBA	NO
105 – Residential	410' / 410'	62 dBA	64 dBA	64 dBA	66 dBA	NO
106 – Residential	370' / 370'	63 dBA	65 dBA	65 dBA	66 dBA	NO
107 – Residential	330' / 330'	64 dBA	66 dBA	66 dBA	66 dBA	YES
108 – Residential	280' / 280'	67 dBA	69 dBA	69 dBA	66 dBA	YES
109 – Residential	270' / 270'	68 dBA	70 dBA	70 dBA	66 dBA	YES
110 – Residential	320' / 320'	66 dBA	68 dBA	68 dBA	66 dBA	YES
111 – Residential	370' / 370'	65 dBA	67 dBA	67 dBA	66 dBA	YES
112 – Residential	410' / 410'	64 dBA	65 dBA	65 dBA	66 dBA	NO
113 – Residential	460' / 460'	63 dBA	64 dBA	64 dBA	66 dBA	NO
114 – Residential	500' / 500'	62 dBA	64 dBA	64 dBA	66 dBA	NO
115 – Residential	540' / 540'	61 dBA	63 dBA	63 dBA	66 dBA	NO
116 – Residential	590' / 590'	59 dBA	61 dBA	61 dBA	66 dBA	NO
117 – Residential	660' / 660'	57 dBA	58 dBA	59 dBA	66 dBA	NO
118 – Residential	590' / 590'	59 dBA	61 dBA	61 dBA	66 dBA	NO
119 – Residential	590' / 590'	60 dBA	62 dBA	62 dBA	66 dBA	NO
120 – Residential	600' / 600'	60 dBA	61 dBA	61 dBA	66 dBA	NO
121 – Residential	540' / 540'	60 dBA	61 dBA	62 dBA	66 dBA	NO
122 – Residential	470' / 470'	60 dBA	61 dBA	62 dBA	66 dBA	NO
123 – Residential	420' / 420'	61 dBA	63 dBA	63 dBA	66 dBA	NO
124 – Residential	360' / 360'	62 dBA	64 dBA	64 dBA	66 dBA	NO
125 – Residential	310' / 310'	68 dBA	69 dBA	70 dBA	66 dBA	YES
126 – Residential	300' / 300'	66 dBA	68 dBA	68 dBA	66 dBA	YES
127 – Residential	350' / 350'	59 dBA	61 dBA	61 dBA	66 dBA	NO
128 – Residential	340' / 340'	58 dBA	60 dBA	60 dBA	66 dBA	NO
129 – Residential	260' / 260'	66 dBA	68 dBA	68 dBA	66 dBA	YES
130 – Residential	330' / 330'	58 dBA	60 dBA	61 dBA	66 dBA	NO
131 – Residential	270' / 270'	67 dBA	69 dBA	70 dBA	66 dBA	YES
132 – Residential	300' / 300'	65 dBA	66 dBA	67 dBA	66 dBA	YES
133 – Residential	330' / 330'	64 dBA	65 dBA	65 dBA	66 dBA	NO
134 – Residential	400' / 400'	62 dBA	63 dBA	64 dBA	66 dBA	NO
135 – Residential	430' / 430'	61 dBA	62 dBA	63 dBA	66 dBA	NO
136 – Residential	470' / 470'	59 dBA	61 dBA	61 dBA	66 dBA	NO
137 – Residential	450' / 450'	59 dBA	60 dBA	61 dBA	66 dBA	NO
138 – Residential	410' / 410'	62 dBA	63 dBA	63 dBA	66 dBA	NO

TABLE 7. Summary of Noise Prediction Results by Sensitive Receiver (Continued)

Receiver ID & Land Use	Distance to Roadway Centerline (Existing / Build)	2005 Existing Noise Level	2030 No-Build Noise Level	2030 Build Noise Level	Leq Noise Abatement Criteria	2030 Build Approaches or Exceeds Leq Criteria
139 – Residential	370' / 370'	64 dBA	64 dBA	65 dBA	66 dBA	NO
140 – Residential	320' / 320'	64 dBA	65 dBA	65 dBA	66 dBA	NO
141 – Residential	220' / 220'	66 dBA	67 dBA	68 dBA	66 dBA	YES
142 – Residential	260' / 260'	65 dBA	66 dBA	66 dBA	66 dBA	YES
143 – Residential	290' / 290'	64 dBA	65 dBA	65 dBA	66 dBA	NO
144 – Residential	220' / 220'	66 dBA	66 dBA	67 dBA	66 dBA	YES
145 – Residential	270' / 270'	64 dBA	65 dBA	65 dBA	66 dBA	NO
146 – Residential	310' / 310'	64 dBA	65 dBA	65 dBA	66 dBA	NO
147 – Residential	350' / 350'	62 dBA	63 dBA	64 dBA	66 dBA	NO
148 – Residential	140' / 140'	66 dBA	67 dBA	68 dBA	66 dBA	YES
149 – Residential	180' / 180'	63 dBA	64 dBA	65 dBA	66 dBA	NO
150 – Residential	250' / 250'	63 dBA	64 dBA	64 dBA	66 dBA	NO
151 – Residential	290' / 290'	62 dBA	63 dBA	64 dBA	66 dBA	NO
152 – Residential	990' / 990'	58 dBA	60 dBA	60 dBA	66 dBA	NO
153 – Residential	920' / 920'	60 dBA	62 dBA	63 dBA	66 dBA	NO
154 – Residential	780' / 780'	62 dBA	64 dBA	64 dBA	66 dBA	NO
155 – Residential	610' / 610'	65 dBA	66 dBA	67 dBA	66 dBA	YES
156 – Residential	540' / 540'	66 dBA	68 dBA	69 dBA	66 dBA	YES
157 – Residential	590' / 590'	66 dBA	68 dBA	69 dBA	66 dBA	YES
158 – Residential	390' / 390'	69 dBA	70 dBA	71 dBA	66 dBA	YES
159 – Residential	290' / 290'	71 dBA	73 dBA	72 dBA	66 dBA	YES
160 – Residential	270' / 270'	71 dBA	73 dBA	72 dBA	66 dBA	YES
161 – Residential	360' / 360'	69 dBA	71 dBA	71 dBA	66 dBA	YES
162 – Residential	210' / 210'	72 dBA	74 dBA	73 dBA	66 dBA	YES
163 – Residential	190' / 190'	72 dBA	74 dBA	74 dBA	66 dBA	YES
164 – Residential	300' / 300'	70 dBA	71 dBA	71 dBA	66 dBA	YES
165 – Residential	210' / 210'	73 dBA	74 dBA	74 dBA	66 dBA	YES
166 – Residential	370' / 370'	67 dBA	68 dBA	69 dBA	66 dBA	YES
167 – Residential	410' / 410'	66 dBA	67 dBA	68 dBA	66 dBA	YES
168 – Residential	260' / 260'	72 dBA	74 dBA	73 dBA	66 dBA	YES
169 – Residential	400' / 400'	67 dBA	69 dBA	70 dBA	66 dBA	YES
170 – Residential	420' / 420'	65 dBA	67 dBA	67 dBA	66 dBA	YES
171 – Residential	470' / 470'	64 dBA	66 dBA	66 dBA	66 dBA	YES
172 – Residential	320' / 320'	68 dBA	70 dBA	71 dBA	66 dBA	YES
173 – Residential	370' / 370'	66 dBA	67 dBA	69 dBA	66 dBA	YES
174 – Residential	420' / 420'	65 dBA	66 dBA	68 dBA	66 dBA	YES
175 – Residential	250' / 250'	70 dBA	71 dBA	73 dBA	66 dBA	YES
176 – Residential	320' / 320'	67 dBA	68 dBA	70 dBA	66 dBA	YES
177 – Commercial	620' / 620'	60 dBA	62 dBA	62 dBA	71 dBA	NO
178 – Residential	660' / 660'	65 dBA	66 dBA	66 dBA	66 dBA	YES
179 – Residential	560' / 560'	67 dBA	68 dBA	69 dBA	66 dBA	YES
180 – Residential	570' / 570'	58 dBA	60 dBA	62 dBA	66 dBA	NO
181 – Residential	560' / 560'	60 dBA	62 dBA	63 dBA	66 dBA	NO
182 – Residential	560' / 560'	58 dBA	60 dBA	61 dBA	66 dBA	NO
183 – Residential	540' / 540'	58 dBA	60 dBA	61 dBA	66 dBA	NO
184 – Residential	520' / 520'	58 dBA	59 dBA	60 dBA	66 dBA	NO

TABLE 7. Summary of Noise Prediction Results by Sensitive Receiver (Continued)

Receiver ID & Land Use	Distance to Roadway Centerline (Existing / Build)	2005 Existing Noise Level	2030 No-Build Noise Level	2030 Build Noise Level	Leq Noise Abatement Criteria	2030 Build Approaches or Exceeds Leq Criteria
185 – Residential	340' / 340'	69 dBA	71 dBA	73 dBA	66 dBA	YES
186 – Residential	320' / 320'	66 dBA	68 dBA	69 dBA	66 dBA	YES
187 – Residential	340' / 340'	66 dBA	67 dBA	68 dBA	66 dBA	YES
188 – Residential	230' / 230'	73 dBA	74 dBA	76 dBA	66 dBA	YES
189 – Residential	300' / 300'	68 dBA	69 dBA	71 dBA	66 dBA	YES
190 – Residential	160' / 160'	74 dBA	75 dBA	76 dBA	66 dBA	YES
191 – Residential	190' / 190'	71 dBA	72 dBA	74 dBA	66 dBA	YES
192 – Residential	240' / 240'	68 dBA	70 dBA	72 dBA	66 dBA	YES
193 – Residential	330' / 330'	67 dBA	68 dBA	70 dBA	66 dBA	YES
194 – Residential	280' / 270'	68 dBA	69 dBA	71 dBA	66 dBA	YES
195 – Residential	290' / 280'	65 dBA	67 dBA	69 dBA	66 dBA	YES
196 – Residential	310' / 300'	65 dBA	67 dBA	69 dBA	66 dBA	YES
197 – Residential	380' / 370'	63 dBA	65 dBA	67 dBA	66 dBA	YES
198 – Residential	210' / 200'	71 dBA	72 dBA	74 dBA	66 dBA	YES
199 – Residential	240' / 220'	70 dBA	72 dBA	72 dBA	66 dBA	YES
200 – Residential	250' / 230'	66 dBA	68 dBA	69 dBA	66 dBA	YES
201 – Residential	360' / 340'	63 dBA	65 dBA	65 dBA	66 dBA	NO
202 – Residential	340' / 310'	64 dBA	65 dBA	65 dBA	66 dBA	NO
203 – Residential	330' / 300'	64 dBA	66 dBA	67 dBA	66 dBA	YES
204 – Residential	330' / 300'	65 dBA	66 dBA	68 dBA	66 dBA	YES
205 – Residential	340' / 310'	64 dBA	65 dBA	67 dBA	66 dBA	YES
206 – Residential	350' / 310'	64 dBA	66 dBA	67 dBA	66 dBA	YES
207 – Residential	370' / 350'	64 dBA	66 dBA	68 dBA	66 dBA	YES
208 – Residential	380' / 360'	64 dBA	66 dBA	65 dBA	66 dBA	NO
209 – Residential	410' / 390'	63 dBA	65 dBA	65 dBA	66 dBA	NO
210 – Residential	340' / 310'	63 dBA	65 dBA	66 dBA	66 dBA	YES
211 – Residential	370' / 340'	62 dBA	64 dBA	65 dBA	66 dBA	NO
212 – Residential	440' / 400'	61 dBA	63 dBA	64 dBA	66 dBA	NO
213 – Residential	490' / 450'	61 dBA	63 dBA	63 dBA	66 dBA	NO
214 – Residential	540' / 500'	61 dBA	63 dBA	63 dBA	66 dBA	NO
215 – Residential	590' / 540'	61 dBA	62 dBA	63 dBA	66 dBA	NO
216 – Recreational	300' / 250'	62 dBA	64 dBA	66 dBA	66 dBA	YES
217 – Recreational	1100' / 1060'	57 dBA	59 dBA	60 dBA	66 dBA	NO
218 – Residential	350' / 350'	61 dBA	62 dBA	63 dBA	66 dBA	NO
219 – Residential	400' / 400'	64 dBA	64 dBA	64 dBA	66 dBA	NO
220 – Residential	450' / 450'	63 dBA	63 dBA	63 dBA	66 dBA	NO
221 – Residential	370' / 370'	62 dBA	63 dBA	64 dBA	66 dBA	NO
222 – Residential	390' / 390'	60 dBA	61 dBA	62 dBA	66 dBA	NO
223 – Residential	340' / 340'	65 dBA	67 dBA	67 dBA	66 dBA	YES
224 – Residential	400' / 400'	64 dBA	66 dBA	67 dBA	66 dBA	YES
225 – Residential	480' / 470'	63 dBA	65 dBA	65 dBA	66 dBA	NO
226 – Residential	530' / 530'	63 dBA	65 dBA	65 dBA	66 dBA	NO
227 – Residential	760' / 760'	63 dBA	64 dBA	65 dBA	66 dBA	NO
228 – Residential	640' / 630'	63 dBA	64 dBA	64 dBA	66 dBA	NO
229 – Residential	630' / 620'	63 dBA	64 dBA	65 dBA	66 dBA	NO
230 – Residential	430' / 430'	66 dBA	67 dBA	69 dBA	66 dBA	YES

TABLE 7. Summary of Noise Prediction Results by Sensitive Receiver (Continued)

Receiver ID & Land Use	Distance to Roadway Centerline (Existing / Build)	2005 Existing Noise Level	2030 No-Build Noise Level	2030 Build Noise Level	Leq Noise Abatement Criteria	2030 Build Approaches or Exceeds Leq Criteria
231 - Residential	420' / 420'	66 dBA	67 dBA	69 dBA	66 dBA	YES
232 - Residential	480' / 480'	64 dBA	65 dBA	67 dBA	66 dBA	YES
233 - Residential	500' / 490'	64 dBA	65 dBA	67 dBA	66 dBA	YES
234 - Residential	560' / 560'	62 dBA	63 dBA	65 dBA	66 dBA	NO
235 - Residential	550' / 550'	62 dBA	63 dBA	65 dBA	66 dBA	NO
236 - Residential	460' / 450'	61 dBA	63 dBA	65 dBA	66 dBA	NO
237 - Residential	520' / 510'	62 dBA	63 dBA	64 dBA	66 dBA	NO
238 - Residential	580' / 570'	61 dBA	62 dBA	63 dBA	66 dBA	NO
239 - Residential	480' / 470'	61 dBA	62 dBA	63 dBA	66 dBA	NO
240 - Residential	580' / 570'	61 dBA	62 dBA	62 dBA	66 dBA	NO
241 - Residential	530' / 510'	61 dBA	62 dBA	63 dBA	66 dBA	NO
242 - Residential	460' / 440'	62 dBA	64 dBA	65 dBA	66 dBA	NO
243 - Residential	470' / 440'	62 dBA	64 dBA	65 dBA	66 dBA	NO
244 - Recreational	610' / 610'	60 dBA	61 dBA	61 dBA	66 dBA	NO
245 - Residential	540' / 540'	64 dBA	65 dBA	65 dBA	66 dBA	NO
246 - Residential	500' / 490'	64 dBA	66 dBA	67 dBA	66 dBA	YES
247 - Residential	460' / 450'	64 dBA	66 dBA	67 dBA	66 dBA	YES
248 - Residential	500' / 500'	63 dBA	65 dBA	65 dBA	66 dBA	NO
249 - Residential	530' / 530'	63 dBA	64 dBA	65 dBA	66 dBA	NO
250 - Residential	480' / 490'	62 dBA	64 dBA	65 dBA	66 dBA	NO
251 - Residential	640' / 620'	61 dBA	62 dBA	62 dBA	66 dBA	NO
252 - Recreational	460' / 460'	58 dBA	59 dBA	59 dBA	66 dBA	NO

REFERENCES

23 Code of Federal Regulations (CFR) Part 772.

US Department of Transportation, Federal Highway Administration, "Highway Traffic Noise Analysis and Abatement Policy and Guidance", June 1995.

US Department of Transportation, Federal Highway Administration, "Analysis of Highway Construction Noise", March 13, 1984.

Nebraska Department of Roads "Noise Analysis and Abatement Policy," May, 1998.

City of Omaha GIS Files

Lauritzen Botanical Gardens website :
http://www.omahabotanicalgardens.org/About_the_Garden/Kenefick_Park/

The introductory section of this study was taken in part from "Guide on Evaluation and Attenuation of Traffic Noise" prepared by American Association of State Highway and Transportation Officials.

APPENDIX

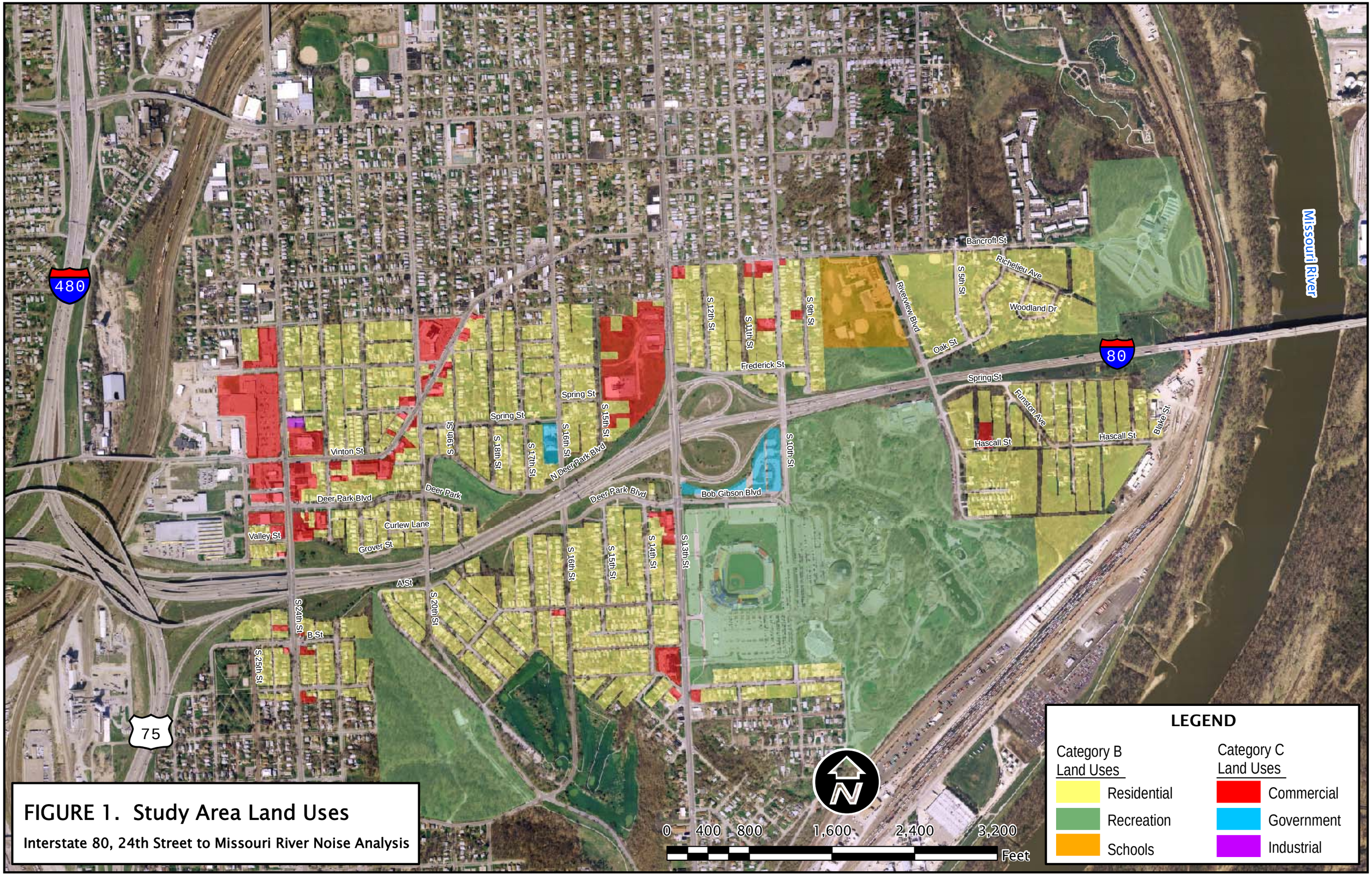


FIGURE 1. Study Area Land Uses

Interstate 80, 24th Street to Missouri River Noise Analysis

FIGURE 2. Build Scenario Predicted Noise Impacts

Interstate 80, 24th Street to Missouri River Noise Analysis

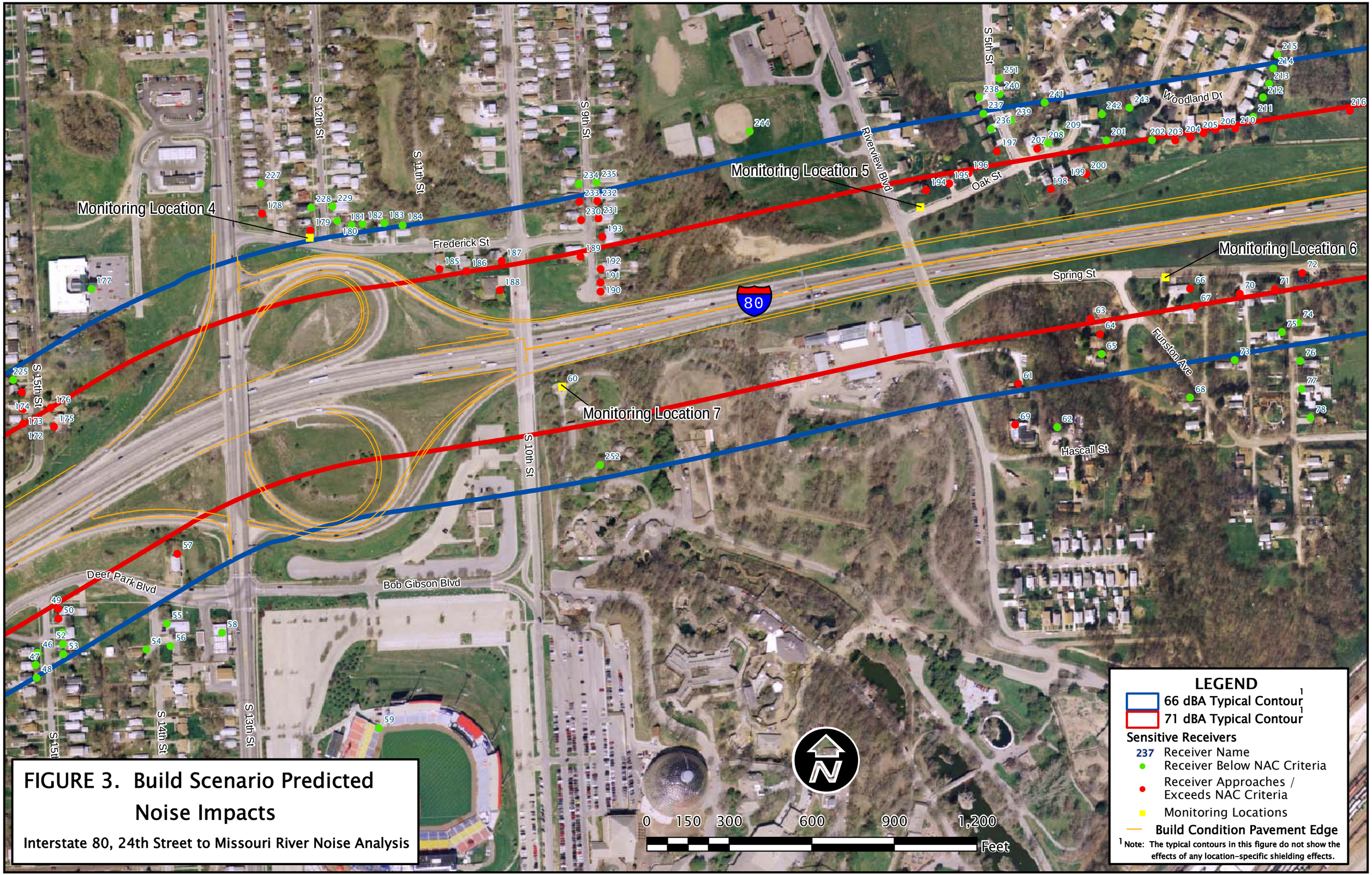


FIGURE 3. Build Scenario Predicted Noise Impacts

Interstate 80, 24th Street to Missouri River Noise Analysis

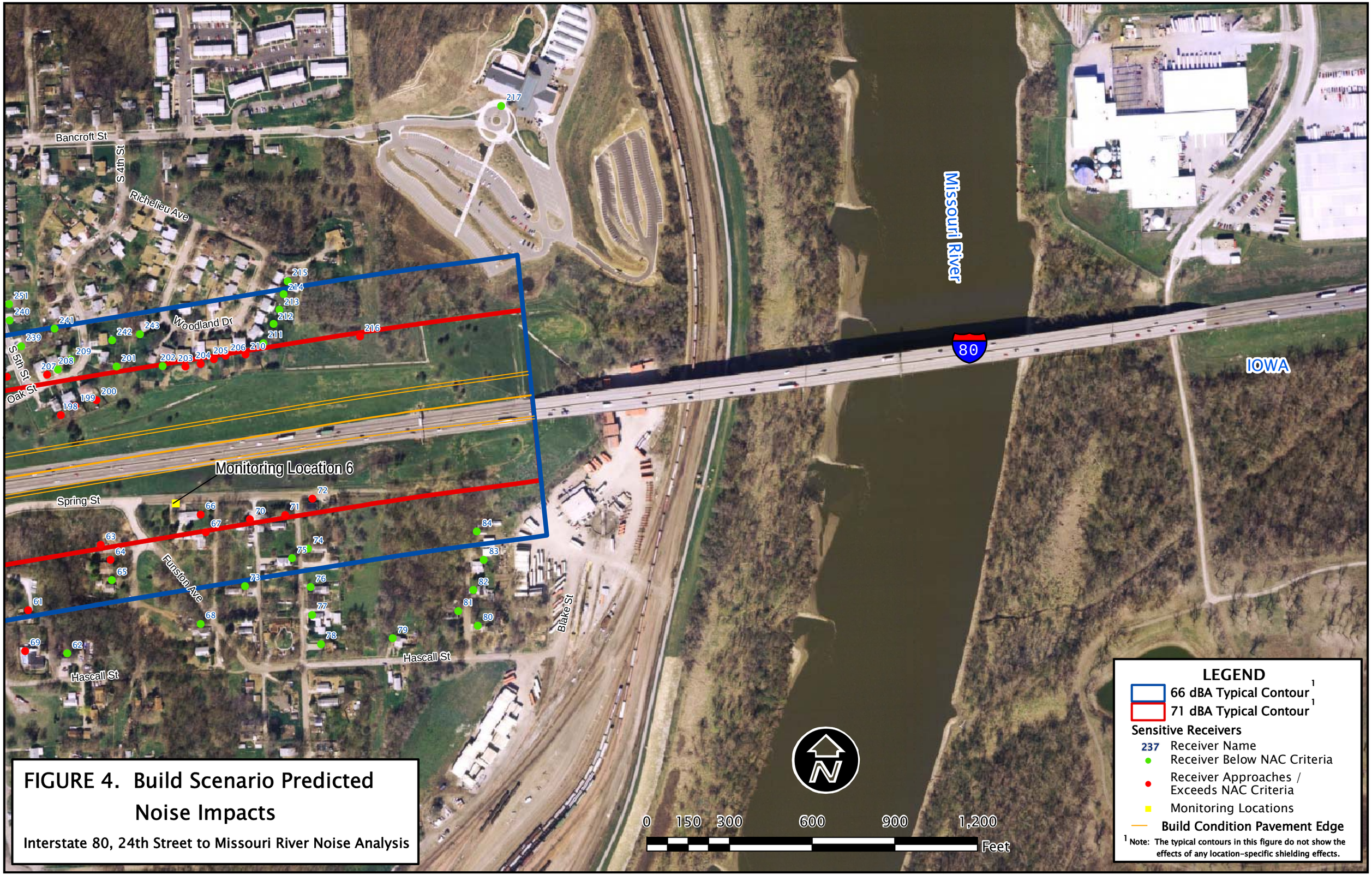


FIGURE 4. Build Scenario Predicted Noise Impacts

Interstate 80, 24th Street to Missouri River Noise Analysis

FIGURE 5. Locations Evaluated for Mitigation

Interstate 80, 24th Street to Missouri River Noise Analysis

APPENDIX E

AIR QUALITY MODELING REPORT

Interstate-80: 24th Street Bridge to Missouri River Bridge

Air Quality Report NH-80-9[889]

August 2006

Prepared for:
Nebraska Department of Roads

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

PROJECT DESCRIPTION

The proposed roadway project involves the expansion of Interstate 80 (I-80) to nine lanes, for approximately 1.66 miles from the 24th Street overpass in Omaha, Nebraska to west side of the Missouri River bridge. The project will be compatible with the Iowa Department of Transportation's reconstruction of the Council Bluffs Interstate system.

The purpose of this air quality study report is to:

- Provide an overview of the air quality status and requirements in Nebraska.
- Evaluate existing ambient concentrations and traffic-related Carbon Monoxide (CO) contributions in the corridor.
- Predict future year 2030 CO concentrations in the corridor for both the no-build and build scenarios.
- Summarize the roadway project's predicted compliance with Federal and state air quality requirements.

The study area is shown in Figure 1.

BACKGROUND

The Nebraska State Implementation Plan (SIP) required by Section 110 of the Clean Air Act of 1970 establishes that proposed projects do not interfere with the attainment or maintenance of the National Ambient Air Quality Standards (NAAQS). The SIP is a collection of regulations and actions that explain how a state will meet the Clean Air Act requirements.

The primary pollutants (called "criteria" pollutants) established by the Clean Air Act include: carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM), ozone (O_3) and lead (Pb). In terms of tons per year, carbon monoxide is the major pollutant, and transportation activities are the major carbon monoxide contributor. Therefore, the environmental documentation for this project will include an evaluation of the carbon monoxide concentrations that would result from the project.

CO is a colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline and wood. Once entering the body, CO affects humans by inhibiting the ability of oxygen to reach cells, tissues and organs; high-level exposures to carbon monoxide can cause serious health effects, particularly people with cardiopulmonary problems.

The NAAQS include primary standards for CO, as outlined in Section 109 of the Clean Air Act and Title 129 of Nebraska Air Quality Regulations. These standards are:

- 9.0 parts per million as a maximum 8-hour concentration not to be exceeded more than once a year.
- 35 parts per million as a maximum 1-hour concentration not to be exceeded more than once a year.

These standards are not be exceeded more than once per year. The Clean Air Act established and set forth air quality conformity and priority procedures for projects in non-attainment areas to achieve the NAAQS. In nonattainment states, these procedures may include placing controls on the transportation system. **All areas within Nebraska, including the Omaha metropolitan area, meet the NAAQS and are classified as "in attainment".**

METHODOLOGY

The air quality analysis for this report utilized the MOBILE 6.2.03 and CAL3QHC (version dated 04244) computer models. MOBILE is an emission factor model used to predict highway emissions from motor vehicles under various conditions. The CAL3QHC model is used to estimate total air pollutant concentrations adjacent to roadways from both moving and idling vehicles. The traffic emission factors estimated by using MOBILE 6.2 were used as input for the CAL3QHC model.

Mobile 6 Application

MOBILE 6.2 allows the user to estimate mobile-source emission factors by vehicle type, calendar year (for both current year and future year), and region. The MOBILE model has evolved over the past three decades to reflect improved data and changes in vehicle engine / emission control technologies. MOBILE 6.2 is based on the latest vehicle emission rates available and allows inputs such as ambient temperature and percent of cold starts as well as the traffic parameters.

The Mobile 6.2 inputs included:

- Default values were used to estimate the operating mode/percent of cold starts and vehicle fleet mix in the study area.
- To reflect worst emission conditions, the Mobile 6 inputs for minimum and maximum temperatures were set to 11.1 degrees Fahrenheit and 30.5 degrees Fahrenheit, reflecting local average minimum and maximum temperatures for January, the coldest month. Vehicle emission rates are highest during the winter months when temperatures are coldest.
- There is extensive use of oxygenated fuels in the Omaha area. Ethanol (10 percent by volume) has a 63.1 percent market share in the state of Nebraska, and this level of oxygenated fuel usage was assumed.

The CO emission rates for both 2005 and 2030 used for this project are shown in Table 1, by applicable vehicle speed.

TABLE 1 – Estimated CO Emission Rates for I-80, 24th Street to Missouri River Bridge by Analysis Year and Vehicle Speed

Analysis Year	Vehicle Speed / Facility Type	CO Emissions Rate
2005	Idling	169.5 Grams/Vehicle Hour (G/Veh-Hr)
	25 mph / Loop Ramps	25.9 Grams/Vehicle Mile (G/Veh-Mi)
	35 mph / Ramps	25.5 G/Veh-Mi
	25 mph / Local Street	25.3 G/Veh-Mi
	35 mph / Arterial Street	24.8 G/Veh-Mi
	60 mph / Freeway	29.7 G/Veh-Mi
2030	Idling	77.8 G/Veh-Hr
	25 mph / Loop Ramps	13.1 G/Veh-Mi
	35 mph / Ramps	13.0 G/Veh-Mi
	25 mph / Local Street	13.0 G/Veh-Mi
	35 mph / Arterial Street	12.7 G/Veh-Mi
	60 mph / Freeway	15.1 G/Veh-Mi

CAL3QHC Application

The I-80 corridor between 24th Street and the Missouri River includes several signalized intersections adjacent to the interstate. It was predicted that a location along the interstate that was adjacent to a signalized intersection would be the source of the highest CO concentrations in the corridor. The application of CAL3QHC for the CO analysis is outlined in the following steps:

1. Implement a screening process that identifies the signalized intersection with highest levels of queuing, idling traffic adjacent to I-80 (within 1000 feet of the mainline). The CO concentrations at this site would include emission contributions from both vehicles idling at the intersection and vehicles traveling on I-80. Thus, this screening process should identify the "worst case" for the study area; the site with the highest CO concentrations.
2. Locate receptors in a manner that sufficiently represents the sidewalks and properties (i.e., areas where the general public is likely to have access over significant time periods), in accordance with guidance from EPA. Receptors were placed in a relatively dense manner (every 25 to 50 feet) along sidewalks and at properties most adjacent to the studied roadways, such that the location where the maximum total concentration would occur is evaluated.
3. If this "worst case" screening process finds an exceedance of the NAAQS, a Tier II analysis would need to be performed with the CAL3QHCR model. The Tier II analysis would estimate CO concentrations at the receptors based on five years' worth of historical hourly meteorological data and vehicular emissions, detailed hourly traffic volumes and signalization data for the entire study area.

Worst probable meteorological inputs were used to identify CO concentrations in the study area, and were based on the sensitivity analysis found in the CALQ3HC users manual. These inputs were:

- Wind Speed: 1 meter/second
- Stability Class: D for an urban area
- Surface Roughness: 108 for single-family residential
- Mixing Height: 1000 meters
- Average Time: 60 minutes
- Receptor Height: 6 feet
- Wind Direction: Worst case determined in 5 degree increment

Traffic Parameters

Existing and forecasted traffic volumes in the study area are documented in Table 2. The traffic volumes are based on the same data used for the noise study, but were supplemented with peak hour turning movement volumes supplied by the City of Omaha. Speeds by facility type are used in Mobile 6.2 to estimate emissions factors by roadway. The speeds were based on posted speeds in the corridor.

Ambient Background CO Concentrations

Ambient background CO concentrations for the study area were based on 2005 levels monitored in Omaha. The monitoring data were obtained from a continuous carbon monoxide monitoring station located near the area of 30th Street / Fort Street in Omaha on the Metro Community College's Fort Omaha Campus. The monitoring station is approximately five miles from the study area, situated in a part of the city that has an urban development pattern that effectively reflects the I-80 study area. At the 30th Street / Fort Street monitoring station, the second highest observations during 2005 were:

- 1-hour CO observation: 3.2 parts per million (ppm)
- 8-hour CO observation: 2.4 ppm

TABLE 2. Design Hourly Traffic Volumes for Existing (2005) and Future Year (2030) Air Quality Analysis

Roadway Segment	2005 Vehicles	2030 Vehicles
Eastbound I-80 Segments		
I-80 west of 24th St off-ramp	3,540	4,842
I-80 west of US75/I-480 on-ramp	3,135	4,385
I-80 west of 13th St off-ramp	4,218	6,031
I-80 west of 13th St on-ramp	3,472	5,230
I-80 west of Missouri River	3,838	5,730
Eastbound I-80 Ramps		
24th Street off-ramp	405	457
US 75/I-480 on-ramp	1,083	1,646
13th St SB off-ramp	259	329
13th St NB loop off-ramp	488	472
13th St on-ramp	367	500
Westbound I-80 Segments		
I-80 west of Missouri River	2,998	4,790
I-80 west of 13th St off-ramp	2,691	4,341
I-80 west of 13th St NB loop on-ramp	2,969	4,583
I-80 west of 13th St SB on-ramp	3,655	5,377
I-80 west of US75/I-480 off-ramps	2,547	3,658
I-80 west of 24th St on-ramp	2,723	3,865
Westbound I-80 Ramps		
13th Street off-ramp	331	482
13th Street NB loop on-ramp	295	305
13th Street SB on-ramp	788	869
US 75/I-480 off-ramp	1,108	1,719
24th Street on-ramp	176	207
Crossing Streets		
24th Street South of I-80	1,647	1,951
24th Street between ramps	1,730	2,016
24th Street North of I-80	1,902	2,260
20th Street at I-80	373	396
16th Street at I-80	173	288
13th Street South of I-80	1,545	1,670
13th Street between ramps	1,844	1,999
13th Street North of I-80	2,436	2,707
Frederick Street	120	130
10th Street at I-80	374	420
Riverview Boulevard at I-80	220	264

Study Area CO Concentrations

Based on the methodology described above, CO concentrations were calculated using the parameters and inputs previously listed for the existing (2005) and future year (2030) project scenarios. A summary of the second-highest 1-hour and 8-hour CO concentrations for 2005 and 2030 are shown in Table 3, as well as the NAAQS for CO.

The predicted study area concentrations documented in Table 3 include contributions from both vehicular traffic and ambient background concentrations documented

previously. For instance, the existing scenario 1-hour CO concentration reported in Table 3 includes both a predicted traffic contribution of 5.1 ppm and monitored background contribution of 3.2 ppm (5.1 ppm + 3.2 ppm = 8.3 ppm).

The 8-hour CO concentrations were calculated through two steps:

1. *Apply the EPA-recommended persistence factor of 0.7 to the 1-hour* ***traffic*** *contributions*. The traffic contributions are the estimated worst-case scenario concentrations not including background contributions. For instance, the one-hour traffic contribution for the 2005 existing scenario is 5.1 ppm. Thus, the eight-hour traffic contribution for the 2005 existing scenario would be 3.6 ppm (5.1 ppm x 0.7 = 3.6 ppm).
2. *Add the eight-hour traffic contribution to the second highest monitored 8-hour ambient concentration of 2.4 ppm*. Thus, the eight-hour predicted concentration (combined traffic contribution of 3.6 ppm plus the background contribution of 2.4 ppm) is 6.0 ppm.

Table 3. Summary of Second-Highest Hourly Predicted CO Concentrations and National Ambient Air Quality Standards

Year / Scenario	Predicted 1-Hour CO Concentration	Predicted 8-Hour CO Concentration	1-Hour NAAQS for CO	8-Hour NAAQS for CO
2005 Existing	8.3	6.0	35.0 ppm	9.0 ppm
2030 No-Build	6.9	5.0	35.0 ppm	9.0 ppm
2030 Build	6.9	5.0	35.0 ppm	9.0 ppm

As documented in Table 3, the CO emissions associated with the project are not predicted to exceed the NAAQS.

Compliance With State and Federal Air Pollution Rules

The procedures followed in this report come from FHWA Technical Advisory T 6640.8a "Air Quality Impacts"; and 23 CFR 770 "Air Quality Conformity and Priority Procedures for use in Federal-Aid Highway and Federally Funded Transit Programs". The air quality report must be done in coordination with the state's Department of Environmental Quality Agency. This air quality report will be a part of the project environmental document, which will be sent to the Nebraska Department of Environmental Quality for their review and comments.

Precautions established by the Nebraska Department of Environmental Quality, such as the application of water to areas to reduce airborne dust, and the use of dust control devices on certain construction equipment as required by "Title 129 – Nebraska Air Quality Regulations" will be employed to reduce or limit fugitive dust potentially associated with construction projects.

CONCLUSION

This project's carbon monoxide contribution combined with the study area ambient background concentrations are predicted to be below the 1-hour and 8-hour National Ambient Air Quality Standards for the build year 2030 scenario. Therefore, the proposed improvement to Interstate 80 is consistent with the State Implementation Plan.

REFERENCES

MOBILE 6.2 and the "User's Guide to MOBILE 6.1 and MOBILE 6.2" (EPA420-R-03-010), August 2003.

The computer program CAL3QHC and the "User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections" (EPA-454/R-92-006 - Revised), September 1995.

FHWA's Technical Advisory T 6640.8A, "Guidance Material for the Preparation of Environmental Documents," November 27, 1987.

FEDERAL-AID POLICY GUIDE, December 9, 1991, Transmittal I, 23 CFR 770; SUBCHAPTER H - RIGHT-OF-WAY AND ENVIRONMENT, PART 770 - AIR QUALITY CONFORMITY AND PRIORITY PROCEDURES FOR USE IN FEDERAL-AID HIGHWAY AND FEDERALLY FUNDED TRANSIT PROGRAMS.

"Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9 (Revised)" (EPA-450/4-78-001), September 1978.

Weather data from: http://www.nebraksaclimateoffice.unl.edu/normals.htm

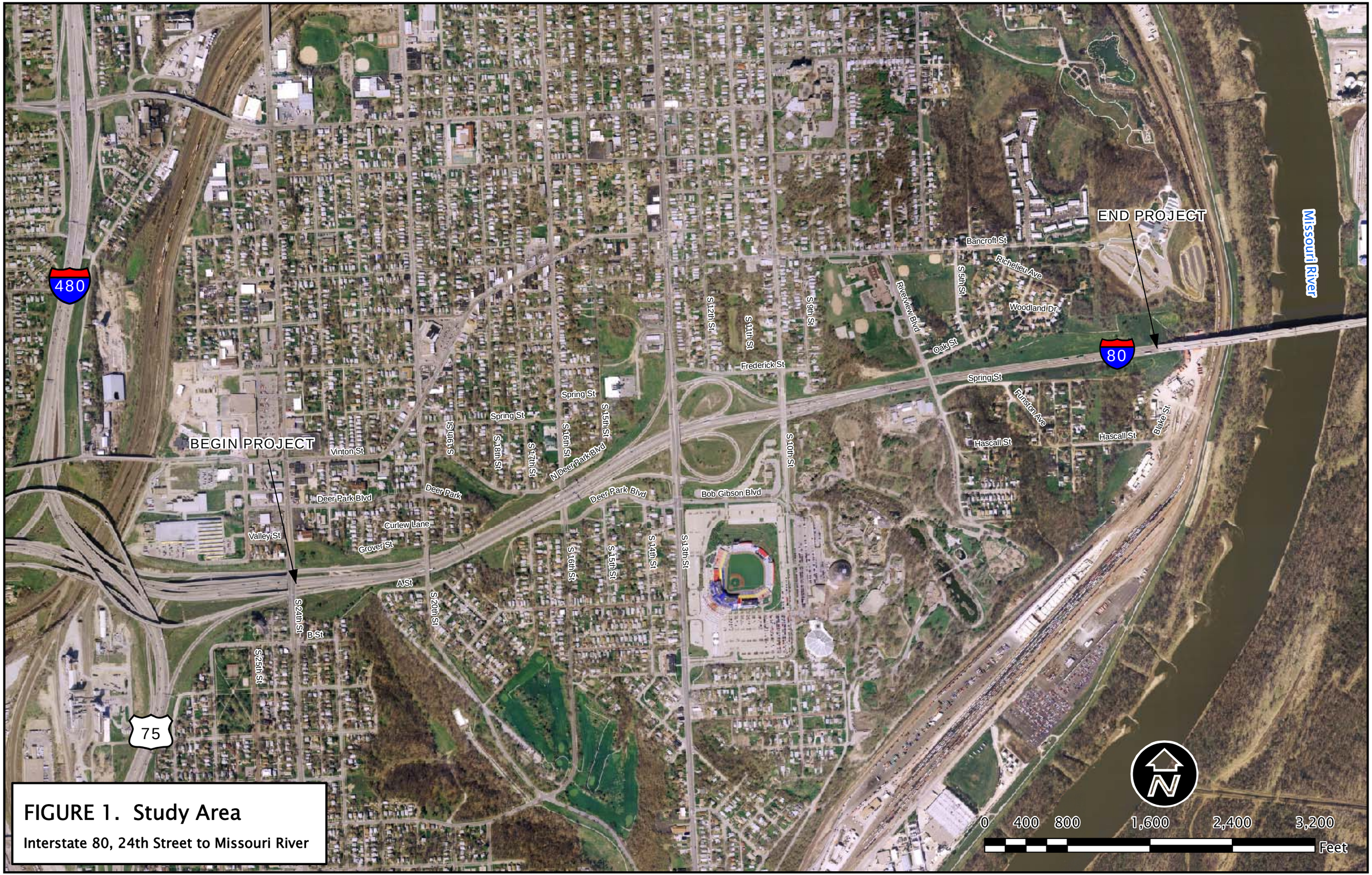


FIGURE 1. Study Area

Interstate 80, 24th Street to Missouri River