Council Bluffs Interstate System Improvements Project
Pottawattamie County, Iowa and Douglas County, Nebraska
Project Number: IM-029-3(62)54—13-78

TIER 1
DRAFT ENVIRONMENTAL IMPACT STATEMENT

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

Cooperating Agencies
U.S. Coast Guard

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.

11/23/04 — Date of Approval — Michael LaPietra — For Federal Highway Administration

11/23/04 — Date of Approval — Stephen G. Lamm — For Iowa Department of Transportation

11/19/04 — Date of Approval — Arthur B. Yonkey CEV — For Nebraska Department of Roads

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The Iowa Department of Transportation and Nebraska Department of Roads, in conjunction with FHWA, have initiated studies for the improvement of the Council Bluffs Interstate System in Council Bluffs, Iowa and Omaha, Nebraska. The project area includes approximately 18 mainline-miles of interstate and 14 interchanges (3 interstate-to-interstate, and 11 interstate-to-local street). The Study Area lies within Pottawattamie County, Iowa, and Douglas County, Nebraska. The project area includes I-80 from east of the I-480 interchange in Omaha, Nebraska, east to U.S. 6 (Kanesville Blvd.). It also includes Interstate 29 (I-29), between 25th Avenue on the north to just south of U.S. 275, and Interstate 480 (I-480) from the Missouri River Bridge on the Iowa side to the I-29 interchange. The study considers improvements that would add capacity, and correct design issues along the mainline and interchanges, and upgrade the I-80 Missouri River Crossing. This Draft Environmental Impact Statement (DEIS) considers a range of improvement alternatives including improving the existing interstate system, improving other modes of transportation, improving other roadways, constructing a new cross-town roadway, as well as transportation management strategies.

Comments on this draft EIS are due by FEB 28 2005 and should be sent to James P. Rost, Iowa DOT as listed above.

Executive Summary

Summary of Proposed Action

The Iowa Department of Transportation (Iowa DOT), Nebraska Department of Roads (NDOR), and the Federal Highway Administration (FHWA) are proposing to improve the interstate system around Council Bluffs with improvements extending across the Missouri River on I-80 to east of the I-480 interchange in Omaha, Nebraska, see Figure 1-1. The study considers long-term, broad-based transportation improvements along I-80, I-29, and I-480, including approximately 18 mainline miles of interstate and 14 interchanges (3 system[1], 11 service), that would add capacity and correct functional issues along the mainline and interchanges and upgrade the I-80 Missouri River Crossing. These improvements, once implemented, would bring the segments of I-80 and I-29 up to current engineering standards and modernize the roadway to accommodate future traffic needs.

In 2001, Iowa DOT and FHWA initiated the Council Bluffs Interstate System (CBIS) Improvements Project. The agencies concluded that the environmental study process would be conducted in two stages; that is, a tiered approach would be applied. The project is being conducted pursuant to the National Environmental Policy Act (NEPA) regulations issued by the Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) Part 1502.20, and FHWA 23 CFR Part 771.111, that permit tiering for large, complex NEPA studies.

Tier 1 is an examination of the overall interstate system improvement needs, including a clear explanation of the area's transportation needs, a study of alternatives to satisfy them, and broad consideration of potential environmental and social impacts. The Tier 1 evaluation is at a sufficient level of engineering and environmental detail to assist decision makers in selecting a preferred transportation strategy. Tier 1 includes preparation of a draft and final Environmental Impact Statement (EIS) that would disclose the potential environmental and social effects (evaluated at a planning level that considers a variety of conceptual designs) of the proposed improvements. The final EIS will conclude with a Record of Decision (ROD) that states the preferred plan for improvements to be implemented. Essentially, the Tier 1 document will establish the planning framework for the needed improvements.

Because the scope of the overall system improvements is large, the interstate improvements would be implemented as a series of individual projects that fit into the overall planning framework. The Tier 1 Area of Potential Impact, which is discussed in detail in Section 4 is an alternative that considers a combination of the most reasonable concepts that have been developed, buffered by approximately 100 or more feet to ensure that any Tier 2 design modifications would remain inside the outer boundary (see the introduction to Section 4 for detailed buffer information).

1 A system interchange provides connections between interstates and freeways. A service interchange provides connections between the interstate and local roads.

Toward the end of the Tier 1 process, selected Tier 2 NEPA studies will be initiated as necessary on individual segments of the CBIS. Section 2.4.1, Construction Alternative, identifies the termini of segments for proposed Tier 2 NEPA studies. Funding strategies and an implementation strategy will be developed in Tier 2. Individual NEPA documents will be prepared during Tier 2 at a level of detail sufficient to move elements of the plan toward construction. A specific alignment will also be determined, appropriate environmental studies completed, and mitigation plans specified. As part of the project development process, the Tier 2 NEPA studies will determine possible methods to avoid, minimize, and mitigate impacts on environmental resources.

The CBIS project is one of a series of projects underway in the region to improve mobility. Other major projects recently completed, under study, or under construction include improvements to I-80 within and around Omaha, improvements to US 275 and the US 275/I-29 interchange, expansion of the South Omaha Bridge, and improvements to Avenue G in Council Bluffs.

Summary of Purpose and Need for Proposed Action

The purpose of the Council Bluffs Interstate System Project is to examine needed transportation improvements in the Study Area that would address existing and future travel demands. The proposed improvements to the Council Bluffs Interstate System would add capacity and correct functional issues along the mainline and interchanges, and upgrade the I-80 Missouri River Crossing. Although built to meet the design standards in place at the time of construction, the existing roadway does not meet modern engineering standards[2]. Design features such as horizontal alignment, stopping and decision sight distance, and exit and entrance ramp design contribute to safety concerns. The age and condition of the facility are those of a facility approaching the end of its service life.

Traffic volumes along parts of the interstate system are expected to double by 2030. Consequently, most of the interstate system is expected to experience traffic volumes beyond its capacity. Together, these needs form the basis for improvements to the Council Bluffs Interstate System.

Summary of Alternatives

Alternatives are strategies that can satisfy the needs of the CBIS, as established in Section 1 of this Tier 1 analysis. This section discusses the range of alternatives developed for the CBIS, including roadway, transit improvements, bicycle/pedestrian facilities, transportation management strategies (including transportation system management [TSM] and transportation demand management [TDM]), improvements to arterial streets, and construction of a new cross-town roadway. Both the alternatives carried forward for detailed evaluation and those not carried forward are discussed below.

2 As defined by the American Association of State Highway and Transportation Officials (AASHTO), Iowa DOT, and NDOR

The array of alternatives that were considered to address the CBIS Improvements Project objectives included:

- Reconstruction of all or part of the interstate (Construction Alternative)
- No-Build
- Improvements to alternate modes of transportation (enhance transit accommodations/ expand bicycle and pedestrian trails)
- Transportation management strategies (TDM and TSM)
- Improvements to other metro-area roadways
- Construction of a new cross-town roadway

Based on the preliminary analysis, only the Construction Alternative was able to fully satisfy the purpose and need requirements, see Table S-1. For this reason, the Improvements to Alternate Modes of Transportation, Transportation Management Strategies, Improvements to Other Metro-area Roadways, and Construction of a New Cross-Town Roadway alternatives have not been carried forward for detailed evaluation. However, components of the alternatives not carried forward for detailed evaluation as stand-alone alternatives, will be incorporated into the Preferred Alternative where appropriate. Although it does not meet the purpose and need requirements, the No-Build Alternative has been carried forward as a baseline for comparison to the Preferred Alternative.

Construction Alternative

Under the Construction Alternative, the system would be improved to address existing and future issues in the study corridor, including insufficient capacity, deteriorating pavement and bridges, and outdated highway geometrics. Design elements within the build concepts evaluated include:

- Mainline widening (basic lanes)
- Auxiliary lanes (lane additions between onramps and offramps) to facilitate acceleration and deceleration
- Collector-distributor roads (divided roadway parallel to main freeway that eliminates weaving and reduces the number of entrances to and exits from the freeway while still providing access)
- Conversion of partial access interchanges to full access interchanges
- Consolidation of existing access points on the interstate
- Revised interchange configurations

Initially, the project examined the entire interstate system surrounding Council Bluffs as far north as the I-29/Highway 192 interchange. However, when the project purpose and need was developed and concept development and preliminary screening began, it became apparent that the issues to be addressed along the CBIS were not as prevalent in the northernmost segment of I-29. While the Highway 192 interchange is a partial interchange,

an analysis of traffic along the segment does not appear to necessitate improvements. Along this segment, the 2000 average daily travel is 19,500 and is projected to increase only to 26,600 by 2030. Thus, it currently does and will continue to function at Level of Service (LOS) B. Finally, sensitive resources including the Blackbird Marsh Wildlife area are located in this segment, and in response to agency concerns, avoidance of Blackbird Marsh was a priority in the development of concepts. For these reasons, the decision was made to eliminate the northern portion of I-29 from the study, and to focus on developing concepts to address the needs throughout the remainder of the corridor.

Once the study area was defined, all initial concepts were screened for cost and constructability impacts. An initial environmental evaluation, or assessment for reasonableness, was also conducted. Based on the environmental and engineering analysis, concepts that met the project's purpose, need, and design criteria were retained as part of the Construction Alternative. They will be carried forward for further evaluation in Tier 2. These concepts are subject to refinement as the project moves into Tier 2.

Under any implementation scenario, the Construction Alternative is a long-term improvement that will be implemented in segments over time, so a strategy has been developed (Figure 2-4). Three options were developed based on the requirement of independent utility and logical termini. The option recommended by Iowa DOT, NDOR, and FHWA includes the following segments:

- Segment 1—Nebraska I-80 section, including the Missouri River Bridge
- Segment 2—I-80 including the West System Interchange, the 24th Street interchange; Nebraska Avenue interchange; and the Union Pacific (UP) Railroad overpass
- Segment 3—I-29 including the East System Interchange, the South Expressway, U.S. 275, and Madison Avenue interchanges
- Segment 4—I-29 including the I-29/I-480/West Broadway System Interchange
- Segment 5—the northern section of I-80, including the Kanesville Boulevard interchange

These segments will be the individual segments evaluated in Tier 2 documents. Each segment will be analyzed separately using the appropriate NEPA documentation during Tier 2. The Construction Alternative is composed of multiple reasonable build concepts that remain under consideration. The concepts include both mainline concepts and interchange concepts. The concepts that remain under consideration are summarized below, and meet American Association of State Highway and Transportation Officials (AASHTO), DOT, and DOR design standards.

Construction Alternative—Mainline Concepts

- Improvements to the mainline throughout the Study Area address design speed, horizontal and vertical alignment, lane and shoulder width, pavement cross-slope, ramp spacing, weaving lengths, left-hand entrances and exits, lane balance and continuity, and additional capacity. For the segments in the corridor, multiple mainline concepts remain

under consideration and help establish the Tier 1 Construction Alternative.[3] These concepts will be carried into Tier 2.

Construction Alternative – Interchange Concepts

Concepts were considered at each of the 14 existing interchange locations and evaluated using the project purpose and need and established design criteria. At most interchange locations, multiple design concepts were retained for further consideration. In such instances, more than one concept was reasonable. The concepts that met purpose and need make up the Construction Alternative. A decision on whether or not to provide access at West Broadway, is being considered as part of Tier 1, as the provision of access is a system-level decision. Specifics on how access might be provided would be decided in Tier 2 if access is determined to be the preferred concept. Since this Tier 1 document addresses only the determination of the Construction Alternative as the preferred alternative, and specific concepts will be decided during Tier 2, Table 2-2 in Section 2, Alternatives, summarizes the interchange concepts still under consideration with respect to access changes. In general, these concepts provide comparable operational performance, meet design criteria, are constructable, and meet the project's purpose and need.

No-Build Alternative

The No-Build Alternative represents the base conditions for the Study Area and includes committed capacity and access improvements in the study corridor (i.e., the interstate system) and all planned off-system improvements per the Metropolitan Area Planning Agency's (MAPA) 2025 Long Range Transportation Plan (LRTP), as described in Subsection 2.3.2. Separate 2030 traffic forecasts were developed for the No-Build Alternative, under which traffic volumes would increase between 17 and 111[4] percent over the next 30 years[5]. By 2030, most segments of I-80 are expected to exceed capacity, with the remaining segments experiencing a significant decrease in the LOS. In the overlap section of I-80 and I-29, the 2030 No-Build forecasts will exceed the acceptable volume threshold of this section (assuming the widened eastbound cross-section) by approximately 65 percent. This alternative failed to meet the project's purpose and need, but was retained as a baseline for comparison to the Preferred Alternative as directed by the NEPA.

Committed improvements to the interstate include the addition of a third lane in the eastbound direction through the I-80/I-29 overlap section and partial reconstruction of the I-29/US 275 interchange to provide full access.

The off-system elements of the LRTP include:

- Widening of US 275 between the Missouri River Bridge and I-29 to four lanes, and expansion of the South Omaha Bridge
- Widening of 24th Street between I-80/I-29 and US 275 to four lanes

3 The concepts represent the largest area that would be needed to accommodate the traffic needs. The footprint is based on traffic modeling.
4 Different segments of the corridor will experience different volume increases over the planning period. The smallest increase in traffic volumes (17 percent) will occur in the vicinity of the I-29/I-480/West Broadway System Interchange; the largest increase, 111 percent will occur south of the East System Interchange
5 In the document, data are presented for both 2025 and 2030, because the data in the MAPA LRTP address 2025 projections whereas 2030 is the forecast horizon for this project.

- Widening of Madison Avenue between Bennett Avenue and East Broadway to four lanes
- Widening of US 6 between I-80 and Westfair to four lanes
- Widening of Avenue G between 7th and 16th Streets to four lanes and construction of a railroad viaduct
- Construction of a connector road/bridge from I-680 to Eppley Airfield

Under the No-Build scenario, traffic volumes would increase throughout the corridor. In the overlap section of I-80 and I-29, the 2030 No-Build forecasts will exceed the acceptable volumes (assuming the widened cross-section in the eastbound direction) by approximately 65 percent.

Associated with the increases of traffic volumes, the corridor will also experience a decline in level of service.

TABLE S-1
Alternatives Comparison

Purpose and Need Criteria	Construction	No-Build	Improvements to Alternate Modes of Transportation	Transportation Management Strategies	Improvements to Other Metro-area Roadways	Construction of a New Cross-Town Roadway
Reduce Congestion/ Provide for Projected Demand	●	○	◒	◒	◒	◒
Repair Existing Roadway Conditions	●	◒	◒	◒	◒	◒
Address Safety Issues	●	○	○	◒	○	○
Correct Design Issues	●	○	○	○	○	○
Accommodate Planned Development	●	○	◒	○	◒	○

● = Meets criteria ◒ = Partially meets criteria ○ = Does not meet criteria
Note: Routine maintenance included in the No-Build Alternative would also occur under the other alternatives.

Summary of Potential Impacts

To best estimate all impacts associated with the CBIS improvements, reconnaissance level environmental studies were conducted in a broad study area near the proposed improvements. The environmental and social effects of the Construction Alternative, discussed in Section 4, are based on the maximum area of potential impact associated with the Construction Alternative. This area of potential impact includes the multiple concepts that remain under consideration in each segment plus a buffer to ensure that the final design of the selected concept is fully contained within this footprint. Figure S-1 illustrates the Study Area and Area of Potential Impact for the CBIS Improvements Project. The

impacts would likely decrease when the concept in Tier 2 is selected. Table S-2 summarizes the environmental effects of the Construction Alternative as determined using readily available data including GIS and assorted surveys. These effects would be minimized as much as possible with the use of appropriate design techniques and considerations, construction methods, and mitigation measures. Specific mitigation measures selected for implementation will be addressed in the subsequent Tier 2 documents.

Identification of the Preferred Alternative

Based on the Tier 1 evaluation, the Construction Alternative has been identified as the preferred alternative. The final selection of an alternative will not be made until comments on the Draft EIS from the public hearing have been fully evaluated. The Final EIS and subsequent ROD will explain the reasons for the project decision, summarize any mitigation measures that will be incorporated in the project, and document any required Section 4(f) approval. During Tier 2, NEPA documents will be prepared for the five project segments. They will identify the preferred mainline concepts, and interchange(s) for each segment.

Summary of Decisions Associated with the Preferred Alternative —I-29 Access at West Broadway Interchange, I-29 / I-80 Overlap Cross Section and I-80 Missouri River Bridge Location

Typically, only systemwide planning decisions are made in Tier 1. However, decisions normally deferred to Tier 2 will be addressed for the following three locations:

- I-29/I-480/West Broadway System Interchange – full access provided between West Broadway and I-29
- I-29/I-80 overlap section – dual-divided vs. combined cross section
- I-80 Missouri River Bridge – location of bridge expansion north or south of existing

These decisions are presented in this document for review, and are open for public comment. Following the public hearing, the preferred action regarding each decision will be identified and presented. Tables S-3 and S-4 summarize the environmental effects associated with the three build decisions to be made in Tier 1. These decisions are described in detail in Section 2.5, and include the provision of direct access versus indirect access at Broadway from I-29, the Missouri River Bridge expansion, and the two concepts for the I-80/I-29 overlap section: combined freeway/dual divided. Because each of the build decisions still consists of multiple concepts, the effects of each decision are shown as a range of potential impacts.

There is currently no direct access from I-29 to and from West Broadway. The provision of such access would result in residential displacements, potential 4(f) impacts, and regulated materials impacts. The direct right-of-way requirements, wetland, and floodplain impacts are comparable across both the access and indirect access options.

TABLE S-2
Summary of Impacts

Estimated Resource Impacts [a]	Preferred Alternative [b]
Existing and Future Land Use	Minor conversion to transportation use from other land uses, and spot changes in development opportunities near I-480, along I-29 near Avenue G, and the area north of I-80.
Right-of-Way (ROW) [c] ROW Acquisition (acres)	1,121
Displacements	
Residences	297
Apartment complexes	8
Businesses	62
Economics	Increased profits due to more efficient travel and increased safety, increased opportunities in industries that supply materials and overhead items
Business/Employment	Employment and earnings from construction, temporary employment increases during the construction period (12.7 jobs/million $ construction), potential long-term job creation in certain industries (motor freight transport, warehouse, wholesale trade, and engineering-architectural services).
Tax Impacts	Increased local tax revenues due to construction
Property Values	No declines are expected.
Environmental Justice Access	Council Bluffs as a whole is 3 percent minority, 4.5 percent Hispanic/Latino, and has a median household income (1999) of $36,221. Within the Environmental Justice Study Area, six Iowa block groups have minority populations (8.0 percent were Hispanic and 5.9 percent minority) substantially higher than the general population of Council Bluffs. Omaha as a whole is 17.1 percent minority, 7.5 percent Hispanic/Latino, and has a median household income of $40,006. Within the EJ Study Area, ten Nebraska block groups have minority populations (30.7 percent Hispanic, 7.2 percent minority) substantially higher than the general population of Omaha. The median household income in block groups within the EJ Study Area is $42,804 in Iowa, and $30,919 in Nebraska. Eight block groups in Iowa and seven in Nebraska have higher poverty levels than city averages. Providing access at West Broadway remains under consideration and could affect these populations. The changes aim to reduce the amount of cut-through traffic from local roads, and concentrate this traffic on arterials, improving the safety and quality of life for those living near the interstate.
Neighborhoods, Community Services, Facilities	
Access	Access and continuity would be minimally affected. Overall, the changes would divert traffic from local roads onto arterials, ultimately facilitating movement and improving safety. Communities severed by construction of the interstate highway would remain unchanged. The project would not isolate or change the boundaries of any neighborhoods
Institutions	1 church, 1 school directly affected.
Cohesion	Potential traffic changes and displacements may diminish community cohesion between the Union Pacific Railroad Bridge and the I-29 25th Street interchange.
Community Services and Facilities	No direct effect on emergency/health care services; long-term

TABLE S-2
Summary of Impacts

Estimated Resource Impacts [a]	Preferred Alternative [b]
	potential improvements in emergency response times.
Bike/Pedestrian Considerations	No direct effect. While detours might be necessary during construction, all trail access and continuity would be maintained.
Transportation Considerations	Reduced congestion, updated geometrics, and improved safety. Increased reliability and access for other modes of transportation.
Farmland	No substantive impact.
Noise Receiver	
Residences	788
Apartment complexes	45
Business	48
Wetlands (acres) [f]	57
Waterways (ft) [g]	8,700
Floodplain	
Acres transverse	425
Acres longitudinal [h]	65
Habitat Areas (acres) [I]	43
Threatened or Endangered Species (species) [j]	Limited or none expected[i]
Architectural/Historic Resources (sites) [k]	6
Archaeological Resources (sites) [l]	4
Potential Section 4(f) Resources (sites) [m]	13
Parks/Recreation Sites	9
Historic Structures	4
Regulated Materials (sites) [n]	58

[a] Impacts were conservatively estimated using database information and field reconnaissance. No intensive-level studies for determination of detailed impacts were performed in Tier 1. Impacts could range from none to the estimated maximum values listed.
[b] Resource locations were plotted on an aerial photograph, and impacts were predicted based on proximity to the area of potential impact. Impacts due to No-Build Alternative would be caused by development and other activities even if the project were not constructed since it includes planned improvements from MAPA's *2025 LRTP*.
[c] ROW and displacements estimated from parcel data and aerial photographs identifying buildings. Right-of-way refers to new ROW required for the improvements.
[d] These new roadways would be required under either alternative. If the interstate is not improved, ultimately, other major arterials (not currently in any transportation plans) would need to be widened to accommodate increased travel demand.
[e] Noise receiver impacts estimated from planning level noise analysis and aerial photographs identifying buildings. Some of these receiver locations are currently impacted by traffic noise and others may need to be acquired. Consequently, fewer receivers would be potentially affected by the project.
[f] Wetland acreage impacts estimated from National Wetland Inventory data, field determinations of NWI areas and other observations (no delineations were performed), and aerial photographs.
[g] Waterway length impacts estimated from aerial photographs and IDNR rivers/streams database.
[h] Floodplain acreage impacts estimated from FEMA Q3 database and aerial photographs.
[i] Habitat only includes riparian acreage impacts estimated from aerial photographs and IDNR rivers/streams database.
[j] Input from US Fish and Wildlife Service, IDNR, and Nebraska Game and Parks Commission identified threatened or endangered species that might occur within or near the proposed Study Area. In-depth fieldwork as needed to verify presence or absence of potential species will be completed during Tier 2.
[k] Architectural/Historical Site impacts estimated from Tallgrass Historians reconnaissance survey.
[l] Archaeological resource impacts estimated from Iowa OSA and NSHS data and a Phase I survey by Tallgrass Historians.
[m] Potential 4(f) resource impacts estimated from parcel data, various public maps and websites, IDNR data, and Tallgrass Historians reconnaissance survey.
[n] Regulated material site impacts estimated from parcel data, aerial photographs, field reconnaissance, and environmental databases.

In the overlap section, impacts associated with the dual divided concept are generally higher than the combined. Impacts to wetlands, floodplains, 4(f) sites, and regulated materials sites are comparable, however the dual divided requires more right-of-way and results in more residential displacements.

The expansion of the I-80 Missouri River bridge to the north or south results in similar environmental impacts to floodplains and trails. The design of either concept would be the same west of Riverview Boulevard in Nebraska, thus the Nebraska impact differences would be between Riverview Boulevard and the Missouri River. The differentiators on this decision are the impacts to 4(f) resources and constructability concerns. Expansion to the north results only in impacts to land owned by the Henry Doorly Zoo, Deer Hollow Park and the Lauritzen Gardens, whereas southward expansion, in addition to impacts to the zoo property, would also affect Rosenblatt Stadium in Nebraska and the Western Historic Trails Center in Council Bluffs. Constructability issues arise with the south expansion due to the difficulty tying into the Nebraska approach roadway. The only constructability issues to the north would be the need for retaining walls near River Road in Council Bluffs to avoid a warehouse, see Table S-4.

Input concerning these three decisions is being sought through the Tier 1 Draft EIS and public hearings. Following the receipt of comments, a decision will be made for proceeding with each of the aforementioned system issues.

TABLE S-3
Summary of Impacts—Decisions Associated with the Preferred Alternative (Broadway Access, Overlap Section)

	I-29/ I-480/West Broadway System Interchange		Overlap Section[b]	
Resource[a]	**Existing Access**	**Broadway Access**	**Combined Section**	**Dual-Divided Section**
Right-of-Way[c]	40 acres impacted	34–39 acres impacted	138–186 acres impacted	152–195 acres impacted
Displacements	4 Businesses	3–4 Businesses	15–25 Businesses	17–25 Businesses
	52 Residences	63–64 Residences	33 Residences	41–44 Residences
	4 Separate Apartment Complexes Partially Impacted	3 Separate Apartment Complexes Partially Impacted		
Wetlands (acres)	<1	<1	12–13	13
Floodplain (acres)	3	3–4	179–186	188–198
Potential 4(f) Resources	Parks/Recreation: 4 Sites, 7 acres impacted	Parks/Recreation: 4 Sites, 4 acres impacted	Parks/Recreation: 2 Sites, 24–45 acres impacted	Parks/Recreation: 2 Sites, 27–40acres impacted
	Potential Historic Structure: 1 Site	Potential Historic Structure: 1 Site	Archaeological Sites: 3–4 Sites	Archaeological Sites: 3–4 Sites
			Potential Historic Structure: 0–1 Sites	Potential Historic Structure: 0–1 Sites
Regulated Material Sites (#)	5	7	24–29	25–29

[a] Only resources that show distinguishable differences in impacts are shown for comparison. The total impacts associated with the Preferred Alternative are documented in Table 4-8. The impacts in this table are intended to demonstrate the differences in impacts associated with the two decisions that are being made at Tier 1.

[b] The impacts discussed for the "Overlap Section" actually refer to all of Segments 2 and 3 as shown in Figure 2-4.

[c] Right-of-way refers to new ROW required for the improvements.

TABLE S-4
Summary of Impacts—Decisions Associated with the Preferred Alternative Missouri River Crossing

	Missouri River Crossing	
	North Expansion	**South Expansion**
Displacements	0-2	0-2
Potential 4(f) Resources	Western Trails Historic Center Henry Doorly Zoo (property only)	Additional Land at Western Trails Historic Center Henry Doorly Zoo (property and structures)
Local Road Impacts	Eastern or western shift of Riverview Boulevard required	Eastern or western shift of Riverview Boulevard required
Constructability Issues	Retaining walls near River Drive	Difficult tie-in to the existing Nebraska approach road

Areas of Controversy

Providing information and receiving feedback was a key element of the study process. Through a structured program that provided numerous opportunities for input, the CBIS Improvements Project was able to obtain the broadest participation at all levels: the public, interested groups, agencies, and elected officials. Many comments received during the study emphasized frustration with growing congestion and safety concerns along the corridor, reflecting the need for major improvements. This study focused the transportation discussion on the major problems and potential solutions.

The public involvement process helped frame the project purpose and need and the range of alternatives. Support for major improvements was expressed by the Council Bluffs and Omaha area residents, business groups, and elected officials based on transportation benefits and cost-effectiveness. There has been minimal controversy surrounding the CBIS Improvements Project.

Table S-5 summarizes agency comments. All relevant comments were addressed in the DEIS. Comments regarding Tier 2 or construction tasks are shown with an asterisk and will be addressed as appropriate in later project stages.

TABLE S-5
Agency Concerns

Agency/Tribe	Agency Request/Comment
Center for Disease Control and Prevention	Mitigation plans summarized in document Air quality impacts include statements pertaining to: • compliance with air quality standards • dust control measures during project construction • potential releases of air toxins • Water Quality section addresses: • special consideration top private and public potable water supply, including ground and surface water resources* • compliance with water quality and waste water treatment standards • ground and surface water contamination (e.g. runoff and erosion control) • body contact recreation Wetlands and Floodplains sections address: • potential contamination of underlying aquifers • construction within flood plains which may endanger human health • contamination of the food chain Hazardous Materials/Wastes section includes: • identification and characterization of hazardous/contaminated sites • safety plans/procedures, including use of pesticides/herbicides; worker training* • spill prevention, containment, and countermeasures plan Non-Hazardous Solid Waste/Other Materials • any unusual effects associated with solid waste disposal should be considered* Noise section: • not only identifies projected elevated noise levels and sensitive receivers (i.e. residential, schools, hospitals), but also discusses appropriate mitigation plans during and after construction* Occupational Health and Safety • compliance with appropriate criteria and guidelines to ensure worker safety and health* Land Use and Housing sections include: • special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services* • demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools)* • consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts* • potential impacts upon vector control should be considered*
Fish and Wildlife Service	Treatment of bald eagles* Indiana bat surveys and protection as appropriate* Protection of least tern* Protection of piping plover*

TABLE S-5
Agency Concerns

Agency/Tribe	Agency Request/Comment
	Protection of prairie bush clover*
	Protection of western prairie fringed orchid*
	Protection of massasauga rattlesnake*
	Coordination with U.S. USCOE of Engineers regarding wetland delineation and impacts*
Nebraska Games and Parks Commission	Species and habitat protection*
	Protection of cliff swallows*
	Borrow Pit/Materials Pit Identification and Evaluation form
	Future consultation regarding design*
Iowa DNR	Protection of listed or rare species/communities during the planning or construction phases*
	Proximity to the Blackbird Marsh Wildlife Management Area and an unnamed county property*
	Obtain relevant permits from state/federal agencies*
Nebraska State Historical Society	Determine Area of Potential Effect (APE)*
	Evaluate buried cultural remains if encountered*
Iowa Tribe of Oklahoma	Review of archaeological studies*
Sac & Fox Tribe of Mississippi	Contact if human remains or objects are discovered*
Omaha Tribe	Contact Tribe if evidence is discovered*
Otoe-Missouria Tribe	Review of archaeological studies*

Unresolved Agency Issues

Although there are required actions and follow-up, there are currently no unresolved issues associated with the Project.

Follow-up action includes providing copies of all archaeological studies to the Otoe-Missouria Tribe and Iowa Tribe of Oklahoma, additional coordination will occur as necessary in the later stages of the project.

As part of NDOR's tribal coordination process, copies of the Draft EIS will be sent to the Winnebago and Omaha tribes.

Other Federal Actions

This section summarizes federal actions and other regulatory actions associated with this project.

Due to the existence of historic properties, compliance with Section 106 of the Historic Preservation Act is required. The appropriate historic preservation officials from each state have been consulted regarding the historic properties during the preparation of the Draft EIS. This coordination will continue during the preparation of Tier 2 documents. The potential for impacting eligible historic properties, parks, and other public lands requires compliance with Section 4(f) of the Transportation Act of 1966, as amended.

A US Army Corps of Engineers (USCOE) 404 permit, and subsequent Section 401 Water Quality permits, would be required due to impacts on waters of the United States. The construction contractor would also be required to obtain a National Pollution Discharge Elimination System permit to address stormwater impacts if more than 1 acre of land would be disturbed, and all other applicable permits associated with construction activities. A FEMA floodplain permit will be required because the Project is in the 100-year floodplain. A Sovereign Lands Construction Permit issued by Iowa DNR would also be needed for construction on State-owned land and construction below the ordinary high water line.

All utilities would also need to be contacted to coordinate any construction activities involving utility relocations or service disruptions.

TABLE S-6
Federal Permits

Permit/Regulation	Responsible Agency
Section 404 permit	USCOE (Rock Island and Omaha districts)
National Pollution Discharge Elimination System	IDNR, Nebraska Department of Environmental Quality (NDEQ)
Floodplain permit	FEMA
Section 106 NHPA Compliance	State Historic Preservation Office (SHPO) (NE & IA), tribal governments
Section 7(c) of the Endangered Species Act of 1973	USFWS
Migratory Birds Treaty Act	USFWS
Section 4(f) Determination	FHWA

TABLE S-7
State/Local Permits

Permit/Regulation	Responsible Agency
A Sovereign Lands Construction Permit	IDNR
Nongame and Endangered Species Conservation Act (Neb. Rev. Stat. 37-807 (3))	Nebraska Game and Parks Commission (NGPC)
Secton 401 Water Quality permit	IDNR

Other Necessary Actions

Since this study is being conducted in Tiers, several follow-on tasks are required in Tier 2. Due to the level-of-detail of the engineering available to date, and the long-range nature of the project, it was not feasible to conduct detailed studies and determine specific impacts of many resources. Additionally, as part of Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA, reference is made several times to mitigation of impacts. According to 40 CFR §1508.20, mitigation may include avoiding an impact, minimizing an impact, correcting an impact, reducing or eliminating an impact over time, or compensating for an impact. While this document includes conceptual mitigation measures, the final determination of the appropriate mitigation measures will be necessary in later project stages when impacts are better defined, and the appropriate public and resource agencies have been consulted.

Executive Summary Figure

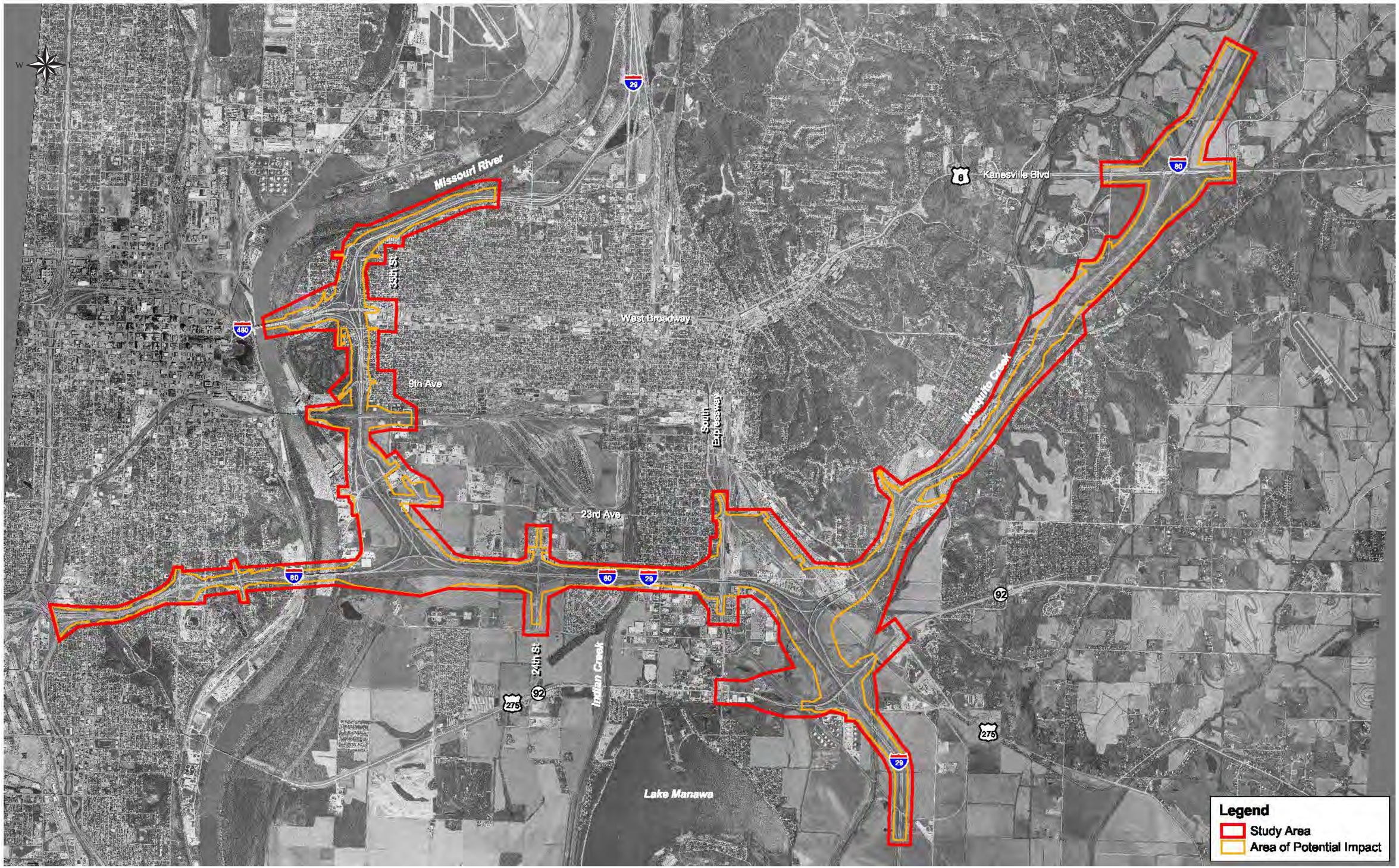

Figure S-1
Study Area and Area of Potential Impact

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Acronyms and Abbreviations

AASHTO	American Association of State Highway Transportation Officials
ADA	Americans with Disabilities Act
AWDT	Annual Weekday Daily Traffic
BCA	Bear Creek Archaeology
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe Railroad Company
BSNP	Missouri River Bank Stabilization and Navigation Project
CBIS	Council Bluffs Interstate System
CCC	Civilian Conservation Corps
CEDS	Comprehensive Economic Development Strategy
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CWA	Clean Water Act
dB	Decibels
DOI	Secretary of the Department of the Interior
EB	Eastbound
EDP	Early Deployment Plan
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
FEMA	Federal Emergency Management Association
FHWA	Federal Highway Administration
FIS	Flood Insurance Study
FPPA	Farmland Protection Policy Act
FTA	Federal Transportation Act
FY	Fiscal Year
GIS	Geographic Information System
HCM	Transportation Research Board's Highway Capacity Manual
HHS	U.S. Department of Health and Human Services
HMA	Hot Mix Asphalt
HOV	High Occupancy Vehicle
IDNR	Iowa Department of Natural Resources
Iowa DOT	Iowa Department of Transportation
IIR	Iowa Intergovernmental Review

ITS	Intelligent Transportation System
LAWCON	Land and Water Conservation
LNG	Liquefied Natural Gas
LOMR	Letter of Map Revision
LOS	Level of Service
LRTP	Long Range Transportation Plan
LUST	Leaking Underground Storage Tank
MAC	Mid-America Center
MAPA	Metropolitan Area Planning Agency
MAPP	Mid-Continent Area Power Pool
MAT	Metro Area Transit
mgd	Million Gallons per Day
MPO	Metropolitan Planning Organization
msl	Mean Sea Level
MUD	Metropolitan Utilities District
NAC	Noise Abatement Criteria
NB	Northbound
NDEQ	Nebraska Department of Environmental Quality
NDOR	Nebraska Department of Roads
NFIP	National Flood Insurance Program
NGPC	Nebraska Game and Parks Commission
NEPA	National Environmental Policy Act
NFRAP	No Further Remedial Action Planned
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NSHS	Nebraska State Historical Society
NWI	National Wetland Inventory
OMB	Office of Management and Budget
OPPD	Omaha Public Power District
OSA	Office of the State Archaeologist
PCC	Portland Cement Concrete
PEMA	Palustrine Emergent Temporarily Flooded
PEMC	Palustrine Emergent Seasonally Flooded
PEMF	Palustrine Emergent Semipermanently Flooded
PFO1A	Palustrine Forested Broad-Leaved Deciduous Temporarily Flooded
Papio NRD	Papio-Missouri River Natural Resources District
PSS1Cx	Palustrine Scrub-Shrub Broad-Leaved Deciduous Seasonally Flooded, Excavated
PUBF	Palustrine Unconsolidated Bottom Semipermanently Flooded

PUBG	Palustrine Unconsolidated Bottom Intermittently Exposed
PWA	Public Works Administration
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROW	Right-of-Way
RPMA	Recovery-Priority Management Area
RR	Railroad
SARA	Superfund Amendments and Reauthorization Act
SB	Southbound
SHPO	State Historic Preservation Office
SI&A	Structural Inventory and Appraisal
SIP	State Implementation Plan
SSD	Stopping Sight Distance
STS	Special Transit Service
TDM	Transportation Demand Management
T&E	Threatened and Endangered
TEA-21	Transportation Equity Act for the 21st Century
Title VI	Title VI of the 1964 Civil Rights Act
TNM	Traffic Noise Model
TSM	Transportation System Management
UA	Uniform Relocation Act
UHL	University of Iowa Hygienic Laboratory
UNMC	University of Nebraska Medical Center
UP	Union Pacific
USCG	United States Coast Guard
USCOE	United States Army Corps of Engineers
USDA	Unites States Department of Agriculture
USEPA	United State Environmental Protection Agency
US DOT	Unites States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	Unites States Geological Survey
UST	Underground Storgage Tank
VMT	Vehicle Miles Traveled
WB	Westbound
WHTC	Western Historic Trails Center
WPA	Works Progress Administration

Section 1

SECTION 1

Purpose of and Need for Action

This chapter describes the purpose of the Council Bluffs Interstate System (CBIS) Improvements Project which consists of the area in and around Council Bluffs, Iowa (Subsection 1.3). It also presents relevant background information that may be helpful in understanding the need for the project, including a brief discussion of a prior study, the *Council Bluffs Interstate System Needs Study (*April 1999). This chapter describes the specific problems that contribute to the need for the CBIS Improvements Project. These include the current physical condition of the roadway and structures—especially existing road segments that do not meet current engineering design standards[6], existing and projected future traffic volumes, and existing safety issues. For more information about past studies and projects on the CBIS, see Subsection 1.2, Project Background.

1.1 Description of the Proposed Action

The Iowa Department of Transportation (Iowa DOT), Nebraska Department of Roads (NDOR), and the Federal Highway Administration (FHWA) are proposing to improve the interstate system around Council Bluffs with improvements extending across the Missouri River on I-80 to near 24th Street, where I-80 diverges with I-480 (westbound) and converges with U.S. 75 (eastbound) in Omaha, Nebraska, see Figure 1-1. The study considers long-term, broad-based transportation improvements along I-80, I-29, and I-480, including approximately 18 mainline miles of interstate and 14 interchanges (3 system[7], 11 service), that would add capacity and correct functional issues along the mainline and interchanges and upgrade the I-80 Missouri River Crossing. These improvements, once implemented, would bring the segments of I-80 and I-29 up to current engineering standards and modernize the roadway to accommodate future traffic needs.

1.2 Project Background

This section discusses the Study Area and project history, including past projects and studies. It covers the Study Area's general characteristics and includes brief descriptions of population, employment characteristics, and land use as well as a detailed description of the existing transportation network.

1.2.1 Project History

The following are previous and concurrent studies related to the CBIS:

Council Bluffs Interstate System Needs Study. In April 1999, the Metropolitan Area Planning Agency (MAPA), the Metropolitan Planning Organization (MPO) for the Omaha, Nebraska/Council Bluffs, Iowa area, completed the *CBIS Needs Study*. The purpose of this

6 As defined by the American Association of State Highway and Transportation Officials (AASHTO), Iowa DOT, and NDOR.
7 A system interchange provides connections between interstates and freeways. A service interchange provides connections between the interstate and local roads.

study was to assess the system's functional and operational aspects and to identify necessary improvements to mitigate problems. Four study reports prepared between 1997 and 1999 outline the study process and findings. The study served to establish the need for the interstate improvements and to initiate a process for more detailed engineering and environmental work leading to project implementation.

Metropolitan Area Planning Agency's 2025 Long Range Transportation Plan. Improvements to the Council Bluffs Interstate System will be designated in updates to MAPA's 2025 Long Range Transportation Plan (LRTP), originally published in September 2001. The plan is expected to be updated in 2005. It outlines the goals, policies, and actions needed to efficiently move goods and people within and through the study region, as directed by The Transportation Equity Act for the 21st Century (TEA-21).[8]

Both the CBIS Needs Study and MAPA's *2025 LRTP* identified the need for improvements to the interstate system around Council Bluffs to accommodate the region's current and future transportation needs.

1.2.2 Tiering

In 2001, Iowa DOT and FHWA initiated the CBIS Improvements Project. The agencies concluded that the environmental study process would be conducted in two stages; that is, a tiered approach would be applied. The project is being conducted pursuant to the National Environmental Policy Act (NEPA) regulations issued by the Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) Part 1502.20, and FHWA 23 CFR Part 771.111, that permit tiering for large, complex NEPA studies.

Since a tiered process has not been used previously in Iowa, the decision to do so was coordinated with the resource agencies. Initially (in 2002), early coordination packets were distributed introducing the concept of tiering and inviting comment. In addition to general coordination, transportation projects undergo a merged NEPA/404 process which integrates compliance with NEPA, and the requirements of Section 404 of the Clean Water Act (CWA).

In early 2003, scoping packets were circulated and the first NEPA 404/ Concurrence Process Meeting was held with the resource agencies. At that time, the agencies endorsed the notion of tiering for the proposed project.

Tier 1 is an examination of the overall interstate system improvement needs, including a clear explanation of the area's transportation needs, a study of alternatives to satisfy them, and broad consideration of potential environmental and social impacts. The Tier 1 evaluation is at a sufficient level of engineering and environmental detail to assist decision makers in selecting a preferred transportation strategy. Tier 1 includes preparation of a draft and final Environmental Impact Statement (EIS) that would disclose the potential environmental and

8 The TEA-21 legislation provided funding for transportation programs between 1998 and 2003. TEA-21 built upon and replaced the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). A large portion of funding for state transportation projects comes from Federal transportation authorizing legislation such as TEA-21. TEA-21 is the largest public works bill in history, and provides significant increases in highway and transit funds. TEA-21 assures that each state receives a minimum return on the amount of gas taxes it contributes to the Highway Trust Fund, and the legislation changed the Federal budget rules to "guarantee" minimum funding levels for Federal highway, highway safety and transit programs. Funding for surface transportation programs is a two step process: funding must be authorized by legislation such as TEA-21 and then it must be appropriated by Congress. Not all the funding which is authorized in legislation is actually appropriated; therefore, guaranteed funding increases are significant.

social effects (evaluated at a planning level that considers a variety of conceptual designs) of the proposed improvements. The final EIS will conclude with a Record of Decision (ROD) that states the preferred plan for improvements to be implemented. Essentially, the Tier 1 document will establish the planning framework for the needed improvements.

The Tier 1 EIS will produce the following outcomes:

- Approval of the general concept (i.e., preferred strategy) for improving the CBIS
- A segmentation plan for the corridor (See Section 2), which establishes the segments of independent utility for the Tier 2 studies
- Documentation that can be referenced by Tier 2 studies to eliminate repetition and record the Tier 1 decision
- Agency and public input on the overall improvement plan

Because the scope of the overall system improvements is large, the interstate improvements would be implemented as a series of individual projects that fit into the overall planning framework. The Tier 1 Area of Potential Impact, which is discussed in detail in Section 4 is an alternative that considers a combination of the most reasonable concepts that have been developed, and buffered to ensure that any Tier 2 design modifications would remain inside the outer boundary (see the introduction to Section 4 for detailed buffer information).

Toward the end of the Tier 1 process, selected Tier 2 NEPA studies will be initiated as necessary on individual segments of the CBIS. Section 2.4.1, Construction Alternative, identifies the termini of segments for proposed Tier 2 NEPA studies. Funding strategies and an implementation strategy will be developed in Tier 2. Individual NEPA documents will be prepared during Tier 2 at a level of detail sufficient to move elements of the plan toward construction. A specific alignment will also be determined, detailed environmental studies completed, and mitigation plans specified. As part of the project development process, the Tier 2 NEPA studies will determine possible methods to avoid, minimize, and mitigate impacts on environmental resources. The information studied in Tier 1, including existing or baseline conditions, will be reaffirmed for each Tier 2 segment. The Tier 2 EIS will produce the following outcomes:

- Individual NEPA documents prepared at a level of detail sufficient to move elements of the plan toward construction
- Specific concepts/alignments for each segment
- Detailed environmental studies for each segment (e.g. noise modeling, biological studies as necessary)
- Mitigation plans and permitting

1.2.3 Study Area

The Study Area lies within Pottawattamie County, Iowa, and Douglas County, Nebraska (see Figure 1-1). The area of potential impacts includes I-80 from near the 24th Street interchange where I-80 diverges with I-480 (westbound) and converges with U.S. 75 (eastbound) Omaha, Nebraska, continuing east to U.S. 6 (Kanesville Blvd.). It also includes

Interstate 29 (I-29), between southwest of 25th Street on the north to just south of U.S. 275, and Interstate 480 (I-480) from the Missouri River Bridge on the Nebraska side to the I-29 interchange in Pottawattamie County, Iowa. Since most of the system is within Council Bluffs, the project is referred to in this document as the "Council Bluffs Interstate System Improvements Project." The Study Area encompasses a large portion of Council Bluffs and extends into Nebraska. The termini are logical in that they include sections of the interstate system in Council Bluffs that require capacity improvement in the next 20 years and provide continuity by tying into the interstate system in Nebraska. For this Tier 1 EIS, impacts for the area were determined for an "area of potential impact." This widened area represents the outer boundary of potential impacts or "worst-case" area of potential impacts as it is based on an overlay or composite of all of the reasonable concepts/alignments. In Tier 2, a single concept (Preferred Alternative) will be selected and impacts calculated for that concept. The result will be fewer impacts to the resources than what is presented as part of the Tier 1 analysis.

1.2.4 Transportation System

Roadway Network. Constructed in the late 1960s and early 1970s, most of the original CBIS pavement is more than 30 years old. Improvements to the interstate have included resurfacing parts of the system in the early 1980s. More recently, in 1999, a pavement replacement project was completed along westbound (WB) I-80 pavement for 6 miles north of Madison Avenue and in 2003 the same 6-mile segment was done for the eastbound (EB) segment of I-80. In late summer of 2004, pavement was replaced in southbound (SB) and northbound (NB) I-29 north of the I-29/I-480/West Broadway System Interchange.

I-29 is a north-south freeway from the Canadian border south to Kansas City. Roughly 8 miles of the CBIS is designated as I-29. I-80 is a cross-country interstate freeway from San Francisco to New York. An approximately 11-mile segment of I-80 lies within the Study Area beginning near I-80/24th Street in Omaha, and extending across the Missouri River through Council Bluffs.

Three miles of the interstate system are designated as an overlap section of I-29 and I-80; that is, both routes share the same alignment. System interchanges serve as the termini of the overlap section. In this document, the western interchange of I-80 and I-29 is referred to as the "West System Interchange," and the eastern interchange of I-80 and I-29 is referred to as the "East System Interchange."

Approximately ¾ mile of I-480 (also designated "U.S. 6") is within the Study Area. Beginning at the I-480 Bridge across the Missouri River and extending to the junction with I-29, I-480 runs east-west. I-480 is an eight-lane facility from the bridge to west of the I-29/I-480/West Broadway System Interchange.

Roadways provide the primary source of travel within the corridor. Roughly 94 percent of Council Bluffs residents and 92 percent of those in Omaha drive to work. Much of the rest of the transportation network depends directly or indirectly on the roadway system. The mass transit system in the area is bus service, which runs on the roadway network. Travelers to and from the regional airports depend on I-29, I-80, and I-480 to gain access to these facilities. Barge and rail freight systems depend on connectivity with the interstate system for distribution of goods.

Transit. Public transit service in the Study Area is provided by the Transit Authority–City of Omaha, also called the Metro Area Transit (MAT), which provides commuter and fixed-route bus services to the City of Council Bluffs. The fixed route service is supported by the Americans with Disabilities Act (ADA) paratransit van (see Section 3 for additional information).

Bicycle and Pedestrian Trails. There are more than 100 miles of paved and unpaved trails within the Omaha/Council Bluffs metropolitan area, approximately 6.8 miles are in the study area of which approximately 4.4 miles are within the area of potential impact. The following trails are located in the Study Area: Western Historic Trails Center (WHTC) Trail, Valley View Trail, Iowa Riverfront Trail, Back-to-the-River Trail, an unnamed trail south of Lewis Central High School in Council Bluffs, an unnamed trail along 29th Avenue south of the Mid-America Center (MAC) in Council Bluffs, and unnamed bike lanes along Harry Langdon Boulevard in Council Bluffs. With the exception of the unnamed trail south of Lewis Central High School, the aforementioned bicycle and pedestrian trails are also in the area of potential impact.

The trail system is further discussed in Sections 2 and 3.

Rail Service. Five Class I freight railroads serve the metropolitan area—the Union Pacific Railroad, Burlington Northern-Santa Fe, Iowa Interstate, Canadian Northern; and Chicago, Central, and Pacific. The Amtrak Zephyr from the Omaha Train Station provides passenger rail service.

Air Service. The Council Bluffs Municipal Airport and Eppley Airfield in Omaha serve the metropolitan area. The Council Bluffs facility is a public-use, general-aviation airport, serving corporate and charter aircraft; it also offers flight instruction. Eppley Airfield provides passenger service from 10 major carriers.

River/Barge. Missouri River traffic is an important component of the Council Bluffs/Omaha economy. Within the area, there are three private barge terminals in operation and one barge fleeting service. Most river terminals are accessible by both rail and highway facilities.

1.3 Project Purpose

The purpose of the CBIS Improvements Project is to examine needed transportation improvements in the Study Area that would address existing and future travel demands. The proposed improvements to the CBIS are intended to upgrade mobility through the I-80, I-29, and I-480 corridors to improve the condition of the roadways, reduce traffic congestion and crashes, strengthen system linkages by making transitions between interstates easier, correct functional design issues, and accommodate planned development.

1.4 Need for the Proposed Action

This section discusses the major transportation needs of the CBIS, which include:

- Reducing traffic congestion
- Providing for projected traffic demands
- Repairing existing roadway conditions

- Addressing existing safety issues
- Correcting design issues
- Accommodating planned development in the interstate corridor

1.4.1 Capacity and Congestion

Existing and Future Traffic Volumes

Existing (2000) traffic volume in the Study Area was derived from the most current Iowa DOT and NDOR counts. Future traffic forecasts for the project's long-range planning period (design year 2030) are based on the MAPA regional travel demand model. The future-year traffic volumes assume an already programmed widening of the I-29/I-80 overlap section to include three lanes in the EB direction and the partial reconstruction of the I-29/U.S. 275 interchange to provide full access. No other capacity improvements to the interstate system are included in the 2030 No-Build volume scenario. It is assumed that the other improvements within MAPA's *2025 LRTP* will be constructed. Figure 1-2 shows 2030 increases in traffic volumes in terms of annual weekday daily traffic (AWDT).[9] The system was divided into segments for the purpose of analysis, as listed in Table 1-1.

TABLE 1-1
Existing and Future Annual Weekday Daily Traffic Volumes

Route	Segment	2000 AWDT	2030 No-Build AWDT Forecast	% Growth
I-29	North of I-29/I-480/West Broadway System Interchange	19,500	26,600	36
I-29	I-29/I-480/West Broadway System Interchange to I-80 (West System Interchange)	36,400	55,600	53
I-29	South of I-80 (East System Interchange)	23,100	48,800	111
I-80	Near 24th St (Omaha) to I-29 (West System Interchange)	68,200	103,300	51
I-80/I-29	West System Interchange to East System Interchange	69,500	111,700	61
I-80	I-29 (East System Interchange) to Madison Avenue	34,500	63,400	84
I-80	East of Madison Avenue	23,400	48,000	105
I-480	West of I-29/I-480/West Broadway System Interchange	54,200	63,200	17

Source Iowa DOT, NDOR, and MAPA

Within the 4 years since the completion of the *CBIS Needs Study,* traffic volume along I-80 has increased almost 30 percent, or 6.5 percent per year. For example, the I-80 Missouri River Bridge daily volume increased from 53,000 to 68,000 between 1996 and 2000. The Table 1-1 data indicate that daily traffic is expected to continue to grow by at least 50 percent (1.5 percent per year) over the next 30 years in most segments of the Study Area. Some segments are expected to increase by more than 100 percent, which results in traffic volumes exceeding the capacity of the system—72,000 vehicles per day for a four-lane freeway.

9 Annual Weekday Daily Traffic is the measure used by MAPA in their flow maps and modeling.

Existing and Future Levels of Service

Level of service (LOS) is a standardized assessment outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*. LOS, as defined in the HCM, is used to correlate numerical traffic volume data to qualitative descriptions of traffic performance. LOS categories range from "A" (best) to "F" (worst), according to the HCM. For more information and discussion of LOS, see the HCM.

LOS can be evaluated at any location on an interstate system including mainline free-flow segments, ramps, weaving segments, and at-ramp terminal intersections with crossroads. Figure 1-3 shows existing and future LOS for the No-Build Alternative in the area of potential impacts. Table 1-2 lists estimated mainline LOS (for the No-Build Alternative) for each roadway segment within the Study Area for 2000 traffic volumes and 2030 traffic projections. These LOS determinations are planning-level evaluations of traffic operations and provide general estimates for daily corridor levels of service. The data in Table 1-2 indicate that I-80 from Nebraska to Madison Avenue is operating at capacity. By 2030, I-80 is expected to be operating beyond capacity at LOS F, with most of the rest of the system experiencing a two-level drop in LOS. The generally acceptable operational capacity of a four-lane freeway is 52,000 vehicles per day (LOS D); a 6-lane facility can handle volumes of approximately 80,000 vehicles per day for LOS D. There are multiple segments that would likely experience LOS D, E, or F in 2030 if no improvements are made.

TABLE 1-2
Existing (2000) and Future (2030) Average Weekday Daily Traffic Volumes and LOS Under the No-Build Alternative

		2000			2030[a]		
Highway	**Segment**	**AWDT**	**Lanes**	**LOS**	**AWDT**	**Lanes**	**LOS**
I-29	North of I-29/I-480/West Broadway System Interchange	19,500	4	B	26,600	4	B
I-29	I-29/I-480/West Broadway System Interchange to I-80 (West System Interchange)	36,400	4	C	55,600	4	E
I-29	South of I-80 (East System Interchange)	23,100	4	B	48,800	4	E
I-80	Near 24th St (Omaha) to I-29 (West System Interchange)	68,200	4	E	103,300	4	F
I-80/I-29	West System Interchange to East System Interchange	69,500	4	E	111,700	5	F
I-80	I-29 (East System Interchange) to Madison Avenue	34,500	4	C	63,400	4	E
I-80	East of Madison Avenue	23,400	4	B	48,000	4	D
I-480	West of I-29/I-480/West Broadway System Interchange	54,200	8	C	63,200	8	C

Source Iowa DOT, NDOR, and MAPA
[a] Estimated based on the HCM guidelines and includes MAPA's *2025 LRTP* improvements

Improvements are required to address the projected increases in travel volumes and the functional design issues (described in Subsection 1.4.4). These improvements could include additional travel lanes, auxiliary lanes, revised interchange concepts, or other measures such as designated high occupancy vehicle (HOV) lanes.

According to AASHTO, freeways and auxiliary facilities should generally designed for LOS C. In heavily developed sections of metropolitan areas, achievement of LOS C may not be practical and the use of LOS D may be appropriate.

1.4.2 Physical Condition

Physical Condition of Roadway: In Iowa, a 100-point rating scale is used to summarize roadway pavement condition. This rating is generalized as follows:

Score	Description
100-80	Excellent
79-60	Good
59-40	Fair
39 and below	Poor

Pavement analysis conducted since 2001 for the *Council Bluffs Interstate System Needs Study* provides the following information. Pavement on I-80 from 24th Street in Omaha to the East System Interchange and on I-29 from I-80 north to 9th Avenue is rated "poor." The rest of the system is rated "fair" except for I-29 from North 25th Street to the northern city limits, which is rated "good." The original interstate pavement is over 30 years old, has exceeded it original design life, and is nearing the end of its useful service life. The pavement condition index does show an "excellent" rating for areas with the 2001 hot mix asphalt (HMA) overlay. These overlays are only 2 inches thick on I-29 from the I-29/I-480/West Broadway System Interchange to the I-80 merge and on I-80 from the East System Interchange to Madison Avenue, so they will not perform as well as a structural overlay and the condition can be expected to deteriorate at a faster rate than a structural overlay. The overlay was placed as an interim fix and to improve the ride of the pavement until the reconstruction project could be designed. The overlay has a service life of approximately 5-10 years after which the pavement will need to be replaced due to the condition of the underlying original Precast concrete (PCC) pavement.

Physical Condition of Structures: The existing condition of highway structures in the Study Area was derived from the Structural Inventory and Appraisal (SI&A) data provided by Iowa DOT. The SI&A ratings are based on the FHWA criteria for evaluating the existing conditions of a National Bridge Program. The ratings are based on existing materials and the physical condition of the deck, superstructure, and substructures and address the bridge's structural adequacy and safety, serviceability, and functional obsolescence.

An overall rating of the existing condition of the highway structures was determined based on the following criteria:

Rating	Structural Inventory and Appraisal Rating
GOOD	SI&A Rating of 80 to 100 and All bridge items in good condition with only minor deterioration
FAIR	SI&A Rating of 60 to 79 and All primary structural elements are sound but may have minor section loss, cracking, spalling or scour
POOR	SI&A Rating of 59 or less and/or Advanced section loss, deterioration, spalling or scour

Of the 45 structures of the highway system, approximately 15 were rated "fair" and 8 were rated "poor," including:

- EB I-80 over RR and pond, east of the East I-80/I-29 System Interchange
- EB and WB I-80 over Old Highway 275
- EB and WB I-80 over abandoned RR, south of Madison Avenue
- EB and WB I-480 over 41st Street
- East-to-North I-480 ramp over southbound (SB) I-29
- NB I-29 over SB Highway 192

Thus, over half of the structures in the Study Area are in either "fair" or "poor" condition.

1.4.3 Safety

A measure of the safety of a roadway network is the frequency and severity of crashes. An important objective of any transportation improvement is to minimize exposure to crash potential. The combination of traffic demand and outdated geometry contribute to higher than average statewide crash rates in sections of the I-29/I-80 corridor.

Figure 1-4 illustrates sections of the corridor that experienced more than 25 accidents between 1995 and 1999—the Avenue G area, the West System Interchange, the 24th Street area, the South Expressway/IA 192 area along I-29, the I-80 bridge, and the U.S. 6 area along I-80. Along the I-80/I-29 overlap and on the I-80 bridge, accidents were primarily rear-end incidents, which are typically associated with stopping/slowing traffic and merging. Animal and fixed-object incidents were more common at U.S. 6 and Avenue G.

The statewide average crash rate per 100 million vehicle miles traveled (vmt) for an urban freeway, including crashes on ramps and at ramp termini with local roads as well as along the mainline, is 56 crashes resulting in injuries or fatalities and 132 total crashes. In the Study Area, crash rates as a whole are below the statewide average, with 49 injury/fatality crashes per 100 million vmt, and a total of 114 crashes per 100 million vmt between 1996 and 2000. One area of the corridor does experience rates above the statewide average. The area around the I-480 interchange experienced a rate of 61 injury/fatality crashes, and a total accident rate of 155 crashes per 100 million vmt. Accidents that occur in the corridor are highly concentrated at certain locations in the corridor because of the current design and congested conditions. Figure 1-4 identifies accident locations in the corridor. Upgrading the

corridor to current design standards[10] would reduce the high-incident locations and improve safety throughout the corridor. Incident rates could reasonably be expected to improve, particularly in the areas with high rear-end crash rates associated with slowing and stopping traffic. Improving the flow of traffic and decreasing congestion in the corridor would result in a decrease in this type of incident.

1.4.4 Functional Issues/Geometrics

The roadway geometry was examined to identify design issues and to provide a basis for defining future roadway requirements capable of meeting the transportation demand in the corridor. The system was constructed in the late 1960s and early 1970s. Although it was built to meet existing design standards at the time of construction, the roadway does not conform to current design standards[11] for interstate highways. This conclusion is based on a review of specific design features in the *CBIS Needs Study* including:

- Horizontal alignment
- Vertical clearance and alignment
- Stopping and decision sight distance
- Cross section
- Exit and entrance ramp design
- Ramp spacing

All the design features were rated on a "good/fair/poor" scale in the *CBIS Needs Study* to describe the quality of the roadway segment's physical, geometric, and operational measures. Features rated "good" meet or exceed current design standards as established by AASHTO, FHWA, Iowa DOT, and NDOR. Features or measures rated "poor" do not meet current design standards, guidelines, or criteria. Table 1-3 and Figure 1-5 summarize the design issues.

TABLE 1-3
Roadway Features That Do Not Meet Current AASHTO, Iowa DOT, and NDOR Standards

Issue	Locations Not Meeting Current Standards
Horizontal Alignment	• The NB lanes of I-29 near the Highway 192 entrance ramp • The NB and SB lanes of I-29 north of Avenue G
Vertical Clearance and Alignment	• EB I-80 at McPherson Avenue
Stopping Sight Distance	• NB and SB I-29 through the I-29/I-480/West Broadway System Interchange
Decision Sight Distance	• I-29 NB approach to 9th Avenue
Cross Section	• I-29 and Harvey's Boulevard
Exit and Entrance Ramp Design	• I-80 WB entrance ramp at Madison Avenue • I-29 NB entrance ramp at Highway 275/92 • I-29 SB entrance and exit ramps at Highway 275/92 • I-29/I-80 EB and WB exit and entrance ramps at South Expressway

10 As defined by AASHTO, Iowa DOT, and NDOR
11 As defined by AASHTO, Iowa DOT, and NDOR

TABLE 1-3
Roadway Features That Do Not Meet Current AASHTO, Iowa DOT, and NDOR Standards

Issue	Locations Not Meeting Current Standards
	• I-29 NB exit and entrance ramps at Nebraska Avenue • I-29 SB entrance ramp at Nebraska Avenue • I-29 NB entrance ramp from 9th Avenue • I-29 SB entrance ramp from 9th Avenue • I-29 SB entrance and exit ramps from Avenue G
Ramp Spacing	• NB I-29 between Highway 275/92 and the East I-80/I-29 System Interchange • NB I-29 between 9th Avenue and the I-29/I-480/West Broadway System Interchange • SB I-29 between Avenue G and the I-29/I-480/West Broadway System Interchange • SB I-29 between the I-29/I-480/West Broadway System Interchange and 9th Avenue • EB I-480 between 41st Street and the NB/SB I-29 split • WB I-480 between 41st Street and the NB/SB I-29 split

1.4.5 Compatibility with Adjacent Land Use

Improvements to the CBIS would be compatible with 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. Compatibility with adjacent land use can be a supporting factor in the decision making process, although it is not necessarily a driving factor in transportation funding decisions.

As a metropolitan area with strong ties to manufacturing and agriculture, the Council Bluffs/Omaha area has been focusing on redeveloping and expanding its economic base to maintain its former strengths while incorporating new technologies and markets. In parts of the region, particularly the Missouri River crossing and the overlap portion of I-80/I-29, the transportation infrastructure is not adequate to support new business or business expansion because of the current geometric design, capacity, and LOS issues (shown in Figures 1-3 through 1-5). Improvements to the interstate system, such as upgrading from partial to full access interchanges, would allow better access to adjacent land and support the redevelopment and continued employment and population growth outlined in the CEDS (see Subsections 3.1.1 and 3.1.3). While the population and employment growth is forecast to occur regardless of the CBIS project, expansion of the interstate may improve mobility and improve the area's ability to attract new businesses and industries. Upgrades to a transportation system typically result in improvements in travel efficiencies such as reduced travel times or distances (NCHRP Report 456, 2001). Major transportation projects also yield such economic benefits as short-term generation of construction jobs, improved travel and shipping efficiency, and the area's improved economic viability due to improved traffic flow.

1.5 Purpose and Need Summary

The purpose of the CBIS Improvements Project is to examine needed transportation improvements in the Study Area that would address existing and future travel demands. The need for the proposed improvements is based on:

- Providing a transportation system to accommodate forecast traffic volumes
- Restoring the deteriorating condition of the existing roadway
- Improving safety
- Correcting functional design issues
- Being compatible with adjacent land uses to accommodate planned development

Although built to meet the design standards in place at the time of construction, the existing roadway does not meet current design standards[12]. Design features such as horizontal alignment, stopping and decision-sight distance, and exit-and-entrance ramp design all contribute to safety concerns. The facility's age and condition are those of one approaching the end of its service life.

Because the Council Bluffs/Omaha area functions as a single economic unit, ease of movement throughout the entire region is critical to its economic success. A substantial percentage of the population lives and works on opposite sides of the river—2000 Census data indicate that more than 40 percent of Council Bluffs residents work outside Iowa, the vast majority commuting to the Omaha area. Efficient travel flow results in time and financial savings (NCHRP Report 456, 2001).

As described in Subsection 1.2.4, the Council Bluffs/Omaha area offers excellent connectivity to the major eastern, western, and midwestern markets by road, rail, water, and air transport. The mature road network, coupled with strong rail connections and river access for freight movement, makes the area well positioned to take advantage of future development opportunities. It is imperative that the road network keep pace to accommodate and facilitate existing and future development plans.

Traffic volumes along parts of the interstate system are expected to double by 2030. Consequently, most of the interstate system is expected to experience traffic volumes beyond its capacity. Together, these needs form the basis for improvements to the CBIS. The alternatives developed to address these needs are discussed in Section 2, Alternatives.

12 As defined by AASHTO, Iowa DOT, and NDOR.

Section 1 Figures

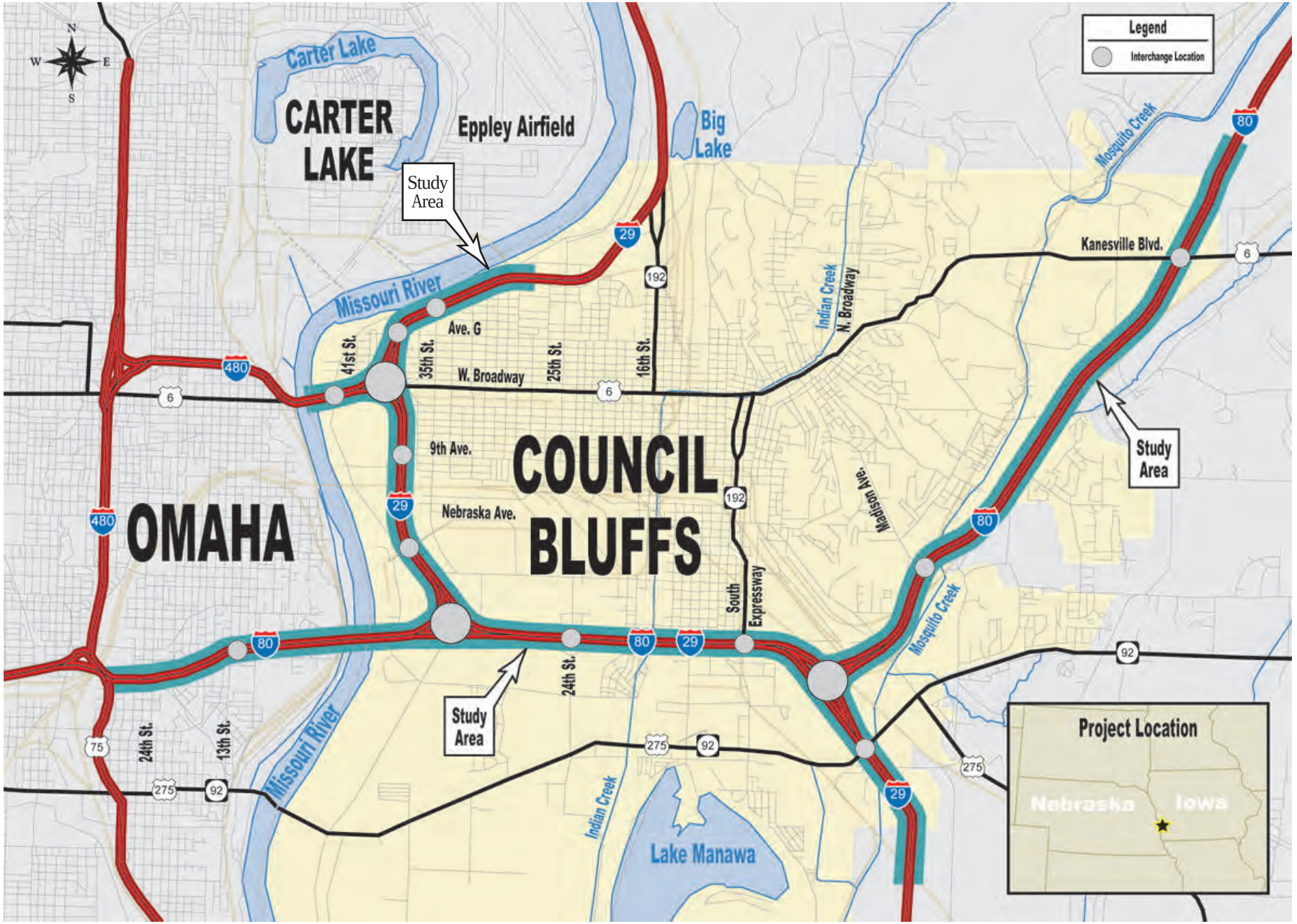


Figure 1-1
CBIS Study Area

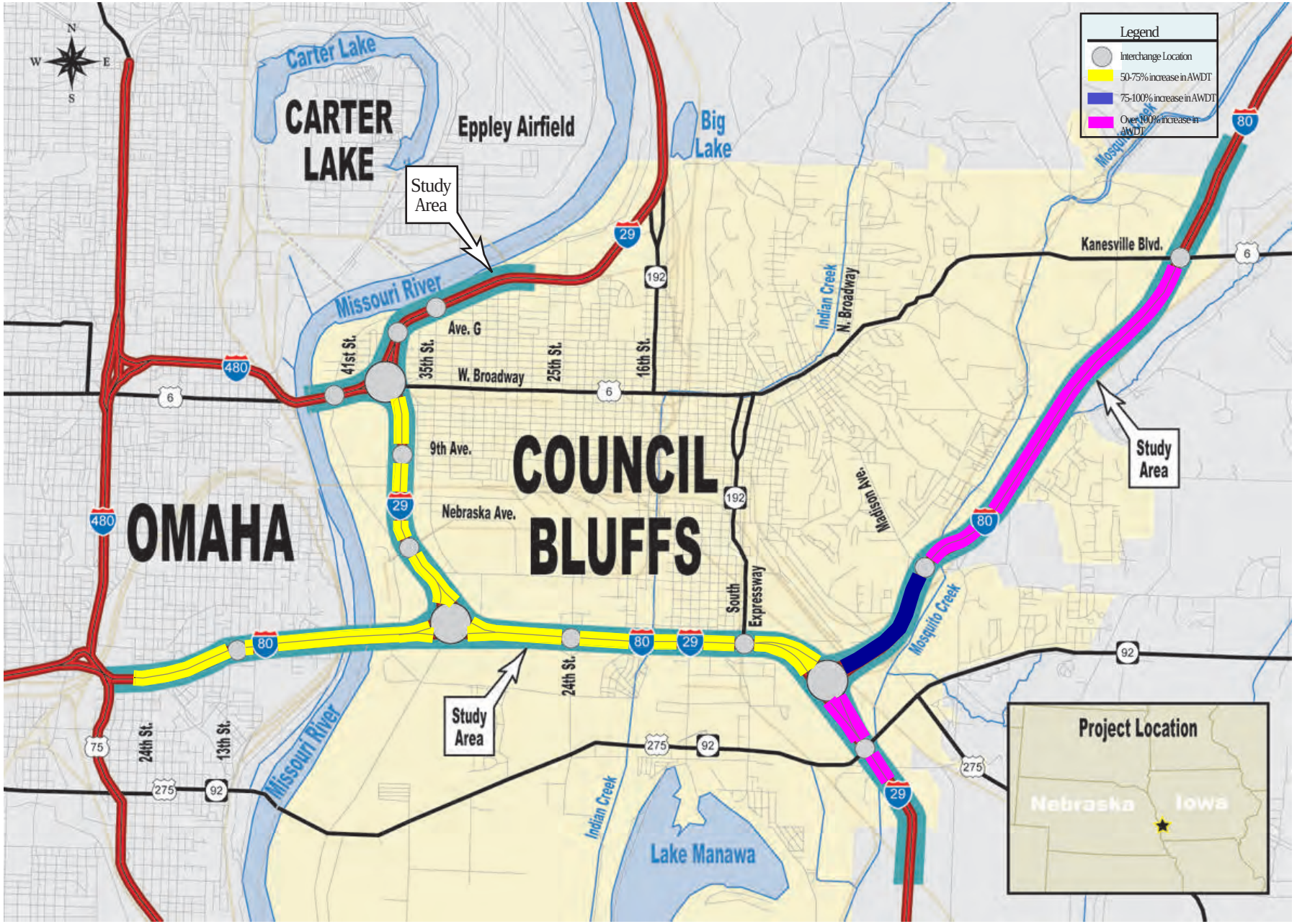


Figure 1-2
2030 No-Build Increase in Average Weekday Daily Traffic (AWDT)

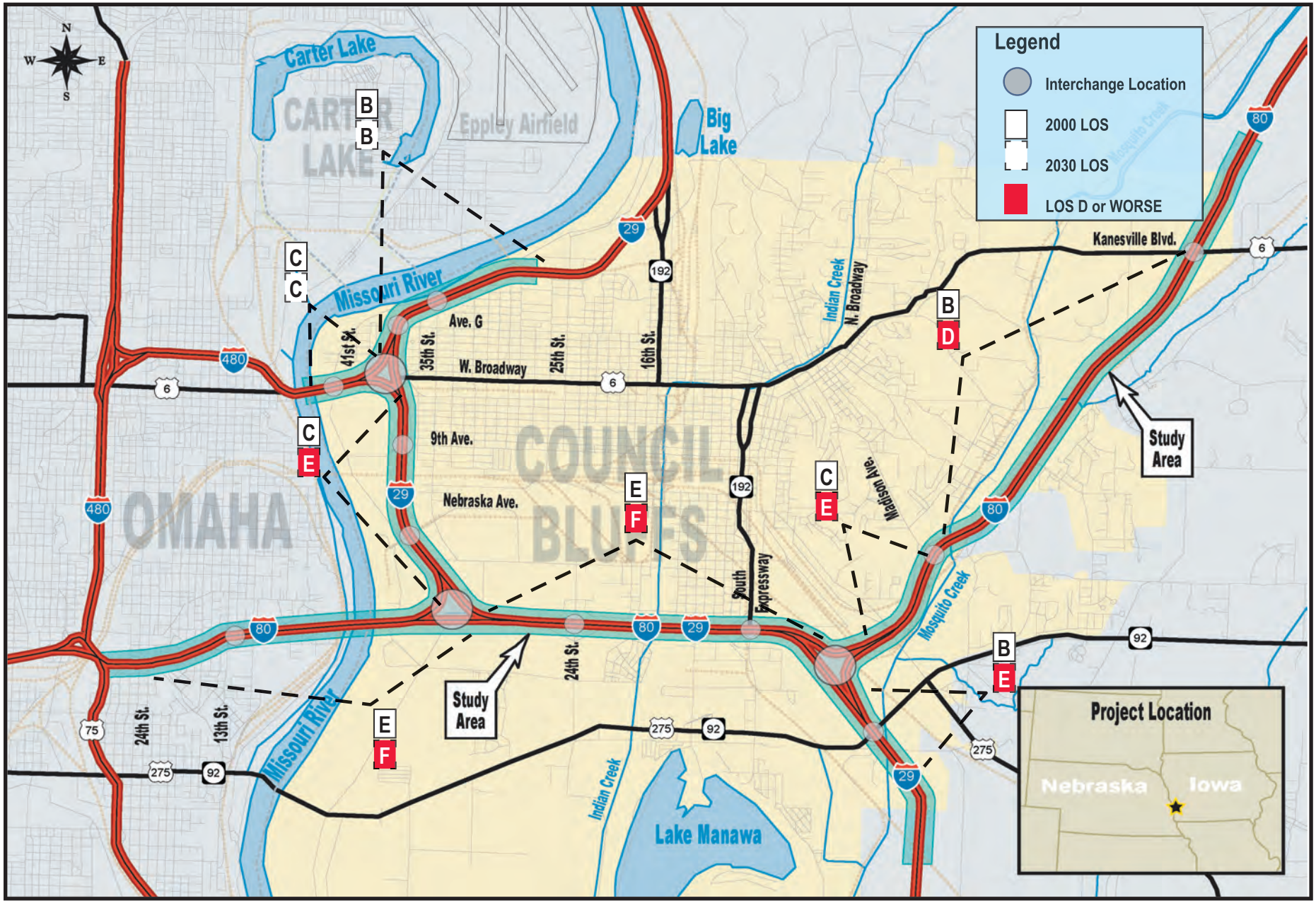


Figure 1-3
Existing and Projected Level-of-Service (LOS)

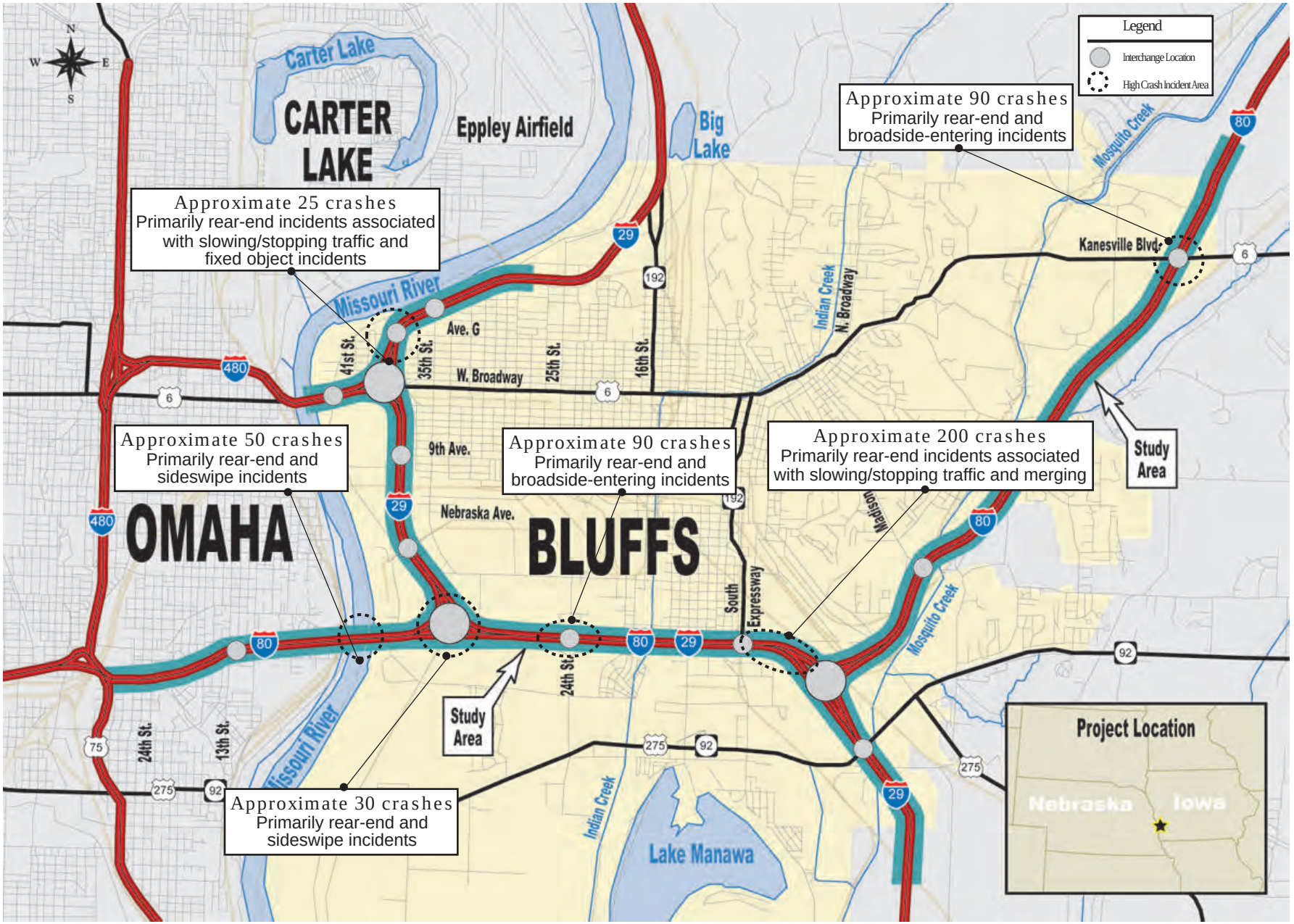


Figure 1-4
High Crash Incident Map

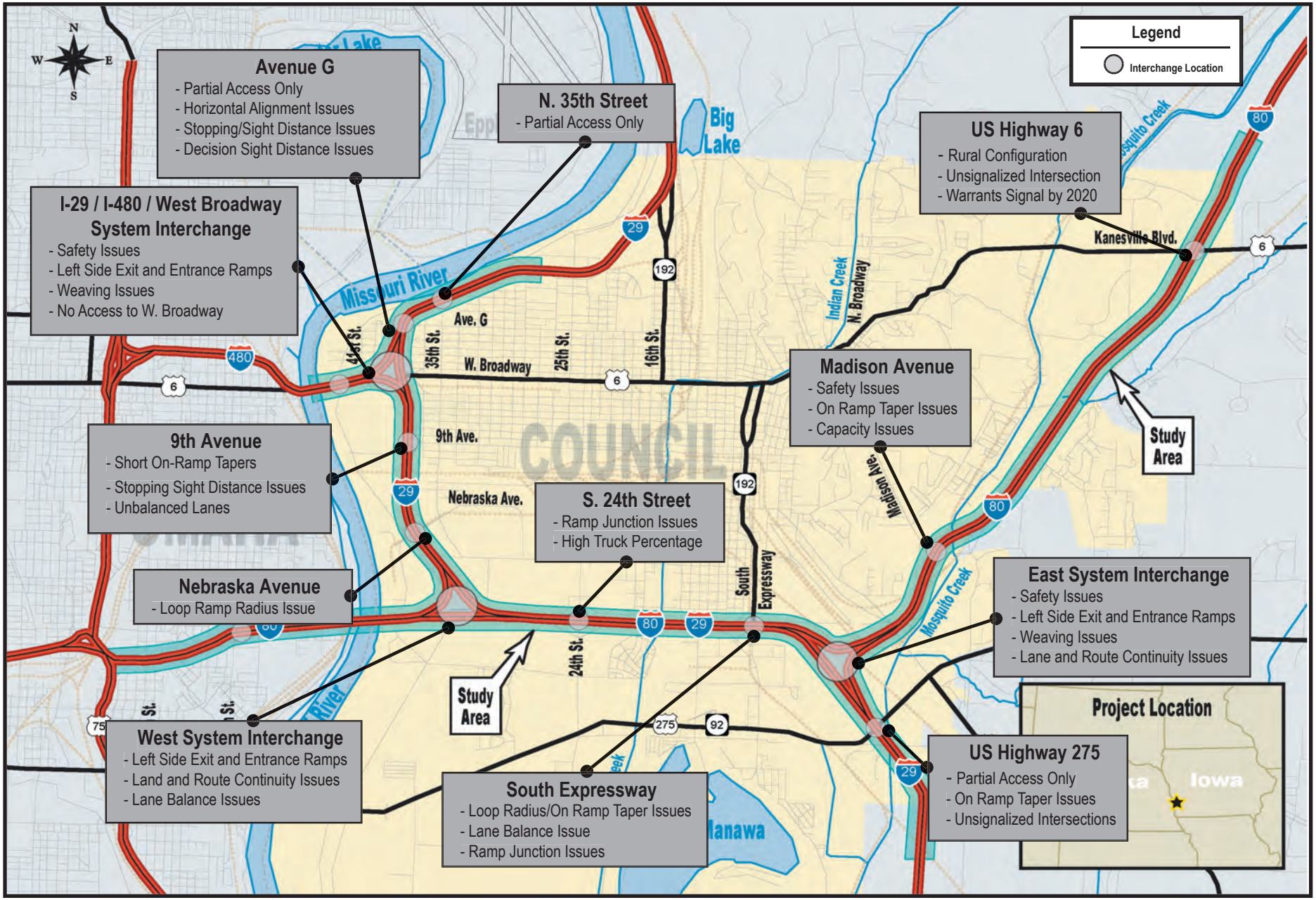


Figure 1-5
Roadway Geometric Design Issues

Section 2

SECTION 2

Alternatives

2.1 Introduction

Alternatives are strategies that can satisfy the needs of the CBIS, as established in Section 1 of this Tier 1 analysis. This section discusses the range of alternatives developed for the CBIS, including roadway, transit improvements, bicycle/pedestrian facilities, transportation management strategies (including transportation system management [TSM] and transportation demand management [TDM]), improvements to arterial streets, and construction of a new cross-town roadway. Both the alternatives carried forward for detailed evaluation and those not carried forward are discussed below.

2.2 Alternative Development and Screening Process

The array of alternatives that were considered to address the CBIS Improvements Project objectives included:

- Reconstruction of all or part of the interstate (Construction Alternative)
- No-Build
- Improvements to alternate modes of transportation (enhance transit accommodations/ expand bicycle and pedestrian trails)
- Transportation management strategies (TDM and TSM)
- Improvements to other metro-area roadways
- Construction of a new cross-town roadway

The range of alternatives developed is based on recommendations in the CBIS Needs Study (April 1999), the Tier 1 Alternatives and Segmentation Report (December 2003), MAPA's *2025 LRTP* (see Subsection 1.2.1, Project History), and coordination among FHWA, Iowa DOT, and NDOR. Public, agency and project advisory committee input was encouraged and considered throughout the process. Alternatives were developed using the four-step process detailed below.

2.2.1 Step 1: Establish Project Objectives

The alternatives' basic goals and objectives were developed in the project's purpose and need. These criteria were applied in the development and assessment of the Tier 1 alternatives (roadway, multimodal, other roadways, etc.).

2.2.2 Step 2: Develop and Evaluate Range of Alternatives

The range of alternatives was developed and evaluated. The goal was to test a full range of possible improvements and identify the reasonable alternatives or combinations of these alternatives to be carried forward for detailed evaluation.

2.2.3 Step 3: Refine and Evaluate Alternatives Carried Forward

All concepts that are able to meet the project's purpose and need remain under consideration. The No-Build Alternative does not meet the project's purpose and need, but was carried forward, as directed by NEPA, as a baseline for comparison to the Construction Alternative.

2.2.4 Step 4: Identify Preferred Alternative

The Preferred Alternative will be identified and discussed in detail.

2.3 Range of Alternatives Considered

2.3.1 Construction Alternative

The Construction Alternative consists of reconstructing approximately 18 mainline miles of interstate highway and 14 existing interchanges, of which 13 will be reconstructed. The full reconstruction area includes:

- I-80 from near 24th Street where I-80 diverges with I-480 (westbound) and converges with U.S. 75 (eastbound)
- I-29 from southwest of 25th Street on the north to just south of U.S. 275
- I-480 from the Iowa side of the Missouri River Bridge to the I-29 interchange in Council Bluffs, excluding reconstruction of the main span of the bridge

The Construction Alternative meets the project's purpose and need and is therefore further described in Subsection 2.4.1 as an Alternative Carried Forward for Detailed Evaluation.

2.3.2 No-Build Alternative

The No-Build Alternative represents the baseline conditions for the Study Area and includes committed capacity and access improvements in the study corridor (i.e., the interstate system) and all planned off-system improvements per MAPA's *2025 LRTP*. The No-Build Alternative components are described below and shown in Figure 2-1. The No-Build Alternative includes short-term restoration work and ongoing maintenance to ensure continued bridge and roadway pavement integrity along the interstate. The design of the existing interstate system—location, geometric features, and current overall capacity—would remain largely unchanged, but some minor operational improvements may occur.

Committed improvements to the interstate include the addition of a third lane in the EB direction through the I-80/I-29 overlap section and partial reconstruction of the I-29/U.S. 275 interchange to provide full access, see Table 2-1

While engineering analysis demonstrated that the No-Build Alternative does not satisfy purpose and need, NEPA requires including the No-Build Alternative as a baseline for

comparison of environmental impacts. Therefore, the No-Build Alternative is included in Subsection 2.4, Alternatives Carried Forward for Detailed Evaluation, see Table 2-1.

TABLE 2-1
Baseline Improvements for No-Build Alternative

Type	Project Location	Description
Roadway Widening	I-80/I-29 Overlap Section	Add a third eastbound lane through the I-80/I-29 overlap section.
**Interchange Improvement	I-29/U.S. 275	Partially reconstruct the interchange to provide full access.
Roadway Widening	U.S. 275 between Missouri River and I-29	Widen to 4 lanes.
Roadway Widening	24th Street between I-80/I-29 and U.S. 275	Widen to 4 lanes.
Roadway Widening	Madison Avenue between Bennett and Broadway	Widen to 4 lanes.
Roadway Widening	US 6 between I-80 and Westfair	Widen to 4 lanes.
Roadway Widening	Avenue G between 7th and 16th	Widen to 4 lanes and construct a railroad viaduct.
Roadway Widening	North Broadway north of US 6	Widen to 3 lanes.
Roadway Widening	U.S. 275 South of Iowa 92	Widen to 3 lanes.
Roadway Widening	6th and 7th between 16th and South Expressway	Widen to 3 lanes.
Roadway Widening	Iowa 92 east of Council Bluffs	Widen to 4 lanes.
New Roadway	I-680 to Eppley Airfield	Construct a connector roadway/bridge.

Source: *2025 MAPA Area Long Range Transportation Plan*

** *Construction complete*

2.3.3 Improvements to Other Modes of Transportation

Improvements to other modes of transportation were considered as a project alternative to address the capacity, condition, development, and safety issues in the Study Area. The improvements include both transit enhancements and bicycle/pedestrian accommodations.

Transit Improvements

MAT provides public transportation in the Omaha/Council Bluffs metropolitan area. MAT uses a conventional local route bus system to provide transit in the Study Area. The primary types of bus routes are local and express. MAT operates and maintains 39 routes within the Study Area—18 radial, 10 express, 7 feeder, 1 cross-town, and 3 circulator routes. The fixed route service is supported by paratransit van service compliant with the ADA operating within ¾ of a mile of existing bus routes. Like many midwestern cities of similar size and density, use of public transit in the Omaha/Council Bluffs metropolitan area is relatively low. According to 2000 Census data, less than 1 percent of the population in Council Bluffs and less than 2 percent in Omaha rely on public transportation to travel to and from work.

Potential transit alternatives in the Study Area include:

- Improve Bus Service
  - Improved trunk line bus service
  - Express bus service
  - Shuttle service
  - Bus-to-bus transfer upgrades
- Implement Rail Transit
  - Light rail
  - Commuter rail
  - Others, including streetcars, trolleys, people movers, monorails, etc.

MAPA's *2025 LRTP* outlines continued expansion of the current bus-based system and emphasizes combined radial and cross-town routes (local and express) meeting at established transit points to allow for multiple directions of travel and dispersed destinations. MAPA's *2025 LRTP* notes that it is unlikely that alternative modes of transportation (e.g., rail) will replace the bus-based system in the foreseeable future unless conditions change. Based on the low percentage of bus ridership and the cost and infeasibility of rail, a public transit alternative is not a reasonable standalone alternative. Improved transit does not meet purpose and need because it does not accommodate current and projected traffic volumes, restore the roadway's deteriorating condition, improve safety, correct functional design issues, or accommodate planned development through compatibility with adjacent land uses. Improvements to the public transit system can benefit the CBIS when implemented in tandem with the Construction Alternative, but such improvements are not Iowa DOT's jurisdiction. Future enhancements of the transit system would be implemented as appropriate by the responsible agency.

Bicycle and Pedestrian Accommodations

Bicycle and pedestrian facilities throughout the Study Area consist of systems of sidewalks and trail facilities (see Figure 3-2). The Papio-Missouri River Natural Resources District (Papio NRD) maintains more than 70 miles of mainline, connector, and spur trails in metropolitan Omaha. The City of Council Bluffs also maintains more than 20 miles of paved and unpaved trails.

The metropolitan area trails plan consists of 140 miles of trails yet to be built, including several within the Study Area. A pedestrian bridge across the Missouri River, just north of the I-480 Bridge, is under design and expected to be built in 2005.

Improvements to bicycle and pedestrian facilities could include new facilities or improvements to existing facilities. Examples include:

- Improved connections to employment centers
- Improved connections to other transportation modes
- Improved connections between existing and planned facilities
- Improved connections across major barriers (e.g., railroads, interstates, etc.).

Local governments in the metropolitan area encourage bicycling and walking as modes of transportation. The federal government, in response to recent surface transportation

legislation, is placing greater emphasis on bicycles and walking as primary means of transportation. Thus, the number and percentage of people bicycling or walking to work is expected to increase in the future. Even with changes in federal policy and support from local governments, it is unlikely there will be a substantial mode shift from automobile use to bicycling and walking. Approximately 2 percent of workers in both Pottawattamie and Douglas counties bicycle or walk to work, according to 2000 census data. Since 1990, bicycling and walking to work have decreased 27.7 percent in Pottawattamie County and 17 percent in Douglas County. Because an alternative to increase bicycling and walking is incapable of substantially reducing existing and future traffic volumes on the CBIS, it does not meet purpose and need. Therefore, improvements to alternative modes of transportation were not carried forward as reasonable alternatives. While improvements to the trail network can benefit the CBIS when implemented in conjunction with the Construction Alternative, such improvements to the trail network would be implemented as appropriate by the responsible agency.

2.3.4 Transportation Management Strategies

Transportation Management Strategies were considered as a project alternative to address the capacity, condition, development, and safety issues in the Study Area. These improvements included both TSM and TDM accommodations.

Transportation System Management Accommodations

TSM strategies are designed to maximize the existing transportation system's efficiency and include methods to reduce congestion and better manage traffic using existing facilities or low-cost improvements. These can include:

- Spot geometric improvements
- HOV lanes (i.e., designated for cars with multiple passengers)
- Improved coordination of traffic signals to manage arterial traffic flow

TSM also includes a broad spectrum of intelligent transportation system (ITS) strategies:

- Traveler information services (e.g., dynamic message signs)
- Freeway traffic flow management (e.g., ramp metering)
- Incident detection and response
- Traffic management center

Historic performance of traffic management strategies and the corridor's unique transportation issues, such as rapidly increasing traffic volumes and decreasing LOS, were considered to estimate the potential benefits of implementing a TSM program. While TSM programs in certain urban areas have been shown to yield benefits of up to 8 percent (Traffic Signal Prioritization in Portland), most strategies have estimated benefits of far less. A study of successful transportation management strategies in Southern California showed that HOV lanes yielded a 1.4-percent benefit (Litman, 1999). Based on the assessment, these strategies alone cannot completely meet the project's purpose and need of improving capacity. The single-digit decreases that could be attributed to TSM strategies could not offset the 17- to

111-percent projected increase in traffic within the corridor[13]. Additionally, the design issues in the corridor cannot be repaired with the spot geometric improvements associated with TSM strategies.

Even though analysis shows that these measures cannot meet the needs of the CBIS, TSM strategies will remain under consideration in the corridor. MAPA's *2025 LRTP* currently does not call for the implementation of HOV lanes; however, the Plan does call for ongoing monitoring of the local conditions and indicates that dedicated HOV lanes may be initiated if future conditions dictate such a need. Improved traffic signal coordination is also an ongoing effort throughout the metro area that would improve the quality of traffic operations on local roadways and at ramp terminals, but it would not measurably improve flow along the CBIS itself.

MAPA is developing a regional ITS architecture for the Omaha/Council Bluffs metropolitan area. Along with an Early Deployment Plan (EDP) developed in 1995, it will serve to guide the integration of ITS components in the Study Area. At first, ITS strategies in the Omaha/ Council Bluffs area will likely focus on incident management (e.g., crashes or stalls along the interstate that affect traffic). Potential strategies include surveillance and detection technologies, dynamic message signs, and a traffic management center. Nationally, ITS strategies have been shown to measurably reduce the effects of nonrecurring congestion (caused by incidents), but such strategies are not necessarily intended to prevent recurring congestion as occurs along the CBIS. For the CBIS, a TSM alternative alone would not be expected to serve as a practical alternative. Such measures typically account for only modest traffic reductions and, therefore, do not meet the purpose and need; however, TSM strategies will be incorporated into the Construction Alternative where appropriate.

Transportation Demand Management Accommodations

TDM strategies are designed to reduce the demand for transportation and thus reduce the number of vehicle trips along the transportation system. Such strategies typically aim to reduce the number of single-occupant vehicle work trips during peak periods. Examples include:

- Ride sharing
- Park and ride facilities
- Alternative work-hour programs (e.g., compressed work week, flextime, telecommuting)
- Parking management tactics (e.g., preferential parking for carpools and parking pricing)
- Vanpool programs
- Transit incentives

The effectiveness of these strategies was evaluated using the results of similar programs implemented in other metropolitan areas. The effectiveness of the strategies varied across different metropolitan areas. Evaluations have typically focused on individual employer-based programs. Reductions of up to 15 percent in single-occupant vehicle use have been achieved by such individual employers as Union Bank in San Diego (Comsis/Institute of Transportation Engineers, 1993), but there is no evidence to suggest that changes of this

13 Different segments of the corridor will experience different volume increases over the planning period. The smallest increase in traffic volumes (17 percent) will occur in the vicinity of the I-29/I-480/West Broadway System Interchange; the largest increase (111 percent) will occur south of the East System Interchange.

magnitude can be widely replicated across multiple employers and larger geographic areas. While minimal reductions in travel volumes can be achieved with this alternative, large-scale decreases in demand are hard to achieve as they rely on the willing participation of employers and commuters and are not supported by any legislation in Council Bluffs. Thus, TDM strategies alone cannot address the capacity, safety, geometry, or condition issues in the corridor. MAPA is proposing TDM strategies and may implement them independently of the proposed project.

2.3.5 Improvements to Other Metro Area Roadways

This alternative consists of various arterial improvements in lieu of the freeway improvements (Figure 2-2). They would be beyond the off-system improvements included in MAPA's *2025 LRTP*. Together with the LRTP improvements, this alternative seeks to provide improved arterial facilities parallel to the interstate to serve shorter local trips off the interstate system.

Arterial street improvements benefit travel efficiency by providing alternate routes and diverting traffic. Modeling of local roadway improvements indicates that such improvements will not replace the need for interstate system improvements. Preliminary findings using the MAPA model show that minimal additional traffic would be attracted to these routes. Impacts to travel would range from a 0.1– to 3.2-percent reduction in traffic along the CBIS. With traffic estimated to increase from 17 to 111 percent along the CBIS by 2030,[14] improvements to other metro-area roadways cannot divert a sufficient amount of traffic away from the CBIS to preclude the need for interstate capacity improvements. In the Council Bluffs area, improvements to other metro-area roadways alone cannot meet the proposed project's purpose and need. While improvements to other metro-area roadways can yield some benefit to the CBIS when implemented in tandem with the Construction Alternative, such improvements are not within this project's scope. Future local roadway improvements would be independent of the CBIS Improvements Project.

2.3.6 Construction of a New Cross-Town Roadway

This alternative would provide a new four-lane major arterial roadway connecting I-29 north of the Study Area to I-80 at its eastern edge (Figure 2-3). One representative alignment would extend directly westward from the existing alignment of U.S. 6. Another would provide a freeway-type facility on a new alignment farther north. Preliminary findings using the MAPA model show that the facility would result in a 0.2– to 2.2-percent decrease in traffic along the CBIS.[15] With traffic estimated to increase from 17 to 111 percent along the CBIS by 2030 (see Table 1-1), construction of a new cross-town corridor cannot divert enough traffic away from the CBIS to preclude the need for additional capacity on interstate in the Study Area. In addition, the cross-town roadway would likely face opposition from environmental resource agencies and the public because of impacts to the Loess Hills, the high numbers of displacements, access restrictions, potential noise impacts, and other

14Different segments of the corridor will experience different volume increases over the planning period. The smallest increase in traffic volumes (17 percent) will occur in the vicinity of the I-29/I-480/West Broadway System Interchange; the largest increase (111 percent) will occur south of the East System Interchange.

15 In the area north of I-29/I-480/West Broadway System Interchange, this alternative actually results in a 10.8 percent increase in traffic along the CBIS.

environmental impacts. Therefore, this alternative is not able to meet the project's purpose and need and will not be carried forward for further evaluation.

2.3.7 Alternatives Not Carried Forward for Further Evaluation

This section provides a summary comparison of the Tier 1 alternatives based on their ability to satisfy the project's purpose and need. The results are shown in Table 2-2.

TABLE 2-2
Alternatives Comparison

Purpose and Need Criteria	Construction	No-Build	Improvements to Alternate Modes of Transportation	Transportation Management Strategies	Improvements to Other Metro-area Roadways	Construction of a New Cross-Town Roadway
Reduce Congestion/ Provide for Projected Demand	●	○	◒	◒	◒	◒
Repair Existing Roadway Conditions	●	◒	◒	◒	◒	◒
Address Safety Issues	●	○	○	◒	○	○
Correct Geometric Issues	●	○	○	○	○	○
Accommodate Planned Development	●	○	◒	○	◒	○

● = Meets criteria ◒ = Partially meets criteria ○ = Does not meet criteria
Note: Routine maintenance included in the No-Build Alternative would also occur under the other alternatives.

Based on the preliminary analysis, only the Construction Alternative is able to fully satisfy the purpose and need requirements. For this reason, the Improvements to Alternate Modes of Transportation, Transportation Management Strategies, Improvements to Other Metro-area Roadways, and Construction of a New Cross-Town Roadway alternatives were not carried forward for detailed evaluation. Although it does not meet the purpose and need requirements, the No-Build Alternative was carried forward as a baseline of comparison for the alternatives carried forward.

2.4 Alternatives Carried Forward for Detailed Evaluation

The Construction and No-Build alternatives have been retained for detailed evaluation. The Construction Alternative has been retained because it can meet the project's purpose and need. The No-Build Alternative has been retained as a baseline for comparing project impacts.

2.4.1 Construction Alternative

The Construction Alternative is made up of multiple concepts that were considered to improve safety, capacity, and geometry. This subsection explains the major differences between the concepts that remain under consideration. The Construction Alternative represents a composite that would accommodate any Construction concepts that remain under consideration.

The system would be improved to address existing and future issues in the study corridor, including insufficient capacity, deteriorating pavement and bridges, and outdated highway geometrics. Design elements within the construction concepts evaluated include:

- Mainline widening (basic lanes)
- Auxiliary lanes (lane additions between onramps and offramps) to facilitate acceleration and deceleration
- Collector-distributor roads (divided roadway parallel to main freeway that eliminates weaving and reduces the number of entrances to and exits from the freeway while still providing access)
- Conversion of partial access interchanges to full access interchanges
- Consolidation of existing access points on the interstate
- Revised interchange configurations

Continuous paved shoulders will be provided on the mainline, providing a minimum width of 10 feet on the driver's right side, and 6 feet on the drivers left side. In areas where three or more lanes in the same direction are proposed for the mainline, a minimum continuous shoulder width of 10 feet will be provided for the left and right sides. The continuous paved shoulders provide space away from the mainline traveled way for vehicles to stop because of mechanical difficulties, to have additional space for evasive maneuvers to avoid potential crashes or reduce their severity, and space for maintenance operations such as snow storage and removal. They also provide space for emergency vehicles to more quickly reach traffic crashes.

Construction Alternative—Segments of Independent Utility

All initial concepts were screened for cost and constructability impacts. An initial environmental evaluation, or assessment for reasonableness, was also conducted. Based on the environmental and engineering analysis, concepts that met the project's purpose, need, and design criteria were retained as part of the Construction Alternative. They will be carried forward for further evaluation in Tier 2. These concepts are subject to refinement as the project moves into Tier 2.

Under any implementation scenario, the Construction Alternative is a long-term improvement that will be implemented in segments over time, so a strategy has been developed (Figure 2-4). Three options were developed based on the requirement of independent utility and logical termini. The option recommended by Iowa DOT, NDOR, and FHWA includes the following segments:

- Segment 1—Nebraska I-80 section, including the Missouri River Bridge
- Segment 2—I-80 including the West System Interchange, the 24th Street interchange; Nebraska Avenue interchange; and the Union Pacific (UP) Railroad overpass
- Segment 3—I-29 including the East System Interchange, the South Expressway, U.S. 275, and Madison Avenue interchanges
- Segment 4—I-29 including the I-29/I-480/West Broadway System Interchange
- Segment 5—the northern section of I-80, including the Kanesville Boulevard interchange

These segments will be the individual segments evaluated in Tier 2 documents. Each segment will be analyzed separately using the appropriate NEPA documentation during Tier 2.

Construction Alternative—Mainline Concepts

Improvements to the mainline throughout the Study Area address design speed, horizontal and vertical alignment, lane and shoulder width, pavement cross-slope, ramp spacing, weaving lengths, some left-hand entrances and exits, lane balance and continuity, and additional capacity. For the segments in the corridor, multiple mainline concepts remain under consideration and help establish the Tier 1 Construction Alternative.[16]

Construction Alternative—Interchange Concepts

Concepts were considered at each of the 14 existing interchange locations (see Figure 2-5) and evaluated using the project's purpose and need and established design criteria. At most interchange locations, multiple design concepts were retained for further consideration. In such instances, more than one concept was reasonable. The concepts that meet purpose and need make up the Construction Alternative. A decision on whether or not to provide access at West Broadway is being considered as part of Tier 1, as the provision of access is a system-level decision. Specifics on how access might be provided would be decided in Tier 2. Since this Tier 1 document addresses only the determination of the Construction Alternative as the Preferred Alternative, and specific concepts will be decided during Tier 2, Table 2-3 summarizes the interchange concepts still under consideration with respect to access changes. In general, these concepts provide comparable operational performance, meet design criteria, are constructable, and meet the project's purpose and need.

16 The concepts represent the largest area that would be needed to accommodate the traffic needs. The footprint is based on traffic modeling.

TABLE 2-3
Interchange Concepts and Associated Proposed Access

Existing Access	Proposed Interchange Access
I-29/I-480/West Broadway System Interchange and Adjacent Interchanges	
• Fully directional system interchange between I-29 and I-480 • Access also provided from I-480 to West Broadway (U.S. 6) • No direct access from West Broadway (U.S. 6) to I-29 • Partial access interchanges on I-29 at 35th St. and Avenue G • Partial access interchange on I-480 at 41st St. • Full access interchange at I-29 and 9th Ave.	**CONCEPT A** • Fully directional system interchange between I-29 and I-480 • Maintain existing level of access at West Broadway (U.S. 6), 9th Ave., and 41st St. • No direct access from West Broadway (U.S. 6) to I-29 • Provide full access interchange at 35th St. in lieu of partial access interchanges at Avenue G and 35th St.
	CONCEPT B • Fully directional system interchange between I-29 and I-480 • Maintain existing access from I-480 to West Broadway (U.S. 6) • Combined interchange between 9th Ave., 2nd Ave., and West Broadway (U.S. 6), providing direct full access (via one-way frontage roads) from West Broadway (U.S. 6) to I-29 • Direct full access intersection from West Broadway (U.S. 6) to 40th St. • Direct freeway access from I-480 to 9th Ave. • No interchange access at Avenue G and 35th St.
	CONCEPT C • Fully directional system interchange between I-29 and I-480 • Maintain existing access from I-480 to West Broadway (U.S. 6) • Combined interchange between 9th Ave., 2nd Ave., West Broadway (U.S. 6) and Avenue G, providing direct full access (via one-way frontage roads) from West Broadway (U.S. 6) to I-29 • Full access intersection from West Broadway (U.S. 6) to 40th St. • Access from 9th Ave. to I-480 provided by one-way frontage roads; no direct freeway access provided • No interchange access provided 35th St.
West System Interchange and Adjacent Service Interchanges	
• Fully directional system interchange between I-80 and I-29 • Full access interchange at Nebraska Ave. • Full access interchange at 24th St.	**CONCEPTS A and B** • Maintain existing access
	CONCEPT C • Fully directional system interchange between I-80 and I-29 • Full access interchange at an extension of 23rd Ave. (in lieu of interchange access at Nebraska Ave.) • Full access interchange at 24th St.

TABLE 2-3
Interchange Concepts and Associated Proposed Access

Existing Access	Proposed Interchange Access
East System Interchange and Adjacent Service Interchanges	
• Fully directional system interchange between I-80 and I-29 • Full access interchange at South Expressway (Highway 192) • Full access interchange at U.S. 275 / Iowa 92 • Full access interchange at Madison Ave.	**CONCEPTS A and B** • Fully directional system interchange between I-80 and I-29 • Maintain existing access at South Expressway (Highway 192) and Madison Ave. • Full access interchange at U.S. 275/Highway 92 interchange • Full access interchange at Madison Ave.
I-80 / Kanesville Boulevard (U.S. 6)	
• Full access interchange	• Maintain existing access
I-80 / near 24th St. (Omaha) to Missouri River Bridge	
• Full access interchange at 13th St.	**CONCEPTS A and B** • Maintain existing access

2.4.2 No-Build Alternative

The No-Build Alternative represents the baseline conditions for the Study Area and includes committed capacity and access improvements in the study corridor (i.e., the interstate system) and all planned off-system improvements per MAPA's *2025 LRTP*, as described in Subsection 2.3.2. Separate 2030 traffic forecasts were developed for the No-Build Alternative, under which traffic volumes would increase between 17 and 111 percent over the next 30 years[17]. By 2030, most segments of I-80 are expected to exceed capacity, with the remaining segments experiencing a decrease in the LOS. In the overlap section of I-80 and I-29, the 2030 No-Build forecasts will exceed the acceptable volume threshold of this section (assuming the widened EB cross section) by approximately 65 percent. This alternative failed to meet the project's purpose and need, but was retained as a baseline for comparison as directed by the NEPA.

2.4.3 Evaluation of the Alternatives Carried Forward

This section describes the evaluation criteria applied to the range of alternatives carried forward. These criteria were derived from the purpose and need, and also the specific engineering requirements for the CBIS. The comparative evaluation of impacts for the alternatives carried forward can be found in Section 4.6.

Capacity and Efficiency

The Construction Alternative would reduce congestion, improve traffic operations, and improve travel reliability in the corridor. It would provide additional through and auxiliary lanes along the CBIS, and improve both connections to local roadways and interchange design features. Cumulatively, such improvements would provide enough capacity and operational efficiency to accommodate 2030 travel forecasts. Table 2-4 summarizes the LOS

17 Different segments of the corridor will experience different volume increases over the planning period. The smallest increase in traffic volumes (17 percent) will occur in the vicinity of the I-29/I-480/West Broadway System Interchange; the largest increase (111 percent) will occur south of the East System Interchange.

of the interstate with the implementation of the Construction Alternative. The No-Build 2030 LOS is summarized in Table 1-2. Some minor operational improvements along the CBIS can be anticipated under the No-Build Alternative based on the committed improvements described in Subsection 2.3.2.

TABLE 2-4
2030 LOS—Construction Alternative

Highway	Segment	2030 Build LOS
I-29	North of I-29/I-480/ West Broadway System Interchange	LOS C or Better—All Areas
I-29	I-29/I-480/West Broadway System Interchange Area	LOS C or Better—Except borderline C/D for EB I-480 approaching split to NB & SB I-29 during PM Peak
I-80/I-29	West System Interchange Area through Overlap Section	LOS C or Better—Except borderline C/D for WB & EB I-80 AM & PM Peak
I-80/I-29	East System Interchange Area	LOS C or Better—Except borderline C/D on I-80 into overlap section
I-80	East of Madison Avenue	LOS C or Better—All Areas
I-80	West of West System Interchange	LOS C or Better—Except LOS D EB & WB in areas west of Missouri River

Source MAPA

Functional Design Issues

The Construction Alternative would correct functional and geometric issues, such as shoulder widths, lane balance, and ramp spacing along the CBIS. The design features of the Construction Alternative comply with current interstate design standards[18]. Under the No-Build Alternative, the current interstate system would remain essentially unchanged with only slight modifications at select locations.

Condition

The Construction Alternative would include removal and reconstruction of deteriorating roadway pavement and bridges in the corridor, while the No-Build Alternative would include only minor improvements to the condition of the roadway and bridges in the corridor, and would not measurably improve roadway and bridge conditions.

Safety

Reconstruction would yield an updated interstate design, including full-width travel lanes and shoulders, additional through and auxiliary lanes, lane balance, improved horizontal and vertical alignments, and improved interchange acceleration and deceleration tapers. These improvements would enhance overall safety performance. Although, traffic operations, and subsequently safety, would likely improve on those roadways improved under the No-Build Alternative (local LRTP projects); the No-Build Alternative is not expected to affect safety in the Study Area measurably. Without major improvements, safety along the interstate would

18 As defined by AASHTO, Iowa DOT, and NDOR

continue to worsen over time due to increased traffic volumes with expanding stop-and-go traffic and backups at ramps.

Compatibility with Adjacent Land Use

The Construction Alternative improvements would be compatible with adjacent land uses to support ongoing and planned development in the Study Area. Improvements to the CBIS would be compatible with the MAPA CEDS by supporting the redevelopment and continued growth outlined in the strategy, and by providing better access to adjacent land. The project is also compatible with the future development and land use plans in the cities of Omaha and Council Bluffs. The No-Build Alternative, though compatible with adjacent land uses, would not attract additional development to the area.

2.5 Decisions Associated with the Construction Alternative—I-29 Access at West Broadway Interchange, I-29 / I-80 Overlap Cross Section and I-80 Missouri River Bridge Location

Typically, only systemwide planning decisions are made in Tier 1. However, decisions normally deferred to Tier 2 will be addressed for the following three locations:

- I-29/I-480/ West Broadway System Interchange—full access provided between West Broadway and I-29
- I-29/I-80 overlap cross section—dual-divided vs. combined cross section
- I-80 Missouri River Bridge—location of bridge expansion north or south of existing

These decisions are presented in this document for review (see Section 4.6 for a summary of impacts), and are open for public comment. Following the public hearing, the preferred action regarding each decision will be identified and presented in the Final EIS. The final determination will be documented in the ROD.

2.5.1 I-29 Access at West Broadway Interchange

There is currently no direct access linking I-29 and West Broadway. The current access to I-29 is provided via Avenue G and/or 9th Avenue. Under consideration as part of Tier 1 is whether to provide direct access at West Broadway to and from I-29. If direct access is provided, how the specific access will be provided will be decided in Tier 2.

Two different access scenarios remain under consideration in this document. The first option provides direct access from I-29 to Broadway via the I-29/I-480/West Broadway System Interchange. Multiple design concepts remain under consideration for providing access. These concepts include the addition of a full access interchange with the possible removal of the partial interchanges at Avenue G and 35th Street. Specifics on "how" access will be provided will not be discussed as part of the decision for Tier 1. However, the concepts were developed to ensure that access could be provided.

The other access option under consideration maintains the existing (or similar) access from I-29 via 35th Street or 9th Avenue. No direct access linking I-29 and West Broadway would

be provided. However, some reconstruction of the interchange would still occur to bring the interstate up to current standards that would allow the driver entering I-29 from I-480 or entering I-480 from I-29 continuous travel movements. Currently, the driver making these movements has to exit and reenter the freeway, while the driver wanting to exit from I-480 to West Broadway or enter I-480 from West Broadway has the continuous travel movement. Under the revised interchange, the driver making the interstate-to-interstate movement would stay on the freeway, while the driver wanting to get onto West Broadway from I-480 would exit the freeway.

Figure 2-6 is a schematic diagram of the options under consideration. The different access options—direct access and no direct access to West Broadway from I-29—have different right-of-way (ROW) requirements, and therefore would result in different impacts (e.g. number of relocations and access for local residents); see Section 4.6, Table 4-9, for a summary of the impacts.

2.5.2 I-29 / I-80 Overlap Section

The existing overlap section of I-80/I-29 between the East and West System Interchanges is currently a four-lane divided roadway (two travel lanes in each direction) with a depressed grass median. There are currently service interchanges at 24th Street and the South Expressway; these access points would be maintained.

Traffic analyses indicate that the overlap section will require 10 lanes (5 in each direction) for through traffic in order to provide enough capacity to accommodate 2030 traffic. Due to the proximity of the 24th Street and South Expressway interchanges, auxiliary lanes between the two interchanges would also be required. Thus, between 24th Street and the South Expressway, 12 lanes would be necessary to accommodate forecast future traffic volumes.

Two concepts remain under consideration through the overlap section: a dual divided cross section, and a typical combined freeway cross section, see Figure 2-7. The dual divided concept would physically split I-80 and I-29 with a barrier. I-80 EB and WB would consist of the two "inside" roadways with three lanes of travel in each direction and would be classified as a freeway. I-29 would consist of the two "outer" roadways with three lanes of travel in each direction and would provide access to the local service interchanges.[19] System-to-system ramps would be provided at both the East System and West System Interchanges to allow full redundancy. This means that movements between the "inner" and "outer" roadways of I-29 and I-80 at both system interchanges are possible.

The typical combined interstate concept does not provide physical separation between I-80 and I-29 and would consist of five basic lanes of travel in each direction with auxiliary lanes between service interchanges, creating a combined 12-lane cross section in some areas. The auxiliary lanes would be provided to facilitate acceleration, deceleration, and weaving between tightly spaced ramps. Three 12-foot lanes would also be provided in each direction along I-29 north of the West System Interchange and south of the East System Interchange. I-29 would be transitioned to the existing cross section of two 12-foot lanes in each direction north of the I-29/I-480/West Broadway System Interchange and south of the U.S. 275 service interchange.

19 A system interchange provides connections between interstates and freeways. A service interchange provides connections between the interstate and local roads.

As described in the preceding two paragraphs there are differences in the basic operations of the two mainline concepts, see Figure 2-8. However, there are also differences in the impacts associated with each concept based on the amount of ROW needed (Table 4-7).

2.5.3 I-80 Missouri River Bridge

A third issue being considered during Tier 1 is the expansion of the I-80 Missouri River bridge to provide additional capacity. Under consideration is the construction of a parallel structure as well as where the parallel structure would be constructed—north or south of the existing bridge. Widening the existing bridges is not feasible for a variety of reasons including the need to close the bridge during construction, the need to dismantle and replace many of the bridge components, and the high cost associated with this process. Environmental, social, and constructability constraints exist both north and south of the existing bridge, see Figure 2-9. North of the bridge on the Nebraska side, property belonging to Henry Doorly Zoo and the Lauritzen Gardens would be affected by a new bridge. Retaining walls would need to be constructed near River Road in Council Bluffs to avoid a warehouse. Additional constraints exist south of I-80 in both Iowa and Nebraska including the WHTC, Henry Doorly Zoo, and Rosenblatt Stadium. Constructability issues arise with expansion to the south including the difficulty tying into the Nebraska approach roadway**.**

2.6 Summary of Alternatives

The CBIS Improvements Project considered a range of potential alternatives to address transportation needs in the Study Area. These alternatives included a Construction Alternative (reconstruction of the interstate), a No-Build Alternative, improvements to other modes, transportation management strategies, improvements to other roadways, and construction of a new cross-town roadway. The Construction Alternative was carried forward—it comprises a range of reasonable construction concepts that are all able to meet the defined engineering requirements, avoid or minimize environmental impacts, and accommodate ongoing and planned development in Council Bluffs/Omaha. The Construction Alternative evaluated in this document is the composite footprint that would accommodate all the construction concepts that remain under consideration.

The No-Build Alternative consists of no new major construction along the CBIS corridor. It consists only of short-term restoration work (maintenance improvements) and all committed and planned improvements detailed in the Iowa DOT's multiyear programs and MAPA's *2025 LRTP*. The No-Build Alternative does not meet the project's purpose and need and was carried forward only as a baseline for comparison to the Construction Alternative.

As the other alternatives cannot meet the proposed project's purpose and need, they were not carried forward for further evaluation. The resource impacts of the Construction Alternative are detailed in Section 4 and listed in Table 4-8.

2.7 Identification of the Preferred Alternative

Based on the Tier 1 evaluation, the Construction Alternative has been identified as the Preferred Alternative. The final selection of an alternative will not be made until the impacts of the alternatives and comments on the Draft EIS and from the public hearing have been fully evaluated. The ROD will explain the reasons for the project decision. During Tier 2, NEPA documents will be prepared for the five project segments which summarize mitigation measures that will be incorporated into the project and document any required Section 4(f) approval. They will reflect engineering and environmental studies in further detail and identify the preferred mainline concept, and interchange(s) for each segment.

Section 2 Figures

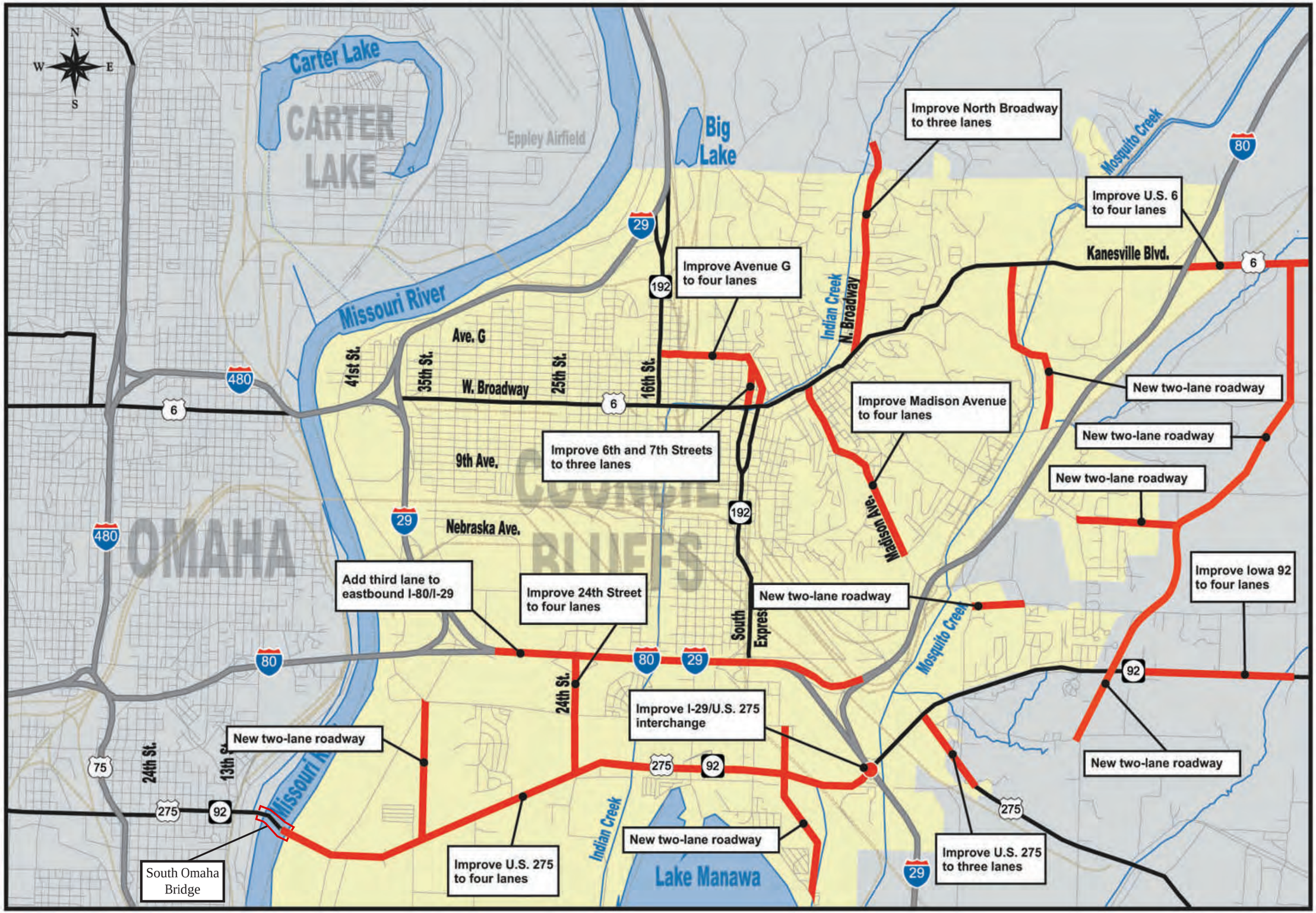


Figure 2-1
No-Build Alternative

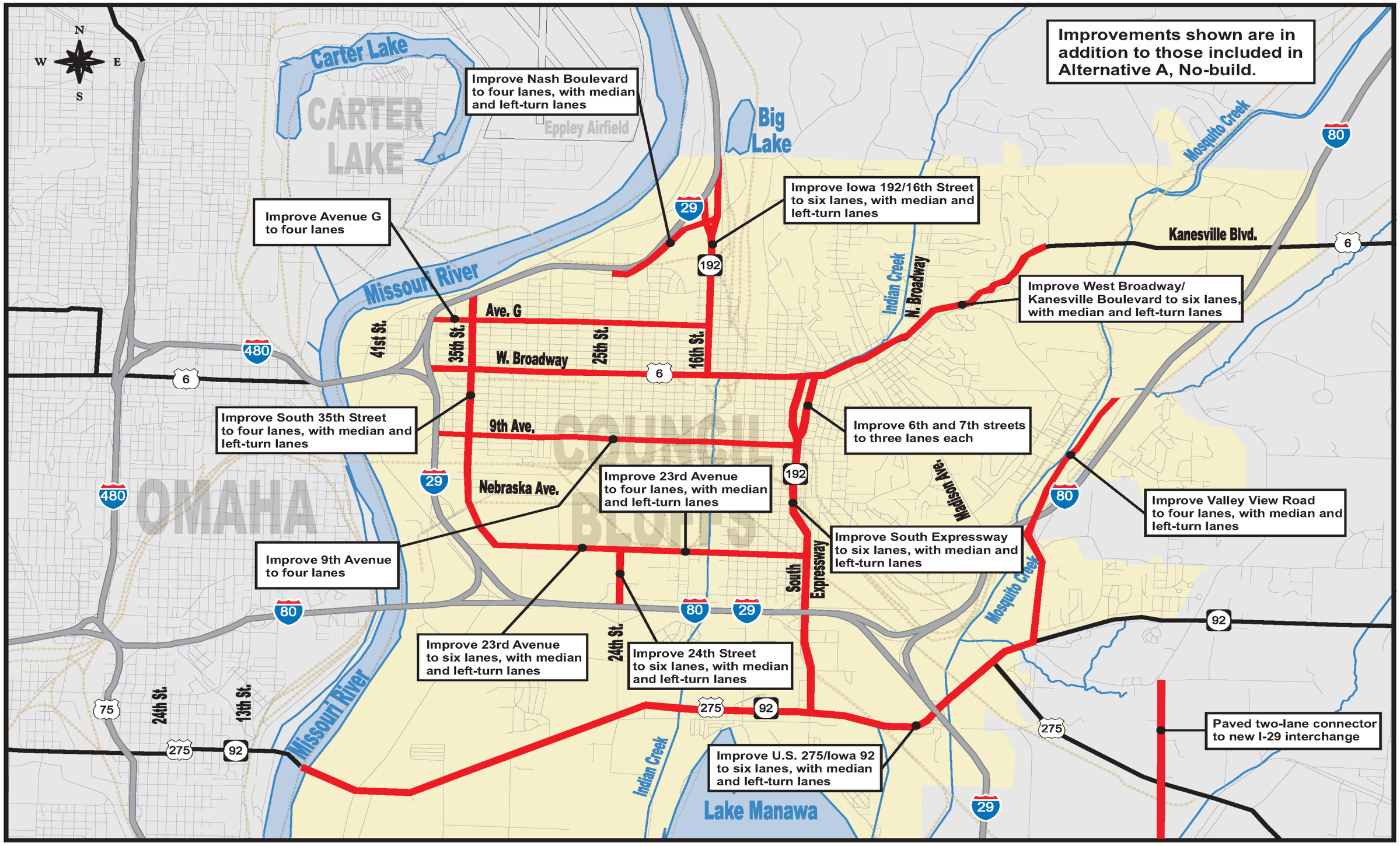


Figure 2-2
Improvements to Other Metro Area Roadways

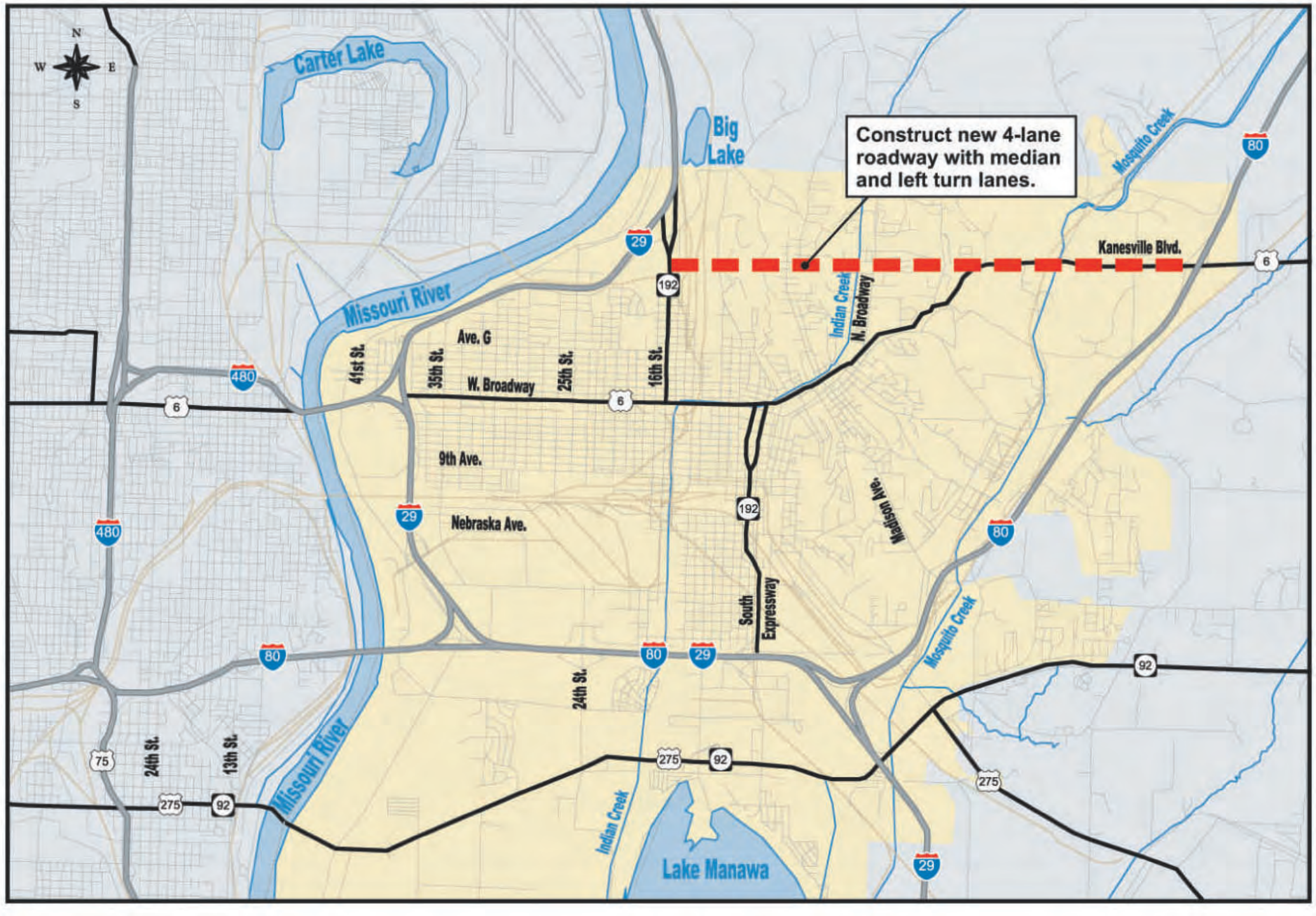


Figure 2-3
New Cross-Town Roadway

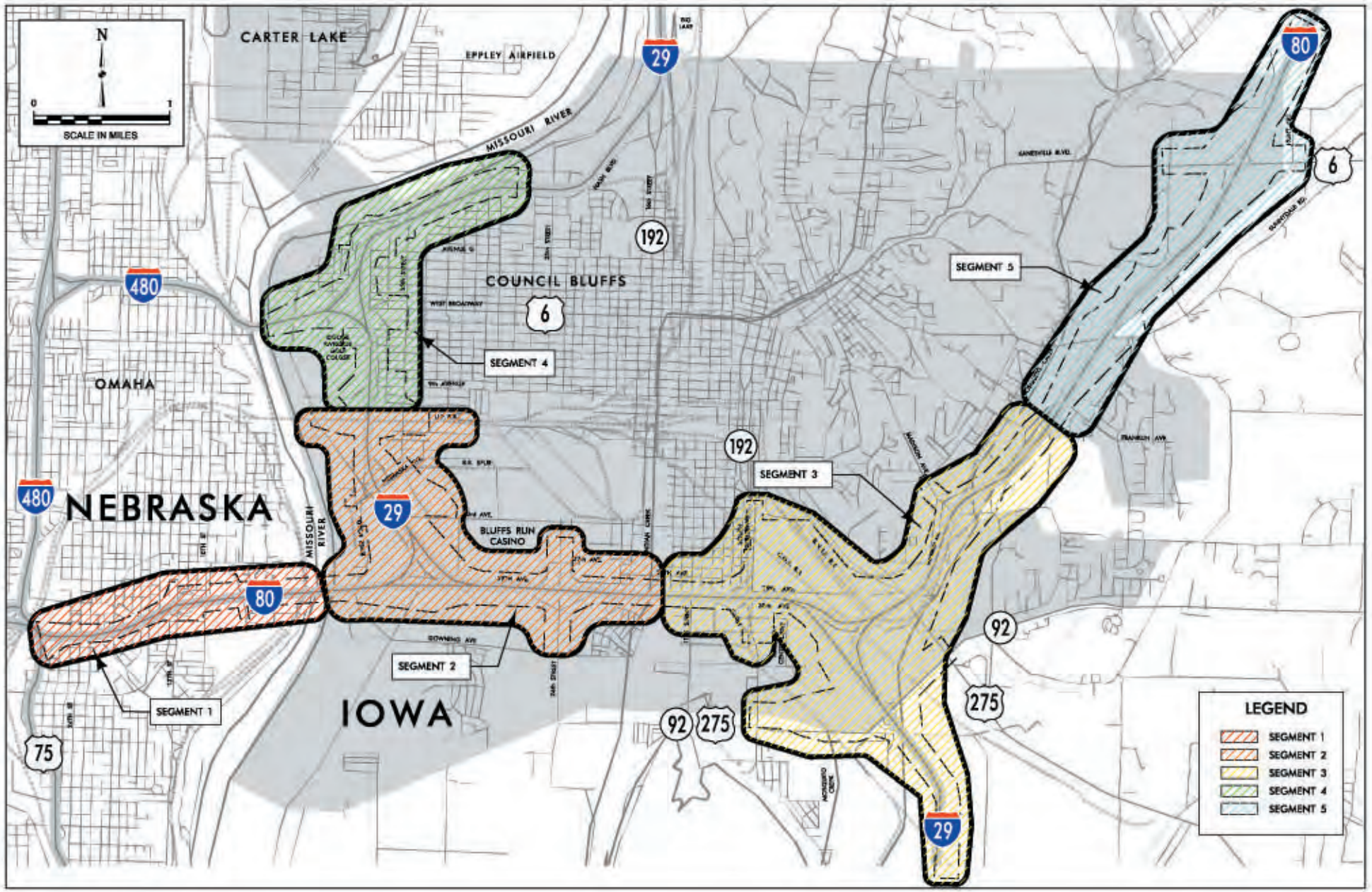


Figure 2-4
Proposed Segmentation

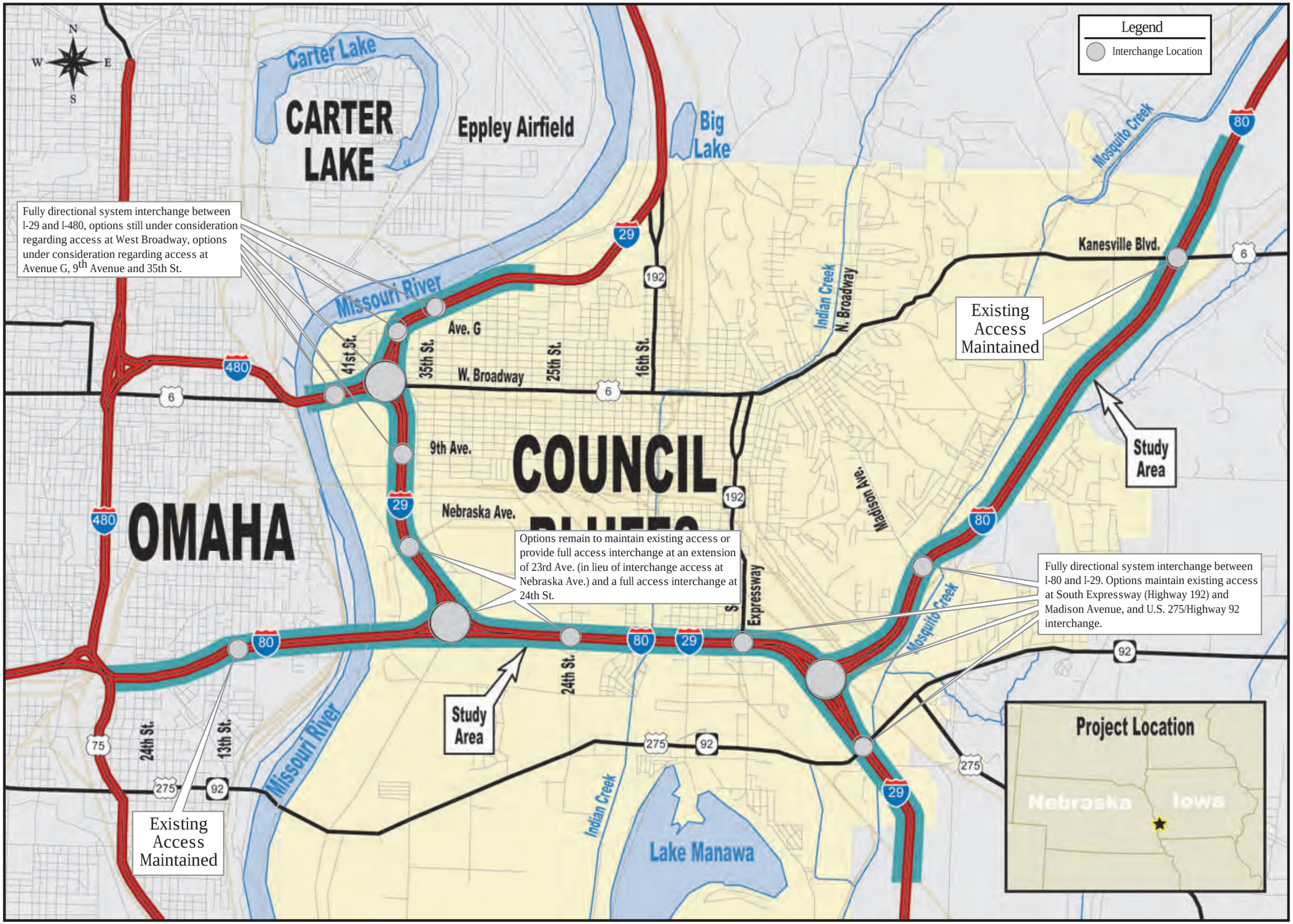
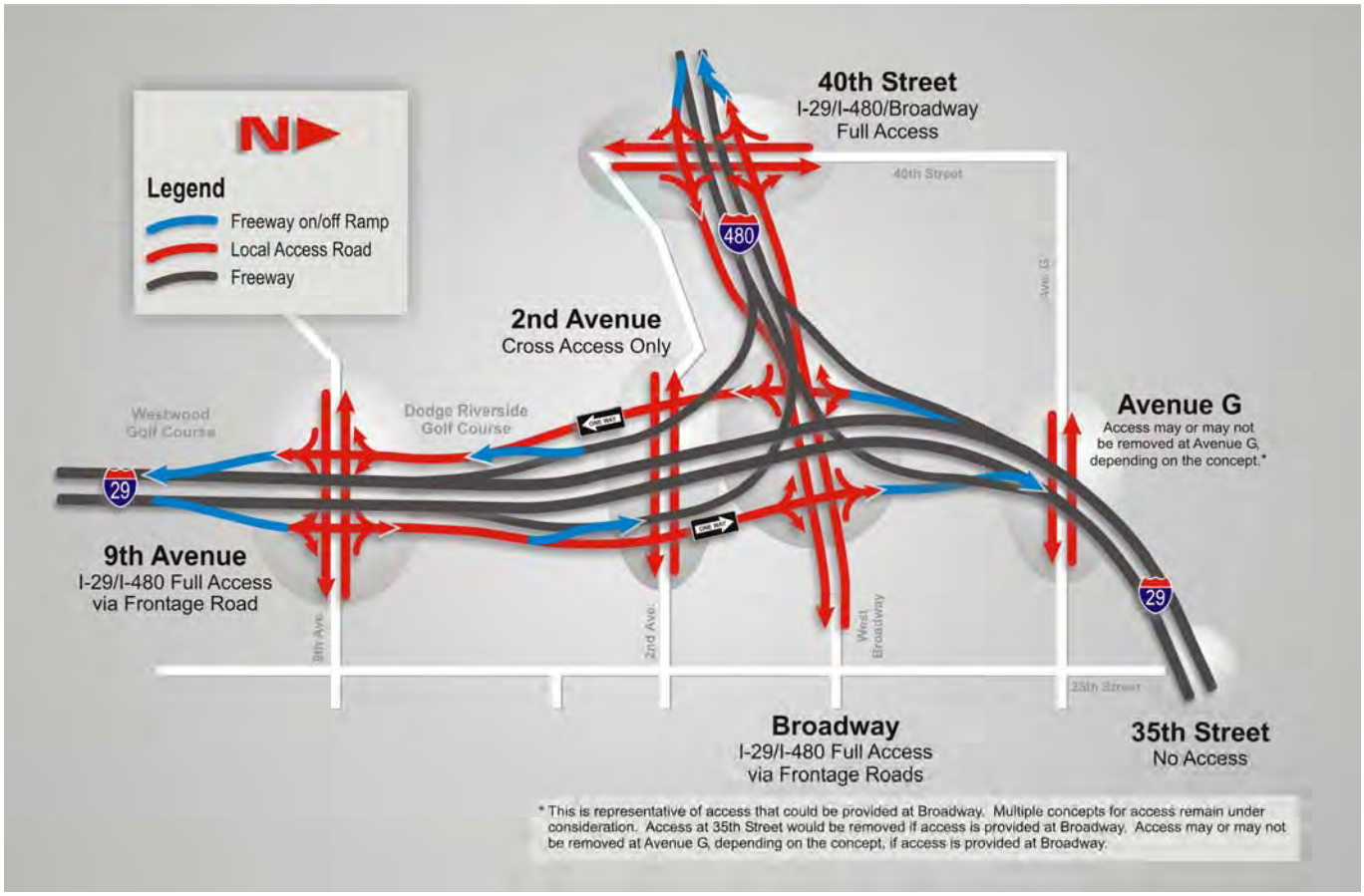


Figure 2-5
Proposed Interchange Access



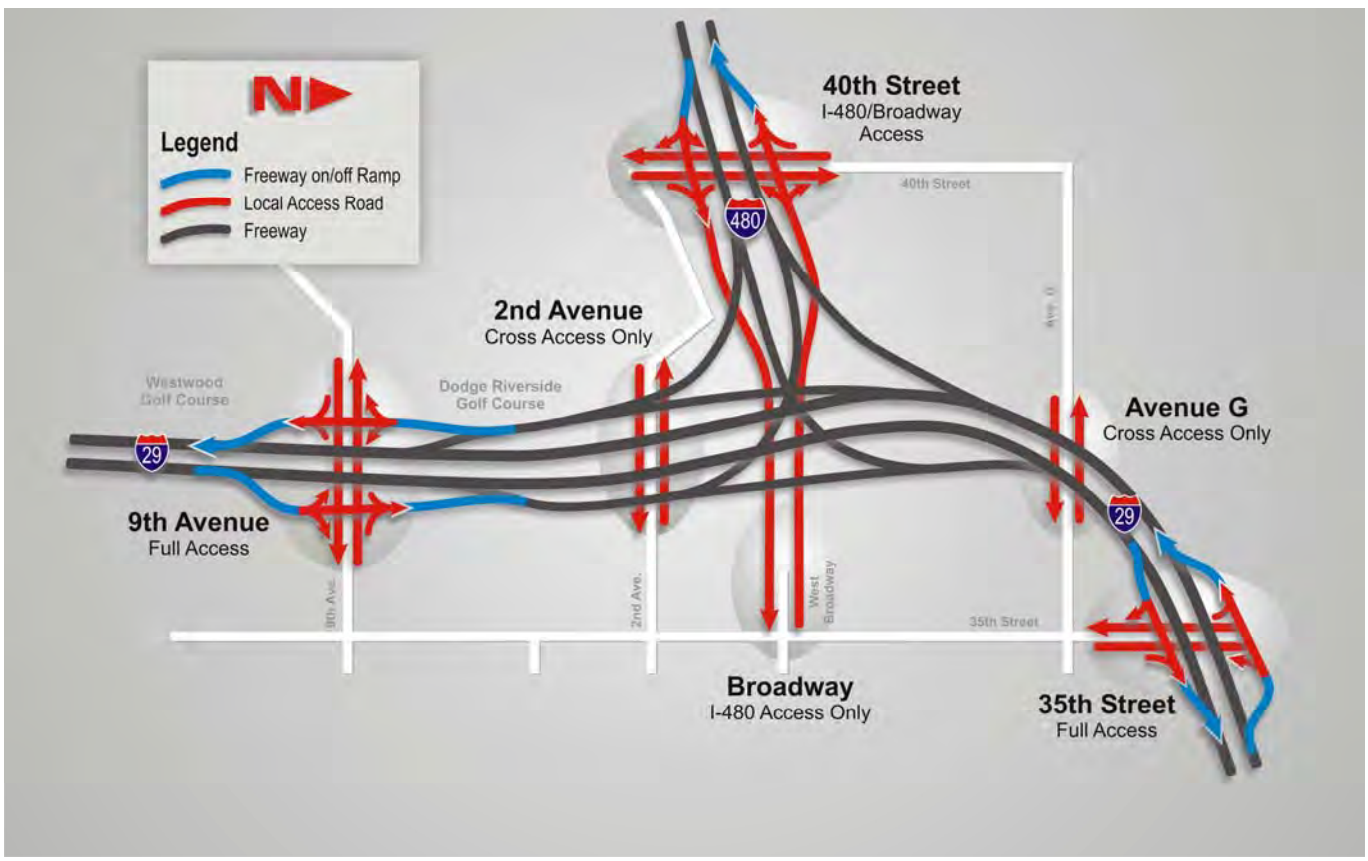


Figure 2-6
Broadway Access Schematics

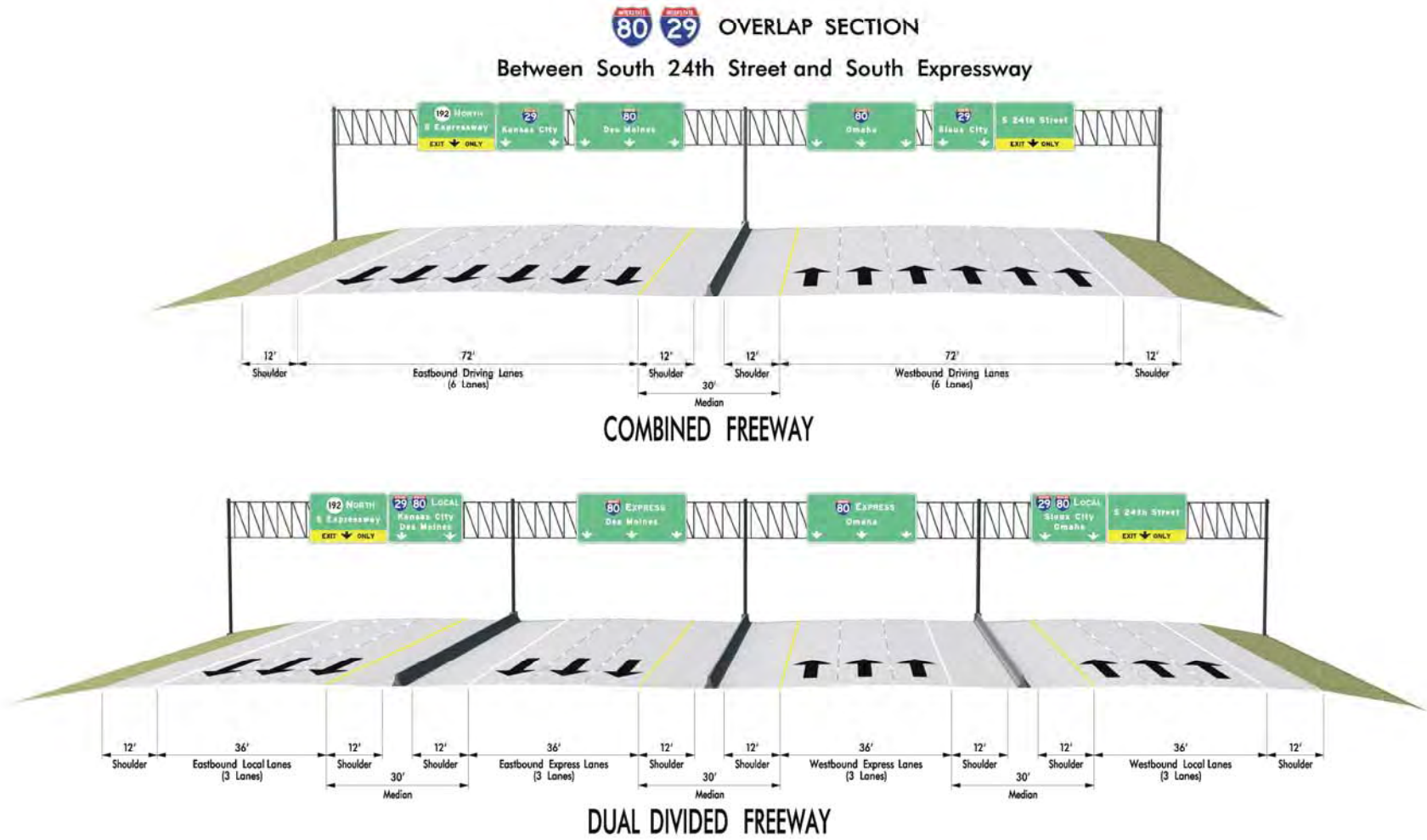


Figure 2-7
I-80/I-29 Overlap Section: Typical Cross Section

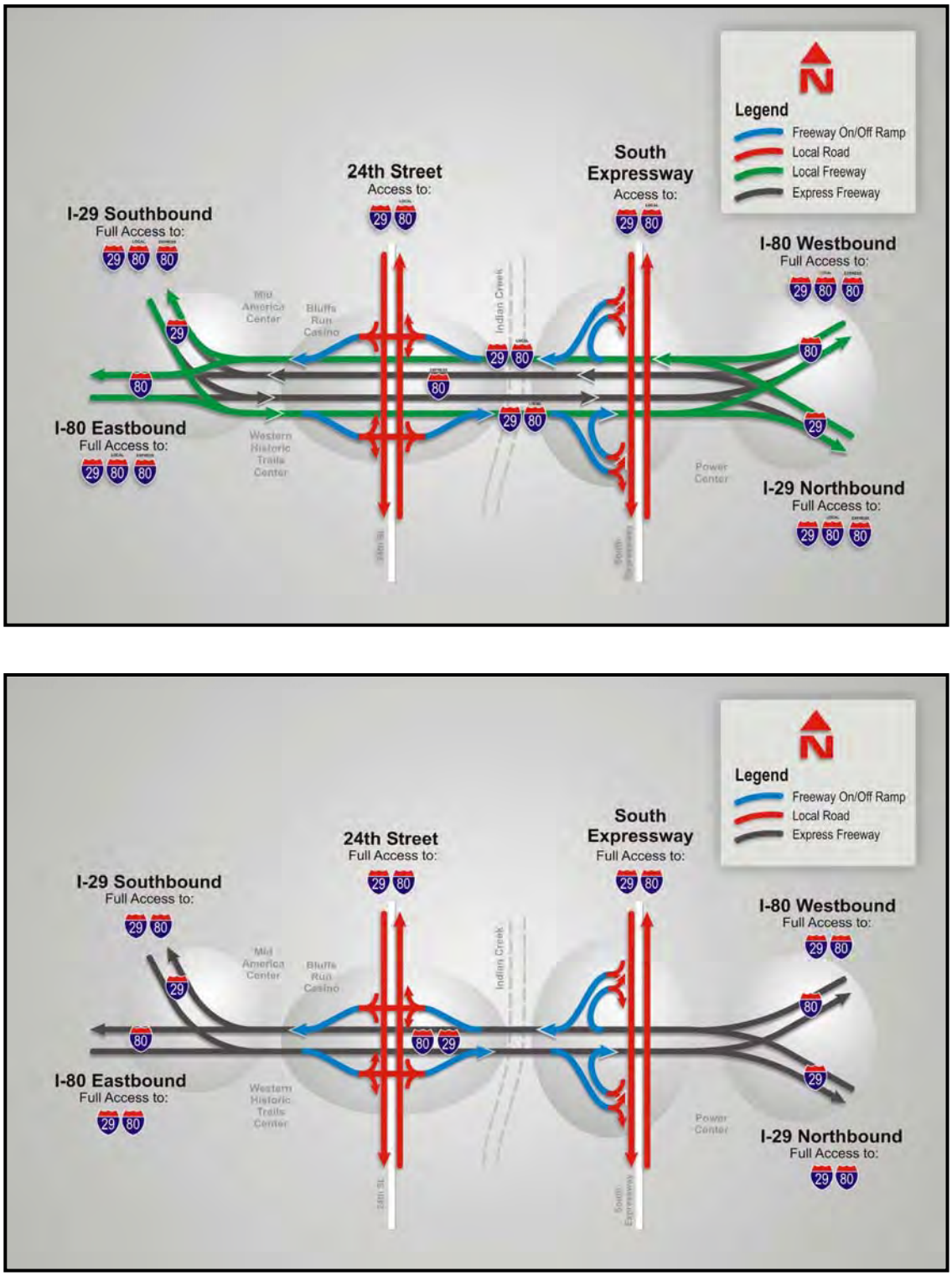


Figure 2-8
I-80/I-29 Overlap Section: Operational Schematic

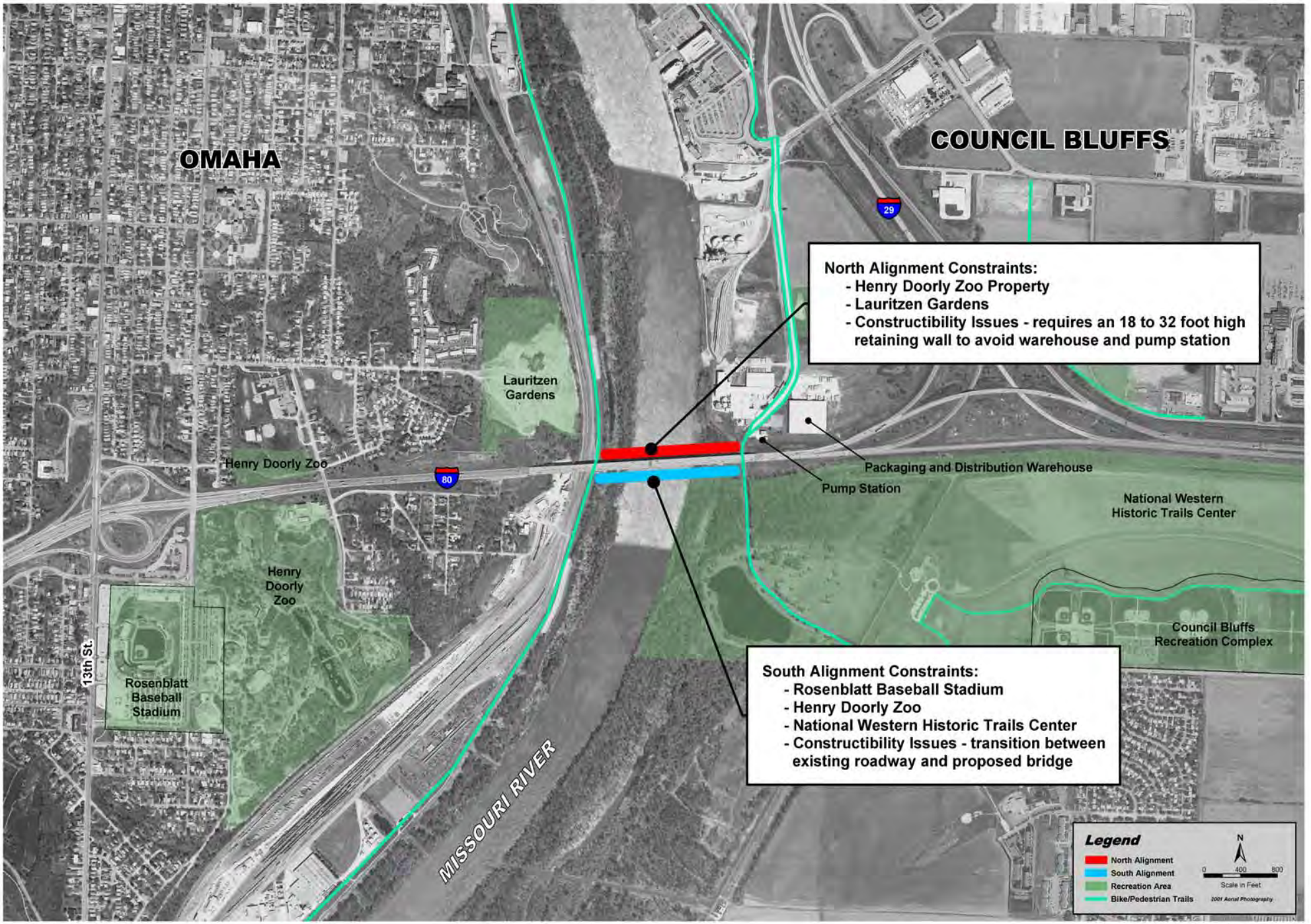


Figure 2-9
I-80 Missouri River Crossing

Section 3

SECTION 3

Affected Environment

This section describes the existing social, economic, and environmental setting of the Study Area for the CBIS Improvements Project that may be affected by the alternatives retained for detailed evaluation. It describes the existing human and natural environment within the Study Area in Pottawattamie County, Iowa, and Douglas County, Nebraska. The Study Area includes the alignment and ROW of all preliminary concepts that were developed and considered for the CBIS Improvements Project. Those concepts have been screened down to include only the reasonable concepts that remain under consideration. The composite of the reasonable concepts that remain under Tier 1 consideration is called the "area of potential impact" and is evaluated in Section 4.

This section is divided into two main subsections: 3.1, Socioeconomic Characteristics, and 3.2, Environmental Resources. The resources discussed in this section relate to the FHWA T 6640.8A. The following resource areas are not found within the Study Area and thus are not addressed in this document: wild and scenic rivers, coastal barriers, and coastal zones. Joint development is also not applicable and therefore is not addressed in this document. Technical memorandums were prepared for several resource topics and summarized for use in the EIS, and are included by reference. These technical memorandums contain more detailed information and are available from the Iowa DOT.

For the Tier 1 analysis, the area's social and environmental characteristics were determined using readily available data, including census data, existing maps, and GIS data, supplemented by limited windshield surveys and minimal field verification. Detailed environmental studies (e.g., wetland delineation and noise modeling) will be conducted as part of the Tier 2 process, as necessary. Major natural and man-made (built) features within or near the Study Area are shown in Figures 3-1 and 3-2 respectively.

Section 4, Environmental Consequences, considers the direct, indirect, and cumulative impacts associated with the area of potential impact.

3.1 Socioeconomic Characteristics

Social and economic characteristics of persons and households can be indicators or predictors of travel behavior. Forecast growth in population, households, and employment are translated into future travel patterns for the region by MAPA, the local metropolitan planning organization. For this reason, socioeconomic data for the Study Area are presented.

In general, the Council Bluffs/Omaha area functions as a single metropolitan area, with residents from each city crossing the Missouri River for employment and recreational opportunities. Data are presented for both areas.

General characteristics of the Study Area are presented in this section. Block groups, the smallest units of available census data, are addressed as part of the environmental justice evaluation in Subsection 3.1.4, and 4.1.5.

3.1.1 Social Characteristics (Populations and Households)

Table 3-1 lists the population characteristics of Pottawattamie and Douglas Counties. Between 1980 and 2000, both counties experienced a modest combined increase in population. From 1980 to 1990, Pottawattamie County decreased in population by almost 5 percent, but that loss was offset by an almost equal gain in Douglas County (4.9 percent) during the same period. Both Pottawattamie and Douglas Counties experienced population increases between 1990 and 2000—Pottawattamie experienced a 6.1 percent increase; Douglas, 11.3 percent.

Omaha is the larger of the two communities, with a 2000 population of 390,000. Both Council Bluffs and Omaha experienced population increases in the 1990s, which offset the losses of the previous 2 decades. The recent increase in population of Council Bluffs was not enough to return the city to its peak population of 60,348 in 1970.

TABLE 3-1
County and Municipality Population Trends

	Pottawattamie County, Iowa		Douglas County, Nebraska		Council Bluffs, Iowa		Omaha, Nebraska	
Year	Total	% Change	Total	% Change	Total	% Change	Total	% Change
1970	86,991	—	389,455	—	60,348	—	346,929	—
1980	86,561	0.00	397,038	1.95	56,449	-6.46	342,786	-1.19
1990	82,628	-4.54	416,444	4.89	54,315	-3.78	335,719	-2.06
2000	87,704	6.14	463,585	11.32	58,268	7.28	390,007	16.17

U.S. Census Bureau Decennial Census.

The population growth trend is projected to continue, according to MAPA's *2025 LRTP*, which forecasts population increases of 12.5 percent in Pottawattamie County[20] and 18 percent in Douglas County between 2000 and 2025.

Both counties project increases in the number of households and decreases in household size between 2000 and 2025, as shown in Table 3-2. The number of Douglas County households is forecast to increase by 24.4 percent, with a decline from 2.4 to 2.3 in average size. Pottawattamie County is projected to have 40,300 households in 2025, an increase of 17.1 percent, with a decrease in household size from 2.6 to 2.4. Some of the decrease can be attributed to the large number of baby boomers (those born between 1946 and 1964), who will no longer have children living at home (MAPA, 2001).

[20]The transportation Study Area includes only the western part of Pottawattamie County and the eastern part of Douglas County, where most of the population resides.

TABLE 3-2
Household Forecasts from MAPA's *2025 LRTP*

County	2000	2025	Number Change	% Change	Average Size 2000	Average Size 2025
Pottawattamie	34,400	40,300	5,900	17.1	2.56	2.40
Douglas	185,500	230,700	45,200	24.4	2.37	2.25

Age Characteristics

According to MAPA projections, the population in the study region will age substantially between 2000 and 2025, which could influence future planning, especially that of transit and specialized transit. In 2025, the baby-boom population will be between 61 and 79 years old, but the fastest growing segment of the senior population will be those over 85. In general, Pottawattamie County has an older population than Douglas County, with a median age of 36.5, compared to 33.6. Persons over 65 account for 13.7 percent of the Pottawattamie County population, compared to almost 11 percent for Douglas County. Table 3-3 provides a comparison of the age distributions between the two municipalities.

TABLE 3-3
Age Distribution

	Total	Under 18	18–64	65–84	85 years and over	Median Age
Iowa	2,926,324	25.03%	60.06%	12.71%	2.21%	36.6
Nebraska	1,711,263	26.27%	60.15%	11.62%	1.96%	35.3
Pottawattamie County, IA	87,704	25.85%	60.38%	12.15%	1.62%	36.5
Douglas County, NE	463,585	26.49%	62.56%	9.61%	1.34%	33.6
Council Bluffs, IA	58,249	25.90%	60.74%	11.80%	1.56%	34.6
Omaha, NE	390,112	25.56%	62.65%	10.32%	1.47%	33.5

U.S. Census Bureau, Census 2000.

3.1.2 Land Use and Development Trends

Existing Land Use

The Missouri River is channelized within the Study Area, with levees on both sides of the river. This levee system has enabled development of the Council Bluffs/Omaha area. The Study Area is predominately developed and contains a variety of land uses. Some of the notable land uses are shown in Figure 4-1. Because the Study Area is adjacent to the existing interstate, a large percentage of the land use in the Study Area is already dedicated to the transportation corridor.

Residential development within the Study Area in Council Bluffs is primarily along I-29, north of the UPRR Bridge and southwest of the 25th Street Interchange, and between the 24th Street I-80/I-29 Interchange and the I-80/I-29 South Expressway Interchange.

Industrial land use is primarily near the Nebraska Avenue I-29 Interchange, north of the 24th Street I-80/I-29 Interchange, the South Expressway I-80/I-29 Interchange, the East System Interchange, and south of the U.S. 275/I-29 Interchange. Industrial land use in the Study Area includes a tank farm located adjacent to the western side of I-29 and south of U.S. 275/IA 92. Commercial developments include gas stations and convenience stores at nearly every interchange; two riverboat casinos/hotels near the Nebraska Avenue I-29 Interchange; a greyhound racetrack, casino, theater complex, and the MAC west of the 24th Street I-80/I-29 Interchange; a regional shopping center near the Madison Avenue I-80 Interchange; and major retail developments south of the South Expressway I-80/I-29 Interchange. Agricultural land use in the Study Area is located near the I-80/U.S. 6 Interchange and in a small area of land currently leased for crop production as part of the interpretation plan of the WHTC.

Park and recreational land uses in Council Bluffs include Playland Park, Dodge Riverside Golf Course, Westwood Golf Course, and Westwood Park near the Broadway I-480 Interchange and the UPRR Bridge; WHTC and Council Bluffs Recreation Complex, located south of I-80/I-29 between the Missouri River and the 24th Street Interchange; Lakeshore Country Club near the U.S. 275/I-29 Interchange at Lake Manawa; and Valley View Park north of the Madison Avenue I-80 Interchange, as shown in Figure 3-2. Bicycle/pedestrian trails traverse the Study Area in several locations, also shown in Figure 3-2.

Although the Lauritzen Gardens, Henry Doorly Zoo, Rosenblatt Stadium, Deer Hollow Park, and Spring Lake Park are within the Study Area, most of the land along the corridor in Omaha is zoned for residential use. There are about 1,200 total structures (commercial, industrial, and residential) within the Study Area. Potential land use, ROW, and relocation impacts are discussed in detail in Section 4.

In general, several substantial traffic generators/attractors (casinos, recreation facilities, hotels, etc.) have capitalized on the location of the interstate to provide access to their facilities. The impacts and benefits to those land uses are discussed in Section 4.1.2

Planned Land Use

In addition to the existing land uses, substantial new development is planned near the Study Area in Council Bluffs. A large area along 24th Street was recently designated as an urban renewal area. The area to the east and north between the UPRR Bridge and the 24th Street I-80/I-29 Interchange is forecast to continue with commercial and industrial development. Additional industrial and commercial development is projected near the East System Interchange. There were plans to construct a condominium complex in the western part of Playland Park. However, the company who acquired the land did not have sufficient financing by the City Council deadline of August 28. Consequently, the council has applied for a grant to buy back the land from the developer and is exploring other options for use of the land (Omaha World Herald, September 14, 2004). There are plans to convert adjacent land to a natural park setting in the area of the proposed pedestrian bridge. The Council Bluffs Riverfront Master Plan (Council Bluffs, 2003) identified a complex of apartments on land currently owned by the Frito-Lay Corporation and by the City of Council Bluffs that was the former driving range for Dodge Park Golf Course. Frito-Lay recently announced that the plant would be closing by the end of October (Daily Nonpareil, October 6, 2004). The area surrounding the I-80/U.S. 6 Interchange is planned for future commercial

development, with residential land use south of the interchange (City of Council Bluffs, 1994). The land use along the Study Area in Omaha is urban and fully developed, and is therefore unlikely to change in the future.

3.1.3 Economic Characteristics

The Council Bluffs/Omaha area functions as a single economic unit. Many people live and work on opposite sides of the Missouri River, with more than 40 percent commuting to the other state to work (U.S. Census Bureau, 2000). Most goods and services in the area are provided by businesses located in the cities of Omaha and Council Bluffs and along the interstate system. Thus, ease of movement throughout the entire region is critical to economic success. Significant changes to a transportation system typically result in improvements in travel efficiencies as travel times or travel distances are reduced (NCHRP Report 456, 2001). Since nearly half the population lives and works on opposite sides of the river, efficient travel flow throughout the region results in time savings, and subsequently, financial savings.

Although displacements can result in minor decreases from a community's tax rolls, major transportation projects also yield economic benefits such as short-term generation of construction jobs, improved travel and shipping efficiency, and the improved economic viability of the area due to improved traffic flow. This section discusses the major economic characteristics of the Study Area in terms of employment, industries, and major employers that could be influenced by the proposed project.

Employment

Employment in the Study Area remained relatively stable during the 1990s. Table 3-4 shows the employment changes in Douglas and Pottawattamie Counties throughout the 1990s. Overall, between 1992 and 2001, the number of jobs increased 13.3 percent in Pottawattamie County and 10.2 percent in Douglas County despite some periods of minor decline. This increase accounts for approximately 36,412 more jobs. Most of the increase, 31,763 jobs, was in Douglas County. Over the 10-year period, the employment growth rate for Pottawattamie County (10.2 percent) was substantially higher than the State of Iowa's overall rate of 6.2 percent. During the same period, the growth rate for Douglas County (13.3 percent) exceeded Nebraska's statewide growth of 10 percent.

TABLE 3-4
Historical Employment Statistics

	Pottawattamie County, Iowa		Douglas County, Nebraska		Iowa		Nebraska	
Year	Avg. Annual Employment	% Change	Avg. Annual Employment	% Change	Avg. Annual Employment	% Change	Avg. Annual Employment	% Change
1992	42,723	—	219,685	—	1,440,385	—	813,076	—
1993	44,827	4.7	226,981	3.2	1,497,084	3.8	835,581	2.7
1994	44,812	-0.03	232,449	2.4	1,508,666	0.8	854,975	2.3
1995	44,907	0.2	238,962	2.7	1,505,094	-0.2	874,357	2.2
1996	46,183	2.8	243,490	1.9	1,533,334	1.8	883,284	1.0
1997	45,993	-0.4	245,079	0.7	1,527,935	-0.4	881,901	-0.2
1998	46,328	0.7	248,664	1.4	1,525,642	-0.2	891,709	1.1
1999	47,033	1.5	247,265	-0.6	1,532,729	0.5	885,755	-0.7
2000	47,085	0.1	250,468	1.3	1,522,141	-0.7	896,761	1.2
2001	47,372	0.6	251,448	0.4	1,534,836	0.8	899,429	0.3
1992–2001	—	10.2	—	13.3	—	6.2	—	10.0

Sources: Nebraska Workforce Development website; U.S. Bureau of Labor Statistics.

Industries

Table 3-5 provides a summary of employment by industry between 1980 and 2000. The largest industries in Council Bluffs are gaming, health care, and food processing, with gaming accounting for 3,307 employees; health care, 1,780; and food processing, 1,401. The largest employment sector in Omaha is the service sector, which accounts for 33.7 percent of total employment, followed by 23.8 percent in the retail and wholesale trades. Services and trade together account for 57.5 percent of metropolitan area's employment, reflecting the area's status as a regional service and trade center. The only decrease in employment that Douglas County experienced between 1980 and 2000 was a drop of 46.1 percent in the number of persons employed in farming occupations. For the same period, Pottawattamie County's farm employment dropped 60.3 percent. The losses in farm occupations indicate a shift from a rural employment landscape to one focused on urban occupations, including service industries, retail trade, and construction, each of which showed increases of more than 30 percent in both counties.

TABLE 3-5
Employment by Industry

Industry	Douglas County, Nebraska				Pottawattamie County, Iowa			
	Number of Employees			% Change 1980–2000	Number of Employees			% Change 1980–2000
	1980	1990	2000		1980	1990	2000	
Total Full– and part-time Employment	262,690	329,085	401,805	34.6	33,448	38,642	47,521	29.6
Farm employment	716	552	490	-46.1	2,512	1,981	1,567	-60.3
Nonfarm employment	261,974	328,533	401,315	34.7	30,936	36,661	45,954	32.7
Ag. service, forestry, fishing, and other	1,054	1,979	N/A	N/A	174	351	N/A	N/A
Mining	311	573	N/A	N/A	41	23	N/A	N/A
Construction	11,704	14,945	22,550	48.1	1,412	1,657	2,309	38.8
Manufacturing	32,472	30,893	33,133	2.0	3,196	4,124	4,437	28.0
Transportation and public utilities	22,922	19,910	23,539	2.6	3,100	2,158	2,442	-26.9
Wholesale trade	20,678	25,202	25,562	19.1	1,577	1,593	1,862	15.3
Retail trade	44,216	51,654	65,067	32.0	6,306	8,211	9,958	36.7
Finance, insurance, and real estate	29,178	36,387	42,156	30.8	2,056	2,190	2,398	14.3
Services	64,650	108,170	147,698	56.2	7,663	10,934	16,515	53.6
Government	34,789	38,820	37,941	8.3	5,411	5,420	5,636	4.0

Source: Iowa State University, Department of Economics, 2002.

Pottawattamie County also exhibited a substantial loss in the percentage of people employed in the Transportation/Public Utilities industry. While Douglas County experienced a similar decline between 1980 and 1990, this industry rebounded between 1990 and 2000, resulting in a modest 2.6-percent overall increase.

Under the assumption that the telecommunications, internet, gaming, and certain manufacturing industries will continue to grow at their current pace, and that other area industries and businesses will maintain or marginally increase their steady employment patterns, MAPA forecasts that employment in Douglas County will increase 18.3 percent from 336,300 in 2000 to 398,000 jobs in 2025. For the same period, Pottawattamie County is forecast to experience a 27.3 percent increase in employment from 37,300 to 47,500 jobs.

Major Employers

Alegent Health in Omaha is the largest employer in the Omaha/Council Bluffs metropolitan area, with more than 7,750 employees. Methodist Health System is the next largest employer, with more than 3,500. Five hospitals in Omaha employ more than 1,000 people. The four employers in Council Bluffs that employ more than 1,000 people include three gaming establishments and the Council Bluffs Community School District. Table 3-6 lists the major businesses in Omaha and Council Bluffs with more than 1,000 employees. Other business effects of the CBIS improvements are discussed in Subsection 4.1.4, Economic Impacts.

Only five of the major (greater than 1,000 employees) employers in Table 3-6 are located within the Study Area: Ameristar Casino, Harrah's Casino, Bluff's Run Casino and

Greyhound Park, UPRR, and the Omaha Public Schools. The casinos are near the Study Area, and parts of their parking lots are within the area of potential impact. The UPRR owns track and property in portions of the Study Area. Bancroft Academy (an Omaha Public School) has a portion of a baseball field within the Study Area. Wal-Mart and Sam's Club are also located southeast of the East System Interchange just outside the Study Area. While all businesses generate and attract some traffic, the aforementioned major employers generate and attract traffic at a level that could affect or be affected by proposed changes to the CBIS. Because the development along the overlap section is clustered, it does serve as a secondary attractor. The approximately 70 businesses within the area of potential impact, are generally small to medium enterprises (restaurants, storage units, gas stations, vehicle maintenance shops, tool and die shops, strip mall stores, etc.) with no more than 25 employees per business. Out-of-home dining is a substantial growth industry having experienced an approximately 33 percent increase between 1970 and 1997 (U.S. Dept. Agriculture, 1998).

TABLE 3-6
Major Employers in Omaha and Council Bluffs

Company	Number of Employees	Location	Industry
Alegent Health	7,750 or more	Omaha	Healthcare
Methodist Health System	3,500 or more	Omaha	Healthcare
AVAYA Communication	2,500 or more	Omaha	Manufacturing
Baker's Supermarkets, Inc.	2,500 or more	Omaha	Retail Trade
City of Omaha	2,500 or more	Omaha	Public Administration
ConAgra Food, Inc.	2,500 or more	Omaha	Manufacturing
First Data Corp.	2,500 or more	Omaha	Finance
First National Bank of Omaha	2,500 or more	Omaha	Finance
Hy-Vee Food Stores	2,500 or more	Omaha	Retail Trade
Mutual of Omaha Companies	2,500 or more	Omaha	Insurance
Nebraska Health System	2,500 or more	Omaha	Healthcare
Odyssey Staffing, Inc.	2,500 or more	Omaha	Staffing
Omaha Public Schools	2,500 or more	Omaha	Education, Public
Oriental Trading Company	2,500 or more	Omaha	Wholesale Trade
Qwest	2,500 or more	Omaha	Information
Staff Mid-America	2,500 or more	Omaha	Staffing
Union Pacific Railroad	2,500 or more	Omaha	Transportation
University of Nebraska at Omaha	2,500 or more	Omaha	College/University, Public
University of Nebraska Medical Center	2,500 or more	Omaha	Healthcare
West TeleServices Corporation	2,500 or more	Omaha	Telemarketing
Ameristar Casino	1,000 to 2,499	Council Bluffs	Gaming
Ameritrade Holding Corporation	1,000 to 2,499	Omaha	Finance
Bluff's Run Casino & Greyhound Park	1,000 to 2,499	Council Bluffs	Gaming
C.S.G. Systems, Inc.	1,000 to 2,499	Omaha	Information
Catholic Archdiocese of Omaha	1,000 to 2,499	Omaha	Religious Organization
Commercial Federal Bank	1,000 to 2,499	Omaha	Finance
Council Bluffs Community Schools	1,000 to 2,499	Council Bluffs	Education, Public
Creighton University	1,000 to 2,499	Omaha	College/University, Private
Custom Edge, Inc.	1,000 to 2,499	Omaha	Computers
Douglas County Commissioner's Office	1,000 to 2,499	Omaha	Public Administration
Harrah's Casino Hotel	1,000 to 2,499	Council Bluffs	Gaming

TABLE 3-6
Major Employers in Omaha and Council Bluffs

Company	Number of Employees	Location	Industry
InfoUSA, Inc.	1,000 to 2,499	Omaha	Information
J.C. Penney Company, Inc.	1,000 to 2,499	Omaha	Retail Trade
Lozier Corp.	1,000 to 2,499	Omaha	Manufacturing
Marriott Worldwide Reservations Center	1,000 to 2,499	Omaha	Service
Millard Public Schools	1,000 to 2,499	Omaha	Education, Public
Nebraska Beef	1,000 to 2,499	Omaha	Manufacturing
Nebraska Furniture Mart	1,000 to 2,499	Omaha	Retail Trade
Omaha Public Power District	1,000 to 2,499	Omaha	Utilities
Omaha Steaks International, Inc.	1,000 to 2,499	Omaha	Manufacturing
Omaha World-Herald Company	1,000 to 2,499	Omaha	Information
Physicians Mutual Insurance Company	1,000 to 2,499	Omaha	Insurance
Sears Roebuck and Company	1,000 to 2,499	Omaha	Retail Trade
Simmonds Restaurant Management, Inc.	1,000 to 2,499	Omaha	Service
Sitel Corp.	1,000 to 2,499	Omaha	Service
St. Joseph Hospital	1,000 to 2,499	Omaha	Healthcare
U.S. Postal Service–Omaha	1,000 to 2,499	Omaha	Transportation
United Parcel Service	1,000 to 2,499	Omaha	Transportation
Vlasic Foods International	1,000 to 2,499	Omaha	Manufacturing
Wal-Mart	1,000 to 2,499	Omaha	Retail Trade
Werner Enterprises, Inc.	1,000 to 2,499	Omaha	Transportation

Source: The Greater Omaha Chamber of Commerce Directory of Major Employers, Omaha 2000–2001.

3.1.4 Environmental Justice

For all federally funded programs and activities, the issue of equality must be addressed in compliance with Title VI of the 1964 Civil Rights Act (Title VI) and Environmental Justice Executive Order (EO) 12898. Title VI states that "No person in the United States shall, on the ground of race, color, age, sex, disability, religion or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

EO 12898 requires that federal agencies achieve environmental justice by identifying and addressing disproportionately high and adverse human health and environmental effects, including both the social and economic effects of their programs, policies, and activities on minority and low-income populations. Census 2000 data, the most recent available, was used to characterize the population directly affected by the project. Since the Census Bureau must protect the privacy of individuals, only a limited amount of socioeconomic information is available at the block level due to confidentiality. For the purposes of this analysis, census blocks were analyzed to determine the population and racial characteristics in the Study Area (Figure 3-3), and block groups were used to analyze income characteristics (Figure 3-4).

Minority Populations

Table 3-7 provides a summary of minority populations per the 2000 Census. Council Bluffs and Omaha are both predominately white/Caucasian communities. In Omaha, a larger and

more urbanized area, more than 78 percent of the population is white/Caucasian, with the minority population including primarily African American and Hispanic residents. In Council Bluffs, 94 percent of the population is white/Caucasian, with most of the minority population classified as Hispanic or More than Two Races.

The population composition of the Study Area in Iowa is similar to the composition in the City of Council Bluffs. However, the Study Area population composition in Nebraska has a higher proportion of Hispanics and lower proportion of racial minorities than the City of Omaha. Approximately 13,000 people (10,000 people in Council Bluffs and 3,000 people in Omaha) live within census blocks that are included in the Study Area boundary. Based on an analysis of census block data, the Study Area in Council Bluffs includes approximately 90 percent Caucasians, 5 percent Hispanics, and 5 percent racial minorities. In Omaha, the Study Area includes approximately 75 percent Caucasians, 20 percent Hispanics, and 5 percent racial minorities.

Despite these general characteristics of the Study Area, it is possible that populations of concern are located within specific areas of the corridor. Section 4.1.5, Environmental Justice, considers the potential for disproportionately high and adverse impacts on minority populations caused by implementation of the CBIS Improvements Project.

Income Characteristics

The Study Area as a whole enjoys median income of $43,115, well above the 2004 U.S. Department of Health and Human Service poverty level of $18,850 for a family of four. The median income in Council Bluffs, $36,221, is below the state median income (see Table 3-8). Pottawattamie County exhibits a median income above $40,000, which is above the state median.

Omaha and surrounding Douglas County have incomes above the state average. Their median incomes of $43,209 and $40,006, respectively, are well above the poverty level as exhibited in Table 3-9.

Tables 3-8 and 3-9 provide data for the selected block groups with proportions of low-income residents above Council Bluffs and Omaha levels, respectively. The proportion of low-income residents (those with households below the poverty level) in the Study Area of Iowa (8.6 percent) is comparable to the proportion for Council Bluffs (10.2 percent). The Study Area in Nebraska has a higher proportion of low-income residents (26.3 percent) than in Omaha (18.3 percent).

The Council Bluffs Community Schools collect data on the family incomes of their students, primarily for the subsidized school lunch program. The Free/Reduced Program is part of the National School Lunch Program. It enables students, from families with incomes below levels that are set by school officials annually, to receive cafeteria lunches free or at reduced cost for a given school year. According to the 2000 CB-21 Plan, about 40 percent of the students in the Council Bluffs Community School District receive subsidized lunches, a 24-percent increase from 1990. In Council Bluffs and Omaha, the Study Area includes Block Groups with high proportions of households below the poverty level. Section 4.1.5, Environmental Justice, discusses the potential for the CBIS Improvements project to have disproportionately high and adverse impacts on low-income populations.

TABLE 3-7
Racial, Ethnic, and Special Groups
2000 Detailed Minority Population

	Iowa		Nebraska		Pottawattamie County, Iowa		Douglas County, Nebraska		Council Bluffs, Iowa		Omaha, Nebraska	
	Total	**Percent**	**Total**	**Percent**	**Total**	**Percent**	**Total**	**Percent**	**Total**	**Percent**	**Total**	**Percent**
Total Population	2,926,324	—	1,711,263	—	87,704	—	463,585	—	58,249	—	390,112	—
White/Caucasian	2,749,737	94.0	1,533,787	90.0	84,236	96.0	375,016	80.9	55,362	95.0	305,485	78.3
African American	59,758	2.0	67,435	3.9	646	0.7	52,214	11.3	585	1.0	51,173	13.1
American Indian and Alaska Native	9,263	0.3	15,421	0.9	265	0.3	3,265	0.7	218	0.4	3,065	0.8
Asian	35,023	1.2	21,126	1.2	548	0.6	7,912	1.7	378	0.7	7,167	1.8
Native Hawaiian and Other Pacific Islander	955	0.0	673	0.0	29	0.0	154	0.0	25	0.0	136	0.0
Other (includes 2 or more races)	71,588	2.5	72,821	4.3	1,980	2.3	25,024	5.4	1,681	2.9	23,086	5.9
Hispanic or Latino (all races)	82,473	2.8	94,425	5.5	2,892	3.3	30,928	6.7	2,594	4.4	29,397	7.5
1999 Median Household Income	$39,469		$39,250		$40,089		$43,209		$36,221		$40,006	
Families Below Poverty Level		6.0		6.7		6.4		6.7		8.2		7.8

Source: U.S. Census Bureau, 2000; IUPLR, Inter-University Program for Latino Research, University of Notre Dame, 2002.

TABLE 3-8
Potentially Affected Households in Iowa Below Poverty Level in 1999 Figures

Place	Total Households	Households with Income Below Poverty Level	Percent of Households Below Poverty Level	Median Household Income
State of Iowa	1,150,197	107,196	9.3%	$39,469
Pottawattamie County	33896	2,876	8.5%	$40,089
City of Council Bluffs	22,913	2,328	10.2%	$36,221
Census Tracts				
Census Tract 30300	1,339	74	5.5%	$40,096
Census Tract 30401	1,694	251	14.8%	$34,018
Census Tract 30402	1,190	95	8.0%	$35,500
Census Tract 30800	1,172	95	8.1%	$35,952
Census Tract 31200	1,301	86	6.6%	$42,017
Census Tract 31300	854	119	13.9%	$33,480
Census Tract 31400	959	125	13.0%	$41,281
Census Tract 31500	750	66	8.8%	$39,138
Census Tract 31601	822	10	1.2%	$75,398
Census Tract 31602	866	6	0.7%	$53,899
Census Tract 31700	1,415	111	7.8%	$46,382
Census Tract 31800	1,063	22	2.1%	$60,492
Census Tract Average	*13,425*	*1,060*	*7.9%*	*$43,686*
Block Groups				
Block Group 30401-3	320	43	13.4%	$38,712
Block Group 30401-4	388	147	37.9%	$20,431
Block Group 31200-3	580	74	12.8%	$41,944
Block Group 31300-1	409	66	16.1%	$32,386
Block Group 31300-2	445	53	11.9%	$36,250
Block Group 31400-2	477	103	21.6%	$33,487
Block Group 31500-1	497	55	11.1%	$43,208
Block Group 31700-2	274	56	20.4%	$28,929
Block Group Average	*3,390*	*597*	*17.6%*	*$35,219*

U.S. Census Bureau, 2000 Census of Population and Housing, Summary File 1.

TABLE 3-9
Potentially Affected Households in Nebraska Below Poverty Level in 1999 Figures

Place	Total Households	Households with Income Below Poverty Level	Percent of Households Below Poverty Level	Median Household Income
State of Nebraska	666,995	122,808	18.4%	$39,250
Douglas County	182,553	30,194	16.5%	$43,209
City of Omaha	157,034	28,747	18.3%	$40,006
Census Tracts				
Census Tract 000500	355	142	40.0%	$20,924
Census Tract 002000	1,104	359	32.5%	$27,135
Census Tract 002300	802	158	19.7%	$33,409
Census Tract 002400	1,203	312	25.9%	$30,986
Census Tract 002500	988	185	18.7%	$38,125
Census Tract 003200	973	425	43.7%	$22,396
Census Tract Average	5,425	1,581	29.1%	$29,662
Block Groups				
Block Group 000500-1	349	136	39.0%	$21,250
Block Group 002000-2	406	120	29.6%	$29,722
Block Group 002400-2	335	89	26.6%	$32,535
Block Group 002400-3	231	55	23.8%	$32,450
Block Group 002400-4	379	132	34.8%	$26,250
Block Group 002500-3	285	67	23.5%	$45,433
Block Group 003200-1	441	169	38.3%	$23,750
Block Group Average	*2,426*	*768*	*31.7%*	*$29,369*

Source: U.S. Census Bureau, 2000 Census of Population and Housing, Summary File 1.

3.1.5 Neighborhoods, Community Services and Facilities

Community services and facilities consist of schools, churches, cemeteries, police and fire departments, city and township halls, hospitals, and public utilities. These facilities typically are located within municipal boundaries and near population centers. Figure 3-2 shows the location of institutions along the CBIS.

Health Care

Council Bluff's medical resources include two full-service hospitals—Jennie Edmundson Hospital and Alegent Health Southwest Iowa Medical Center—as well as numerous specialized clinics. Jennie Edmundson Hospital is the larger facility, and houses the Southwest Iowa Cancer Center, the Leete Breast Imaging Center, and a nursing program. Omaha hospitals provide medical services to residents of Nebraska, Iowa, South Dakota, Minnesota, and Kansas. Omaha's health resources include three teaching hospitals—Saint Joseph Hospital, Nebraska Health Systems/University Hospital, and the Omaha Division of the VA Nebraska/Western Iowa Health Care System—as well as five nursing schools, two pharmacological centers, and a dental college.

Notable services available in Omaha include the Saint Joseph Hospital Trauma Center and life-flight medical helicopter, which serves a 150-mile radius in Nebraska and Iowa; the University of Nebraska Medical Center transplant center, which is one of the two busiest transplant centers in the world; and Children's Hospital, which is Nebraska's only pediatric specialty hospital.

Emergency Services

Within Pottawattamie and Douglas Counties, there are six fire departments and four police departments. Troop A of the Nebraska State Patrol, with jurisdiction over all of Douglas County, is also located in Omaha. The District 3 office of the Iowa State Patrol serves Pottawattamie County and is located in Council Bluffs.

Schools

The Council Bluffs Community School District serves families in Carter Lake, Crescent, and Council Bluffs. More than 10,000 students attend three high schools, two junior high schools, and 14 elementary schools. Omaha public schools include 61 elementary schools, 11 junior highs, and 10 high schools. There are 60 private schools (K–12) in Omaha and 6 in Council Bluffs. There are 10 colleges and universities in the Omaha and Council Bluffs area. Five schools in Council Bluffs are located within the Study Area—Community Christian School, Iowa Western Community College, Iowa School for the Deaf, Liberty Christian School, and Lewis Central High School. In Omaha, only Bancroft Academy is located within the Study Area.

Churches and Cemeteries

The City of Council Bluffs is home to more than 80 places of worship. The City of Omaha has more than 100 religious institutions; none are within the Study Area. Six churches in Council Bluffs are located within the Study Area—the Open Door Baptist Church, the Crossroads Christian Center, Church of Christ, Valley View Church, the Seventh Day Adventist Church, and the First Assembly of God Church (Figure 3-2).

There are 9 cemeteries in Council Bluffs and 14 in Omaha, none of which are within the Study Area.

Quality of Life/Community Cohesiveness

Many attributes contribute to the quality of life, including availability and proximity of recreational lands, common religious institutions, educational institutions, neighborhood access, and circulation. Another feature that influences quality of life within a community is the availability of parks and open space in close proximity to residential development**.** Specific parks located adjacent to the residential areas in the Study Area include Westwood Park and Playland Park. Golf courses in the Study Area include Dodge Riverside Golf Course (18-hole public course) and Westwood Park Golf Course (9-hole public course), both are adjacent to I-29 in Council Bluffs, and Lakeshore Country Club Golf Course (an 18-hole private course) near U.S. 275 and I-29 at Lake Manawa. The Parks and Recreation portion of Subsection 3.2.7, Public Lands/4(f) Considerations, further describes recreational facilities within the Study Area.

Access and continuity both to and within neighborhoods is another factor that contributes to quality of life. The Study Area contains numerous local roads that provide access to existing homes, businesses, and parks. Proposed access changes are explained in Table 2-3 in Section 2, Alternatives, and potential impacts associated with the access changes are described in Section 4.1.6, Neighborhoods, Community Services and Facilities, as part of the discussion of community cohesion.

Community cohesion is the sense and strength of neighborhood identity felt by residents for the people and facilities of the surrounding community. Community cohesion within the CBIS Improvements Project Study Area is demonstrated by the presence of neighborhood associations or neighborhood watch groups, as well as the concentration of neighborhood residents sharing a common religion and attending religious institutions, such as the Community Christian School located at 3561 Avenue G, east of the interchange at I-29 and Avenue G. Concentrations of these types of institutions within walking distance are important to community members, see Figure 3-2. Although Council Bluffs has neighborhood watch groups, there are no official neighborhood associations within the city (Beaugard, 2003).

In Nebraska, there are two neighborhood associations within the Study Area—Highland Resident Council and Deer Park Neighborhood Association. Belonging to a neighborhood association can create a sense of ownership or a stake in the community. These associations are intended to establish and enforce rules and regulations for the community to help maintain quality of life and increase property values. Boundaries for the Riverview Athletic Association and Spring Lake Park Habitat Restoration and Preservation Team were also identified within the Study Area.

Quality of life is enhanced by the bicycle/pedestrian paths that traverse the Study Area, connecting communities and providing recreational opportunities. A pedestrian bridge over the Missouri River is planned to connect Council Bluffs and Omaha and allow pedestrian and bicycle traffic between the cities and along trails on both sides of the river. Construction of the pedestrian bridge could increase use of the trail system.

Additionally, a new South Omaha Bridge is proposed to replace the existing bridge and would allow bicycle and pedestrian access between Iowa and Nebraska. Such facilities connect neighbors in terms of transportation linkage and also serve as a recreational meeting

place. The I-80, I-480, and I-680 bridges prohibit pedestrian and bicyclist use and other bridges in the area have substandard widths, making bicycle and pedestrian crossing hazardous.

Utilities

Natural Gas. Omaha is served by Metropolitan Utilities District, a publicly-owned, nonprofit water and gas utility with more than 2,100 miles of mains and more than 176,000 customers. Metropolitan Utilities District maintains its own backup, liquefied natural gas facility. Omaha is also headquarters of the Northern Natural Gas Company, the nation's largest natural gas pipeline company. Northern provides three major natural gas lines to the Omaha area. Council Bluffs receives natural gas services from privately-owned Aquila, formerly Peoples Natural Gas.

Electric. Nebraska is the only public power state in the nation. All electric utilities are nonprofit and customer owned. The Omaha Public Power District is headquartered in Omaha and serves 5,000 square miles in eastern Nebraska. Omaha Public Power District is a charter member of the Mid-Continent Area Power Pool, which coordinates electric power generation and transmission throughout seven upper midwestern states. Omaha is located close to western low-sulfur coal, which ensures Omaha's energy needs well into the future. MidAmerican Energy provides electrical service for Council Bluffs, which is home to one of that company's largest coal-fired generating stations. The three generating units located on the city's southern edge have a total capacity of 809 megawatts.

Water. Omaha's primary water sources are the Missouri River and a system of wells along the Platte River Basin. Current capacity of Metropolitan Utilities District's two water treatment plants is 234 million gallons per day (mgd), with current average daily demand of 91 mgd. Another treatment plant with a 100-mgd capacity is planned by 2006. Omaha's water quality meets or exceeds all current and proposed federal water standards. The Council Bluffs Water Works provides water service to the Council Bluffs area. The Missouri River is the community's major source of water. Missouri River water is seasonally supplemented by some well water. The publicly owned plant has a capacity of 20 mgd, with the average consumption of 9.2 mgd and a peak consumption of 16.1 mgd. The elevated storage capacity is 9.7 mgd (see Subsection 3.2.2, Water Quality and Water Resources, for further information on water resources in the Study Area).

No direct impacts to utilities are anticipated. Therefore, there is no discussion of utility impacts in Section 4. However, potential utility line relocation could be required during construction. Therefore, all construction activities would require coordination with all public utilities to avoid potential conflicts.

3.1.6 Bicycle and Pedestrian Trails

Bicycle and pedestrian facilities throughout the Study Area consist of various systems of sidewalks and trail facilities. There are more than 100 miles of paved and unpaved trails within the Omaha/Council Bluffs metropolitan area. The Papio NRD maintains more than 70 miles of mainline trails, connector trails, and spur trails in the Omaha metro area. Trails in Douglas County are managed by the City of Omaha and Douglas County. The City of

Council Bluffs maintains more than 20 miles of paved and unpaved trails on the Iowa side of the river. There are approximately 6.8 miles of trails within the Study Area, as shown in Figure 3-2. Specific trails located within the general Study Area are discussed in Subsection 3.2.7, Public Lands/4(f) Considerations.

The plan for trails in the metropolitan area consists of 140 miles of trails yet to be built, including a number of trails planned within the Study Area. In addition, a pedestrian bridge across the Missouri River just north of the I-480 Bridge is currently being designed and is expected to be completed in 2005.

In Tier 2, an examination of bicycle and pedestrian corridors (including any ADA designated accommodations) will identify any pedestrian corridors that cross the project. As appropriate, the inclusion of features such as sidewalks will be considered at interchanges to connect the residents to recreation and employment sites.

3.1.7 Transportation

The regional transportation system includes an established roadway system, passenger and freight rail, water transportation, and airports. Bicycle routes and pedestrian paths as discussed in the previous subsection are available in both communities. MAT provides public transportation service in Omaha and Council Bluffs.

Existing Roadways

Omaha and Council Bluffs are strategically located at the intersection of I-29 and I-80. I-80 connects New York City and San Francisco and I-29 provides access to Canada and Texas (via I-35). Interstates make traveling convenient within this large metropolitan area. This interstate access is complemented by the convergence of four U.S. and eight state highways in the region. The Study Area is also served by I-480, which runs from western Council Bluffs through downtown Omaha, connecting with I-80 in west Omaha.

There are 14 interchanges in the Study Area. Three of the interchanges in Council Bluffs serve commercial/industrial areas. Other U.S. highways that pass through the Study Area include U.S. 275 (Rockport, Missouri, to Valentine, Nebraska) and U.S. 6 (Bishop, California, to Provincetown, Massachusetts) (MAPA; Greater Omaha Chamber of Commerce, 2003).

Maintenance of existing arteries and continued strategic expansion of transportation networks is a priority of local officials. More than 600 projects, ranging from pavement repairs to bridge replacement and street reconstruction, are slated for the Omaha/Council Bluffs metropolitan area during Fiscal Years (FY) 2004–2009, according to the Transportation Improvement Program prepared by MAPA.

Rail Network

As Omaha developed into a pioneer trade center, it was selected as the eastern terminus of the first transcontinental railroad. Rail service in Omaha and Council Bluffs is provided by five Class I freight railroads: UPRR, which maintains a dispatch center in Omaha; Burlington Northern–Santa Fe (which, combined with the UPRR, operates and maintains 150 miles of rail in the MAPA TSA[21]); Iowa Interstate; Canadian Northern; and Chicago,

21 The MAPA TSA covers Douglas and Sarpy Counties in Nebraska and the western third of Pottawattamie County in Iowa.

Central, and Pacific. All offer piggyback service and have trailer on flat car/container on flat car ramps in the Omaha/Council Bluffs area. Tracks operated and maintained by Burlington Northern–Santa Fe, Iowa Interstate, UPRR, and Illinois Central can be found adjacent to or in the Study Area.

Amtrak's California Zephyr from the Omaha Train Station serves EB and WB passenger rail service routes. The California Zephyr offers direct service to Chicago, Denver, Salt Lake City, and Reno.

Air Service

Two airports serve the Council Bluffs/Omaha metropolitan area, the Council Bluffs Municipal Airport and Eppley Airfield in Omaha. In addition, the Millard and North Omaha airports serve private and corporate aircraft in the Omaha area. The Council Bluffs Municipal Airport, located about 2 miles east of Council Bluffs, is a public-use, general aviation airport, serving corporate and charter aircraft.

Eppley Airfield is a regional facility served by 12 major carriers with about 200 daily flights. Nonstop service is offered to more than 20 cities, including Chicago, Dallas, Denver, New York, Los Angeles, and Washington DC. In addition, two commuter airlines provide several daily flights to and from Midwestern communities. During 2001, Eppley Airfield served more than 3.7 million passengers. Major carriers serving the Omaha/Council Bluffs area include America West, American, ComAir, Continental, Delta, Frontier, Midwest Express, Northwest, Skywest, Southwest, United, and U.S. Air Express. Eppley Airfield handles more than 153 million pounds of air cargo, annually.

Neither airport is located within the Study Area.

Bus and Related Services

Public transit service in the Study Area is provided by MAT, which is a political subdivision operating under the direction of a Board of Directors appointed by the Mayor of Omaha with concurrence of the Omaha City Council and the Douglas County Commissioners. MAT provides commuter and fixed-route bus service to the cities of Omaha and Council Bluffs. The fixed-route service is supported by complementary ADA-compliant paratransit van service operating in an area within 0.75 miles of existing bus routes. MAT has a fleet of 140 buses and uses a conventional local route bus system to serve the Study Area. The primary types of bus routes used by MAT are local and express routes. The MAT operates and maintains 39 routes within the Study Area. These routes consist of 18 radial, 10 express, 7 feeder, 1 cross-town, and 3 circulator routes**.** Transit information centers and 122 passenger waiting–shelters are located throughout the metropolitan area.

The City of Council Bluffs operates a special transit service that provides curb-to-curb service for individuals unable to use MAT's fixed route service because of a physical disability. The service is available to all eligible residents within the city limits of Council Bluffs. About 2 percent of the population within the city limits is registered for special transit service, and about 1,600 passengers ride the buses each month. The service is certified as compliant with ADA regulations and in conformance with the Federal Transportation Act regulations. Special transit service provides eligible individuals transportation within Council Bluffs city limits and certain designated points within Omaha.

Public transit accounts for less than 1 percent of all work trips in Council Bluffs and less than 2 percent in Omaha (Census 2000).

Omaha also offers a complete variety of charter bus services. There are 14 charter bus lines in the metropolitan area. Greyhound operates modern terminals in Omaha and provides nationwide package express and passenger service.

According to the Greater Omaha Chamber of Commerce website, 8 taxi companies, 11 limousine services, and 23 car rental agencies also serve the Omaha/Council Bluffs area.

Water Transportation

Missouri River traffic is an important component of the Council Bluffs/Omaha economy. Omaha is served by two barge lines on the Missouri River. The Missouri River is classified as a "navigable river," therefore any bridge construction would require a Section 9 permit from the U.S. Coast Guard (USCG). Correspondence with the USCG will identify clearance requirements. Minimum horizontal and vertical navigational clearances are required to ensure navigation is maintained. Six mainstream dams on the upper reaches of the Missouri River ensure adequate water for navigational purposes. River barge transportation is available March through November. Navigational impacts are addressed in Subsection 4.1.11. The Tier 2 document for the I-80 Missouri River Bridge will address measures to minimize and avoid navigational impacts.

The inland waterway system, located in the Riverfront Industrial Park, near Eppley Airfield and the downtown area is a unique transportation mode available to Omaha firms. This waterway system is becoming increasingly attractive as a low-cost means of reaching both national and international markets. Commodities capable of movement in large volume, such as grain products, fertilizers, molasses, salt, cement, prepared animal foods, chemicals, iron and steel, and newsprint, are commonly shipped by water.

Private companies in Council Bluffs operate three barge terminal facilities on the Missouri River. None is directly within the Study Area, but the interstate system is used for shipments and transfers. The Warren Performance Packaging terminal on River Road is accessible from the Nebraska Avenue/I-80 interchange and is also served by the UPRR. Both the Farmland Industries' Fertilizer Warehouse and the AGRI Grain Marketing terminals are located on 37th Street and accessible from the Nebraska Avenue/I-29 Interchange. Both are served by the UPRR. The AGRI facility is also served by the Kansas City Southern, Burlington Northern-Santa Fe, and Illinois Central railroads. The City of Omaha maintains and operates a commercial city dock facility north of the downtown area. Recreational boating interests are served by a series of public and private marinas in Omaha and Bellevue.

Most river terminals are accessible by both rail and highway facilities.

3.1.8 Farmland

Agricultural land, defined as land suitable for cultivation and other uses, has historically been an important resource in Iowa. Recognizing this, both state and federal legislation have been enacted to preserve and protect agricultural land. At the federal level, the most important legislation regarding the preservation of agricultural land is the Farmland

Protection Policy Act (FPPA). The purpose of the act is to ensure that federal programs do not lead "to the unnecessary and irreversible conversion of farmland to nonagricultural uses."

At the state level, there are two important pieces of legislation addressing farmland—Iowa Code 6B (eminent domain on farmland) and 306.9 (diagonal severances). When agricultural land meets the definition laid out in Iowa Code 6B, it requires a public involvement process.

According to Iowa Code 306.9, the relocation of primary highways through cultivated land shall be avoided to the maximum extent possible. Diagonal routes should be avoided if feasible and prudent alternatives exist, and existing ROW should be used to its full extent. If additional ROW is needed, it should be contiguous with the existing ROW.

Although the Study Area is largely urban and suburban, farming is an important economic resource in Pottawattamie County, where corn, soybeans, oats, and wheat are produced. Over the last 50 years, Pottawattamie County has been one of the most agriculturally productive counties in Iowa and was ranked the 22nd top producer of corn and the 13th for soybeans in the U.S. In 1997, Pottawattamie County ranked 97th in the top 100 counties in the U.S. for total cropland. Table 3-10 summarizes agricultural production in Pottawattamie and Douglas Counties.

Both counties experienced an increase in the average farm size, with Douglas County's gain being 23 percent. This is consistent with national trends in agriculture, as farming has shifted from small, family-owned operations to big-business enterprises that are more efficient and mechanized. As a result, Douglas County experienced a significant drop (46.1 percent) in the number of persons employed in farming occupations between 1980 and 2000 (Table 3-5). For the same period, Pottawattamie County's farm employment dropped 60.3 percent (Table 3-5).

The only agricultural land in the CBIS Study Area is near U.S. 6 adjacent to I-80, and north and south of the West System Interchange. Pastureland is located about 1 mile northeast of the I-80/Madison Avenue interchange in Iowa. About 18,000 linear feet of farmland borders the Study Area; most of the farmland is in the northeastern portion of the Study Area, near the interchange with U.S. 6. Farmland areas in the Study Area are shown in Figure 3-2.

TABLE 3-10
Farm Characteristics and Crop Production (1997)

	Pottawattamie County, Iowa (bushels)		Douglas County, Nebraska (bushels)	
Crop	**1992**	**1997**	**1992**	**1997**
Corn for grain or seed	36,053,220	27,608,524	6,095,853	5,877,428
Soybeans	7,317,541	8,771,176	1,042,065	1,386,122
Oats	280,524	98,944	17,567	13,079
Wheat	9,927	18,827	22,065	30,996

Source: USDA 1997 Census of Agriculture, *Highlights of Agriculture: 1997 and 1992*.

3.1.8.1 Prime Farmland

The U.S. Department of Agriculture (USDA) defines prime farmland as the land best suited for food, feed, forage, fiber, and oilseed crops, producing the highest yields with the least expenditure of energy or economic resources. Prime farmland is common throughout Iowa and Nebraska, but can be found in only a small part of the Study Area. While much of the area was once farmed, most of it has since been converted to urban/suburban uses. The only remaining farmland is located in the Study Area's northeastern part. This land is classified as "prime farmland," or "prime farmland where protected from flooding."

Since the project is located within the "official planning area" of Council Bluffs/Omaha, the project is exempt from the provisions of the FPPA, and coordination with the National Resource Conservation Service concerning farmland (i.e., Form AD 1006) is not required.

3.2 Environmental Resources

3.2.1 Geology, Soils, and Mineral Resources

Topography and Surficial Geology

The Study Area includes two of Iowa's seven major topographic regions—the Missouri Alluvial Plain and the Loess Hills, a distinctive topographic region with an extensive prairie ecosystem (see Subsection 3.2.5). The Loess Hills consist of thick deposits of windblown soil shaped by wind and water into distinctive small terraces. The area consists primarily of upland slopes and floodplains with strips of upland plains and terraces. A major part of the Study Area lies within the Missouri River valley. Near the Study Area, the Missouri River valley is about 5 miles wide from bluff to bluff, and it extends mostly to the east of the main river channel (Burchett, 1970). The marshy stretches and lakes in the floodplain are evidence of recent changes in the course of the main channel.

The main topographic feature of the uplands in Pottawattamie County consists of an old drift plain adjacent to the Missouri River, into which the floodplains have been cut and partially filled as the result of channelization of the river. The surface of the drift plain has a general gentle slope to the southwest. At some points in the relatively flat areas near the bluffs of the Missouri River, the surface rises in low round swells, 10 to 20 feet higher than the surrounding flat areas (Udden, 1900).

The limestone bedrock in the Study Area comprises the Kansas City Group of the Pennsylvanian System, and the elevation of the top varies from less than 900 to about 1,000 feet. The soils above the bedrock vary in thickness and composition. Soil type, thickness, and composition at several locations within the Study Area are described below.

Based on a geologic cross-section near the I-480 Bridge over the Missouri River, the surficial soils in the Missouri River floodplain consist mostly of sand, silt, and clay of the Recent and Pleistocene System, underlain by limestone bedrock of the Pennsylvanian System (Burchett, 1970). At that location, the elevation of the Missouri River bottom is about 940 feet above mean sea level (msl) and the average elevation of the surrounding ground is about 980 feet. The ground surface rises to about 1,020 feet near the west side of the river. The thickness of the silt/clay layer on the west side of the river ranges about 10 to 60 feet. On the east side of the river, the thickness of the clay layer, where encountered, ranges from 5 to

20 feet. A sand layer ranging in thickness from 20 to 80 feet was encountered at all the boring locations on the river's eastern side. A layer of gravel was encountered below the sand/silt/clay layer at some boring locations. The thickness of the surficial soils ranges from about 55 feet on the river's western side to about 85 feet near its eastern side. The elevation of the top of the bedrock ranges from about 890 feet on the eastern side of the river to about 960 feet on the western side.

Based on records of well installation at five locations in the Council Bluffs area, the surficial soils above the limestone bedrock consist of silt and clay between 60 and 90 feet deep (Udden, 1900). At one location, the surficial soils consisted of a 55-foot-thick layer of silt (loess) underlain by a 5-foot-thick layer of boulder clay (consisting of clay containing boulders, gravel, pebbles, and sand). In the upland areas of Pottawattamie County, the boulder clay can be thicker than 100 feet.

From the above descriptions of subsurface profiles encountered at different locations, it is apparent that the thickness and composition of the surficial soils are expected to vary significantly over the extent of the Study Area.

Bedrock and Structural Geology

The Study Area is located in a region termed as Stable Interior in the geologic literature. In this region, the rocks are generally flat-lying sedimentary rocks that show little deformation. The sedimentary rock units in the Study Area were formed in the Paleozoic era (i.e., between about 300 and 500 million years ago) and comprised the Pennsylvanian, Mississippian, Devonian, Silurian, Ordovician, and Cambrian Systems, in descending order (Anderson, 1983). The sedimentary rock systems lie on a Precambrian (older than 600 million years) basement, consisting of crystalline igneous and metamorphic rocks.

The Pennsylvanian System, the uppermost rock system in the Study Area, was formed about 310 million years ago. The surface on which the Pennsylvanian rocks were deposited was a rolling plain that had been modified by stream erosion and karst activity in the late Mississippian and early Pennsylvanian times. Due to subsidence of the North American craton, seas slowly transgressed into the region by the middle Pennsylvanian time, about 275 million years ago. Subsequently, the seas transgressed and regressed several times, resulting in alternate layers of marine and nonmarine deposits in the Pennsylvanian rock. The Kansas City Group of the Pennsylvanian System, which underlies the surficial soils of the Study Area, contains deposits of limestones and shales that reflect cyclic sedimentation predominantly under marine environment.

As noted, the elevation of the top of the bedrock varies from less than 900 to about 1,000 feet in the Study Area. Based on a geologic cross-section at the I-480 Bridge across the Missouri River, the bedrock in the upper 80 feet of the Kansas City Group comprises the following alternating layers of limestone and shale formations in descending order: Wyandotte Formation limestone, Lane Formation shale, Iola Formation limestone, Chanute Formation shale, Drum Formation limestone, Quivira Formation shale, Sarpy Formation limestone, and Fontana Formation shale. The bottom elevation of the Kansas City Group varies from 750 to 800 feet within the Study Area (Burchett, 1970).

According to Anderson (1983), faults have been mapped in southern Iowa, none of which is known to be active. Based on a configuration map of the Precambrian rock surface for Iowa

and adjacent areas, the Humboldt Fault System crosses from Nebraska into Iowa near Pottawattamie County.

Mineral Resources

The chief mineral resources of Iowa are coal, limestone, gypsum, sand and gravel, and clay and shale. Gypsum, clay, and shale deposits have not been identified in the Study Area.

The coal mining industry in Iowa enjoyed a long and productive history, and the most productive years were between 1895 and 1925. Coal production in Iowa began to decline in the 1930s as the railroad industry switched to other fuel. The last coal mine in Iowa ceased production in 1994 (Garvin, 1998). The Coal Resources Map of Iowa prepared by the U.S. Geological Survey (USGS) and Iowa Geological Survey categorized Pottawattamie County as an area underlain by potential coal-bearing rocks of the Pennsylvanian System (Landis and Maberry, 1964). The actual presence of coal-bearing rocks in the Study Area cannot be determined without excavation.

The limestone industry is one of the largest mineral industries in Iowa. Limestone is used for road base, riprap, aggregate in concrete, in the production of chemical lime, and in the manufacture of Portland cement. In 1989, the annual limestone production in Iowa was about 40 millions tons (Garvin, 1998). There are limestone quarries within Pottawattamie County.

Sand and gravel are used extensively in surfacing gravel roads, as subgrade material in highway construction, and in concrete aggregate. In Iowa, sand and gravel deposits are most abundant in active stream floodplains, terraces, buried stream valleys, and glaciofluvial areas. Iowa produced more than 17 million tons of sand and gravel in 1994 (Garvin, 1998). In the Study Area, sand and gravel deposits are present in the Missouri River floodplain.

3.2.2 Water Quality and Water Resources

Water resources are considered with respect to surface and groundwater sources, quantity and quality, and drainage conditions. Iowa Department of Natural Resources (IDNR) and Nebraska Department of Environmental Quality (NDEQ) have responsibilities for water quality and water quantity programs in their respective states. The US Army Corps of Engineers (USCOE) and the USCG are the two main agencies that address construction in water resources. The USCG is concerned with construction in navigable waters, including the Missouri River.

Groundwater Resources

The Iowa Groundwater Protection Act provides guidelines and regulations pertaining to protective setbacks from groundwater wells. Consistent with the guidelines and regulations, communities in the Study Area have established either 200- or 400-foot setback zones for potential contamination sources that could affect groundwater wells. Geologic conditions are an important factor that can either prohibit or permit the transfer of contaminants. Wells founded in rock formations usually are more restrictive to the transfer of surface contaminants than wells founded in sand and gravel formations.

The City of Council Bluffs obtains its water supply primarily from the Missouri River, but a small portion comes from an alluvial aquifer within the Study Area. For security purposes,

the aquifer can be described only as about 0.5 miles from the existing interstate system.[22] This use constitutes approximately 1.2 percent of total annual use. The alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials allow contaminants to move through the aquifer quickly. Groundwater beneath the City of Council Bluffs is most susceptible to the activities of dry cleaners, gas stations, industrial sites, and municipal wastewater discharges.

Private groundwater wells in the area of potential impact are typically shallow (less than 100 feet deep) and associated with agricultural and residential uses at properties outside the city limits. Thirteen private wells were identified in the Study Area of which only six were in the area of potential impact. A comparison of the plotted well locations to property parcel data indicates that some well locations are not accurately plotted. Apparently three of the six wells plotted in the area of potential impact are already within existing ROW. The approximate locations of these wells have not been field verified. Field verification of precise locations would be performed during the Tier 2 process.

Surface Water Resources

The Missouri River is the dominant aquatic environment within the Study Area and the project would involve one crossing of the river, and improvements to the approaches of a second river crossing. Lake Manawa is located southwest of the Study Area. Several ponds are in the southeastern portion of the Study Area. Other flowing water bodies within the Study Area include Mosquito Creek and Indian Creek, as shown in Figure 3-1. Both Mosquito and Indian Creeks are tributaries of the Missouri River, with their confluences each about 3 miles from their southernmost location in the Study Area.

Indian Creek has been highly modified as a flood-control conveyance system, with levees constructed in the area where I-80 crosses the creek. Indian Creek is a culvert and canal system used for stormwater drainage, and not a perennial water body.

Mosquito Creek is a small warm-water stream that meanders through the Study Area's eastern part. This shallow creek has an average depth of less than 1 foot. Although there is no surface water drainage between Mosquito Creek and Lake Manawa, the two are connected by a 48-inch pipeline. The pipeline is used in the fall to divert water into the lake and could be used in reverse to prevent flooding. To date it has never been necessary to use Mosquito Creek in this fashion to discharge overflow water from Lake Manawa. The eastern portion of Mosquito Creek which crosses through the Study Area is classified as a limited warm-water resource. It is capable of supporting only limited aquatic life populations, composed of minnows and other nongame fish species. The 1996 IDNR Stream Assessment determined that although the quality of aquatic habitat in this area was relatively high, very few fish were observed compared to the quality of the existing habitat. A water quality problem of unknown source is suspected (IDNR, 1996). In less urbanized areas in the northeastern portion of the Study Area, Mosquito Creek is classified as a significant warm-water resource. This area is capable of supporting warm-water game fish and associated aquatic communities, including sensitive species. According to the IDNR 1996 Stream Assessment for this reach, limited stream bank vegetation coupled with the

22 Phone conversation with John Elliott, January 2004.

extensive channelization has increased the rate of stream bank erosion and sedimentation. Some riffle areas provide limited habitat diversity for game fish.

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The Missouri River is channelized within the Study Area with levees on both sides of the river. Both Iowa and Nebraska classify the Missouri River as an impaired water body under Section 303(d) of the CWA (USCOE, 2001). Iowa-designated uses for the river within the Study Area include high quality state resource water, warm-water fishery, drinking water, and recreation. Nebraska-designated uses include aesthetics, warm-water fishery, drinking water, recreational, agricultural, and industrial. The "high quality" designation by the states has to do with the quality of public use rather than water quality standards. Section 305(b) of the CWA requires states to report on how well the waters of the state support these beneficial public uses.

Missouri River water has saturated levels of dissolved oxygen and low nutrient and sediment levels. Degradation has been found downstream with increased water temperature, nutrient levels, and biochemical oxygen demand (including the Study Area of the CBIS Improvements Project); this degradation peaks near Kansas City (USCOE, 2001). Organic nitrogen, nitrate, total phosphorus, and orthophosphorus are the primary nutrient concentrations that increase downstream. Tributaries provide an influx of warm, turbid waters with elevated levels of nutrients and other oxygen-demanding minerals. States submit water quality reports biennially to the U.S. Environmental Protection Agency (USEPA) in compliance with Section 305(b) of the CWA. The reports indicate that siltation and pathogens are of concern in the segment of the Missouri River that is included in the Study Area. Tier 2 studies will be conducted as necessary to determine the siltation and pathogen conditions in the Missouri River. The Missouri River is a potable water source for the Omaha/Council Bluffs metropolitan area. There is an intake in Nebraska south of the I-680 Bridge in Florence and another in Iowa north of the I-29/25th Street Interchange. Wastewater treatment plants discharge treated water to the Missouri River from Nebraska south of the U.S. 275 Bridge (also known as South Omaha Veterans Memorial Bridge), north of the Bellevue Bridge, and north of Papillion Creek. The Council Bluffs wastewater treatment plant discharges treated water to the Missouri River near the Pottawattamie and Mills county line. Although the Missouri River in the CBIS Study Area has been degraded by upstream agricultural runoff and urban stormwater as well as treated sanitary sewer effluent; it is still suitable for recovery and treatment for drinking water.

3.2.3 Wetlands

Wetlands are areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated-soil conditions. In addition to providing ecological benefits, such as supporting commercial fisheries and performing water filtering, they provide habitat for many plant and animal species, including economically valuable waterfowl and one-third of the nation's endangered species. Wetlands are regulated by the USCOE under Section 404 of the CWA and are also protected under EO 11990.

Hydric soils are common in the Study Area and facilitate the growth of wetland vegetation in areas where water pools or slowly drains from the land. The occurrence of wetland vegetation in areas such as roadside ditches and culverts is highly likely and was noted, but these small areas were not included in total surveyed wetland acres.

Wetland resources within the Study Area were field/windshield surveyed in fall 2002 and wetlands of various sizes and types are present in the Study Area. Two large wetland areas are located near the I-80/I-29 East System Interchange, and the I-29/U.S. 275 interchange.

Wetland vegetation observed varied by area. Dominant species include prairie cordgrass (*Spartina pectinata*), reed canary grass (*Phalaris arundinacea*), barnyard grass (*Echinochloa crusgalli*), narrow-leaf cattail (*Typha latifolia*), soft-stem bulrush (*Schoenoplectus tabernaemontani*), blunt spikerush (*Eleocharis obtusa*), and Pennsylvania smartweed (*Polygonum pensylvanicum*). Species diversity in the wetlands is low to moderate.

National Wetland Inventory/Field Verified Wetlands

The National Wetland Inventory (NWI) provides information for summarizing potential wetlands in the Study Area and uses wetland assessment methodologies largely based on remote sensing methods. Such methods are useful for rough assessment over large areas; however, field-based assessments are always more accurate on an individual wetland-site level. According to NWI mapping, potential wetland resources are located within the Study Area. The largest areas of NWI wetlands are located along the Study Area's western edge in Iowa and in its southeastern corner (Figure 3-1). Wetland delineations of those wetlands potentially affected by project construction will be completed in Tier 2.

Windshield surveys verified the presence of potential wetlands identified by the NWI, and identified additional wetlands within the Study Area. The surveys confirmed NWI project-area wetland boundaries previously identified on maps. The inventory included a preliminary assessment of wetland characteristics, including general vegetation and hydrologic characteristics.

The field surveys identified 45 potential NWI wetlands and other wetlands not identified in the NWI for a total of 126 acres of wetlands within the Study Area. See Section 4.2.3 for a discussion of impacts on wetlands within the area of potential impact. Of the 126 acres of wetlands, 112 acres are identified as NWI wetlands that have been classified by wetland type. Based on the NWI analysis, the Study Area contains interspersed wetland areas that average approximately 3 acres. Many of the NWI wetlands (nearly 41 acres) are classified as palustrine emergent seasonally flooded (PEMC), followed by approximately 35 acres of palustrine forested broad-leaved deciduous temporarily flooded (PFO1A), 5 acres of palustrine scrub-shrub, broad-leaved deciduous seasonally flooded excavated (PSS1Cx), 5 acres of palustrine emergent semipermanently flooded (PEMF), 14 acres of palustrine emergent temporarily flooded (PEMA), 7 acres of palustrine unconsolidated bottom semipermanently flooded (PUBF), and 5 acres of palustrine unconsolidated bottom intermittently exposed (PUBG) (Cowardin, 1979). Table 3-11 lists wetlands identified in the Study Area.

Both Iowa and Nebraska documented notable wetland loss between 1900 to 1950 because of increased agriculture and channelization of major waterways. In 1780, an estimated 11.1 percent (4,000,000 acres) of Iowa and 5.9 percent (2,910,500 acres) of Nebraska's total

surface area were considered to be wetland. By 1980, Iowa's total wetland acreage had decreased by 89 percent and Nebraska's by 35 percent, making the total wetland acreage 421,900 acres in Iowa and 1,905,500 in Nebraska. Iowa has the third largest decrease in wetland acreage in the U.S., after California and Ohio (Dahl, 1990).

TABLE 3-11
Wetlands within the Study Area

Classification	Acres within Study Area
PEMC	41
PFO1A	35
PSS1Cx	5
PEMF	5
PEMA	14
PUBF	7
PUBG	5
TOTAL	**112**

NWI Mapping, Field Surveys, 2003.

Construction of the interstate system and urban development resulted in filling of wetlands within the Study Area. Large acreages of remnant wetlands lie in areas near the East System Interchange. Creation of the WHTC involved the preservation and construction of a wetland area south of the area of potential impact. Wetland filling in Iowa and Nebraska during the last decade has involved replacement of at least an equivalent acreage of wetland. The mitigations typically involved acquisition of land subject to flooding. Replacement can occur by creation of wetland mitigation sites or use of a wetland banking system within the same watershed, if available.

The wetlands within the area of potential impact are classified primarily as palustrine emergent. Although the ecosystem associated with these wetland areas is fragile, most associated vegetation types are resilient to change or even thrive on disturbance. The stresses on wetlands include impacts to water quality, alterations in the water levels, and other surface disturbances. In addition to losses of wetlands caused by stress, increases in exotic and invasive hydrophytic vegetation can diminish the overall quality of the wetland area.

3.2.4 Floodplains

Floodplains are associated with certain surface water conveyance channels and influenced by the surrounding topography and drainage basins. This analysis focuses on 100-year floodplains (the area expected to flood at least once every 100 years) mapped by the Federal Emergency Management Agency (FEMA). Planning for construction in floodplains must comply with EO 11988. Various permits and clearances would be required for construction within a floodplain. "No Rise" certification is required by Section 60.3(d)(3) of the National Flood Insurance Program (NFIP). A state or local floodplain permit would also be required for various types of floodway/floodplain development. Based on the location of the

floodplain, these permits would be obtained from the IDNR and Pottawattamie County (in Iowa), or Douglas County (in Nebraska).

In addition to the 100-year floodplain of the Missouri River (crossed twice), a narrow 100-year floodplain is associated with the crossing of Indian Creek, and a wide, lengthy 100-year floodplain is attributed to Mosquito Creek (Figure 3-1).

Starting from the northern project boundary, the Study Area crosses the Missouri River floodplain north and west of the levee, about 2,000 feet west of the I-29 and 25th Street Interchange for about 3,000 feet. The Study Area includes the I-480 Bridge in Iowa which is also within the Missouri River floodplain. The West System Interchange area includes the I-80 Bridge spanning the Missouri River and floodplain in both Nebraska and Iowa. The I-29/I-80 segment between the West and East System Interchanges includes a crossing of Indian Creek.

The area east of South Expressway/IA 192, including the I-29/I-80 East System Interchange, is an extensive floodplain and system of levees intersected by the Study Area. A system of box culverts traverses the East System Interchange. Mosquito Creek and its 100-year floodplain extend throughout the Study Area of the I-80 segment north of the East System Interchange for about 3 miles. Within the Study Area, there are three bridge systems that cross Mosquito Creek or its tributaries (at I-29, at U.S. 275, and near Madison Avenue) and associated floodplains. There are box culvert systems conveying flow from Mosquito Creek tributaries near Mall Drive north of Madison Avenue, north of Franklin Avenue, north of McPherson Avenue, and north of U.S. 6.

3.2.5 Wildlife and Biological Resources

Natural communities and the wildlife they support are closely linked to the area's topography. Wetlands associated with aquatic environments and threatened or endangered species associated with aquatic environments are separately addressed.

Vegetation and Cover Types

Most of the Study Area contains typical urban wildlife habitat, such as trees and grassy areas. The WHTC contains cropland and restored prairie habitat, part of which is in the Study Area. Pastureland is located about 1 mile northeast of I-80 and Madison Avenue in Iowa, with a small area of cropland to the west of the I-80/U.S. 6 Interchange. Other cover types such as riparian areas, upland areas, and the Loess Hills are discussed within their own subheadings.

Upland Habitat

Upland habitat can vary widely because of regional and local differences and definable soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance. Historically, the Study Area was dominated by timber and riparian areas adjacent to the Missouri River, large plots of prairie, and marshes. Several factors associated with urban and agricultural development have lead to the gradual clearing of these natural areas. The settlement of the City of Council Bluffs, conversion of natural areas for agricultural use, and the widening of the original transportation corridor to accommodate the existing Interstate System have significantly affected the total acreage of these historically prevalent areas of upland habitat. Construction of roadway ditches, tiled

drainageways, and other features associated with development have caused drainage of marshes and elimination of prairie in the area.

Loess Hills

The Loess Hills of western Iowa are a distinctive topographic region containing extensive prairie ecosystems. They have been studied for possible designation as a unit of the National Park System (National Park Service, 2002). The thick deposits of windblown soil are rich in archeological and historical resources and also special natural areas. Wind and water shaped the distinctive small terraces that are a trademark of the Loess Hills (*The Des Moines Register*, 2003). The *Special Resource Study and Environmental Assessment* (National Park Service [NPS], 2001) concluded that this landform region contains resources of national significance. The study recommended an evaluation of 12 Special Landscape Areas for National Natural Landmark designation. One of the areas, Folsom Point, is near the Study Area for the CBIS Improvements Project.

Upland areas are essentially nonwetland and nonriparian (a transitional environment between wetlands and uplands) so the Loess Hills can be considered a subset of upland areas. Trees in the Loess Hills are mostly the slow growing and drought resistant burr oak, and cover most of the slopes too steep for cultivation. Cedar trees are gradually encroaching on drier more exposed areas. The prairie holds on to the steepest, most exposed slopes and hillcrests.

Folsom Point is a 5,936-acre Special Landscape Area near the Study Area (see Figure 3-1). Prairies comprise about 10 percent of this landscape, primarily along ridgetops and the highest, driest slopes. Woodlands cover about 40 percent of the Folsom Point area. The area is also rich in recorded archaeological sites. Two protected parcels within the Folsom Point Special Landscape are West Oak Forest and Folsom Point Prairies.

The extremely variable nature of the topography of this area has allowed a very diverse variety of vegetation to become established. On the high exposed slopes, plants like yucca, normally found hundreds of miles to the west, thrive. In the more shaded areas and ravines, there are mosses and leafy plants that require deep shade and a continuous supply of moisture. Steep slopes heated by the sun and wind also support unique plants and animals more commonly found further west in the Great Plains. These species include the Great Plains toad, cowboy's delight, six-lined racerunners, and prairie rattlesnake.

Vincent Bluff Prairie Preserve is also located near the Study Area in the Loess Hills (Figure 3-1). The 31-acre site is a rare example of a preserved prairie within an area of highly developed land. The bluff contains high-quality prairie remnants and provides wildlife habitat. Some prairie species unique to the area and found on the bluff include big and little bluestem, purple coneflower, and Illinois bundle flower.

Riparian Areas

There are 108 acres of riparian areas within the Study Area. Riparian areas are zones along water bodies that serve as interfaces between terrestrial and aquatic ecosystems. Riparian areas are classified as areas of streamside vegetation along perennial or intermittent streams, including the streambank and adjoining floodplain or bottomland, typically distinguishable from upland areas in terms of vegetation, soils, topography, or other landscape

characteristics (Kusler and Kentula, 1990). The banks of the Missouri River contain large deciduous trees, such as eastern cottonwood and silver maple, common to palustrine-forested wetlands in riparian areas within a large river system. Riparian soils are often similar to those found in wetland areas but frequently include sands and gravels, and have a high water table because of their proximity to an aquatic ecosystem or to subsurface water. Vegetated riparian systems are important for their abilities to filter nutrient and sediment. They also help stabilize stream banks and reduce water temperatures, which increases a stream's oxygen carrying capacity and reduces nutrient availability.

Wildlife

The Study Area is dominated by typical urban wildlife habitat, such as planted trees and lawn areas. The shift from a rural to an urban society has greatly impacted the habitat that wildlife depends on for food, water, cover, and living space. There are urban-adapted species throughout the Study Area. Urban-adapted wildlife is any wild creature that lives in an urban environment or an urban-rural interface, including birds, reptiles, amphibians, mammals, fish, insects, and worms. Most "urban" species such as squirrels, rabbits, raccoons, and songbirds (such as robins) live in both the riparian area and the uplands throughout the Study Area. Riparian and floodplain habitat exist in areas adjacent to the Missouri River. Fish and wildlife common to the Study Area are primarily within the Missouri River and its associated wetlands.

There is an abundance of wildlife in the Loess Hills area, especially in the areas that are too rugged for cultivation or human habitation and have been maintained as native prairie. The deer population is quite large, and many areas have been restocked with wild turkeys. The pheasant population is also quite large and thrives in the prairie grasses and other undisturbed areas of the Loess Hills. Raptors such as red tailed hawks and turkey vultures are seen soaring above the ridgelines. The variable landscape supports a very good habitat for songbirds.

The existing I-80 and I-480 bridges could provide habitat for cliff swallow nesting. Cliff swallows are protected under the federal Migratory Bird Treaty Act.

Several species of fish can be found in the Missouri River, including typical large-river species such as channel catfish (*Ictalurus punctatus)*, paddlefish (*Polyodon spathula*), and common carp (*Cyprinus carpio)*. There is limited habitat on both sides of the river because of land development.

Missouri River habitat within or near the Study Area is downstream of all six main stream dams. The Missouri River six main stream dams are:

- Gavins Point Dam, located near Yankton, South Dakota
- Fort Randall Dam, located in south-central South Dakota near Lake Andes above old Fort Randall
- Big Bend Dam, located 35 miles northwest of Chamberlain, South Dakota
- Oahe Dam, located 7 miles north of Pierre, South Dakota
- Garrison Dam, near Bismark, North Dakota
- Fort Peck Dam, located 20 miles southeast of Glasgow, Montana

The dams have caused a significant reduction in sediment and organic matter transport and deposit, flow modifications, and narrowing of the river through channel degradation. Dams have also fragmented vital migration routes for some of the larger river fish species. Several fish species such as the pallid sturgeon, lake sturgeon, paddlefish, walleye, blue sucker (*Cycleptus elongatus*), and trout migrate to forage or, most likely, spawning habitat upstream and in tributaries to the Missouri River. During periods of high water, fish would migrate out of the channel and onto the floodplain to use newly available habitat. Many fish species found in the Missouri are "floodplain spawners" that require temporary access to inundated portions of the floodplain in order to successfully reproduce. Dams often drown wildlife habitat and block migratory fish from their spawning grounds.

The Council Bend restoration site is proposed for an area about 3,500 feet upstream of the I-480 Bridge and would extend about 7,000 feet upstream along the Missouri River to the levee. The Council Bend project is intended to help restore some of the loss of fish and wildlife habitat caused by channelization and stablization of the river channel. There is a slight overlap between the area proposed for restoration and the Study Area.

Indian Creek has been redirected into a culvert and canal system used for stormwater drainage. It is not a perennial drainageway. The change in the physical structure of the creek and subsequent lack of perennial flow are not conducive to sustaining fish populations. Indian Creek may have fish present during stormwater drainage events, but their presence would be temporary and limited to the duration of the flow event.

Mosquito Creek is a small warm-water stream that meanders through the Study Area's eastern part and averages less than 1 foot deep. This shallow urban creek provides poor to fair aquatic habitat. Fish-species diversity is considered fairly low in Mosquito Creek. Approximately 97 percent of all fish at sample locations were common minnows such as emerald shiner (*Notropis atherinoides*), sand shiner (*Notropis stramineus*), and red shiner (*Cyprinella lutrensis*). Most of Mosquito Creek has horizontal to moderately sloped banks on both sides and little to no instream cover to provide suitable aquatic habitat. Buffer vegetation consists primarily of herbaceous to mixed grass/woody species depending on sample location (IDNR, 2000). In less urbanized areas in the northeastern part of the Study Area, the riparian area along Mosquito Creek has been cut back due to agricultural practices.

Wetland areas, some of which are isolated and associated with road ditches and stormwater drainage, provide habitat areas that attract red-winged blackbirds and other species that commonly occur in marsh areas in Iowa.

3.2.6 Threatened and Endangered Species

A species listed as threatened or endangered is protected under the Endangered Species Act. Listed species are so designated because danger of extinction exists as a consequence of development without adequate concern and conservation. The project may affect a listed species if it modifies habitat, precludes or impedes development of habitat, would likely disturb feeding or breeding activities, or would harm or kill an individual of that species. For this document, coordination with the U.S. Fish and Wildlife Service (USFWS), Nebraska Game and Parks Commission (NGPC), and IDNR and also limited windshield surveys in conjunction with other field reviews were used for determining the presence or absence of

threatened or endangered species or habitat. Specific habitat requirements for the identified species are discussed in Section 4.2.6. Field surveys, as necessary, will be completed during Tier 2 to document the presence of potential species in the Study Area.

Threatened or endangered species that may occur within the Study Area may have been present because of the fluctuating nature of the Missouri River, Indian Creek, and Mosquito Creek floodplains. The habitats created by a dynamic surface water system included plentiful sandbars and wetlands. Constraint of the floodplains through channelization, construction of dams, levees, and bank stabilization, and installation of drainage tile for agricultural purposes modified the dynamic behavior of the riverine and wetland systems and reduced potential habitat for threatened or endangered species. Stresses on threatened or endangered species include depleted habitat or fragmentation of suitable habitat for agricultural use or urban development, agricultural chemicals, and other urban runoff, all ultimately leading to decreased water quality, destruction of riparian areas, channelization, change in the hydrograph of the Missouri River, and draining of wetland areas. Due to specific habitat requirements, most threatened or endangered species listed for the Study Area would have a reduced capacity to withstand environmental stresses.

Federal Species. In a letter dated April 15, 2003, the USFWS provided a federal list of threatened or endangered species that may be located within or near the proposed Study Area. The species listed are: American bald eagle (threatened and proposed for delisting), Indiana bat (endangered), interior least tern (endangered), piping plover (threatened), pallid sturgeon (endangered), prairie bush clover (threatened), western prairie fringed orchid (threatened), and eastern massasauga rattlesnake (candidate)(Table 3-12).

State Species. According to the letter received from NGPC dated March 15, 2002, records did not show that any state or federal threatened, endangered, candidate or proposed species were found within the Study Area. Although habitat for T&E species does exist in the area, no habitat in the Study Area is designated as critical habitat for T&E species. Habitat meeting requirements for the pallid sturgeon, lake sturgeon, sturgeon chub, bald eagle, American ginseng, and the western prairie fringed orchid does exist within the Study Area so the possibility remains that these species could be encountered. Nebraska classifies the following as state-listed species: American bald eagle (threatened), least tern (endangered), piping plover (threatened), pallid sturgeon (endangered), lake sturgeon (threatened), sturgeon chub (endangered), eastern massasauga rattlesnake (threatened), western prairie fringed orchid (threatened), and American ginseng (threatened).

The IDNR, in a letter dated March 19, 2002, stated that no rare species or significant natural communities existed within the Study Area. This conclusion, however, was drawn without the aid of field studies. If listed or rare species are found during the planning or construction phases, additional studies and/or mitigation would be required. Iowa classifies the following as state-listed species: bald eagle (threatened), Indiana Bat (endangered), least tern (endangered), piping plover (threatened), lake sturgeon (endangered), pallid sturgeon (endangered), eastern massasauga rattlesnake (threatened), prairie bush clover (threatened), and western prairie fringed orchid (threatened). Table 3-12 lists the federal and state threatened and endangered species that could be within the Study Area.

TABLE 3-12
Federal and State Threatened and Endangered Species

Common Name	Scientific Name	Federal Status[a]	State Status	Habitat
Birds				
Bald eagle	*Haliaeetus leucocephalus*	T, PD	E	Migration, winter resident, nesting
Least tern	*Sterna antillarum*	E		Migration, nesting
Piping plover	*Charadrius melodus*	T		Migration, nesting
Mammals				
Indiana Bat	*Myotis sodalis*	E	E[b]	Caves, mines; small stream corridors with well developed riparian woods; upland forests
Fish				
Pallid sturgeon	*Scaphirynchus albus*	E	E	Missouri River
Lake sturgeon	*Acipenser fulvescens*		T,E[c]	Missouri River
Sturgeon chub	*Macrhybopsis geliba*	CON	E[d]	Missouri River
Reptiles				
Eastern massasauga rattlesnake	*Sistrurus catenatus*	CAN	T,E[e]	Shrubby wetlands
Plants				
Western prairie fringed orchid	*Platanthera praeclara*	T	T	Wet prairies
Prairie bush clover	*Lespedeza leptostachya*	T	T[f]	Dry to mesic prairies with gravelly soil
American ginseng	*Panax quinquefolius*		T[g]	Good quality upland hardwood forests

Sources: U.S. Fish and Wildlife Service, Nebraska Game and Parks Commission, 2002.
[a] Threatened (T), endangered (E), proposed for delisting (PD), candidate (CAN), and species of concern (CON)
[b] Indiana bat is endangered in Iowa. It is not listed in Nebraska.
[c] Threatened in Nebraska, endangered in Iowa.
[d] Endangered in Nebraska, not listed in Iowa.
[e] Threatened in Nebraska, endangered in Iowa.
[f] Prairie bush clover is threatened in Iowa. The plant has no documented occurrence in Nebraska
[g] Threatened in Nebraska, not listed in Iowa.

3.2.7 Public Lands/4(f) Considerations

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 states that the 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."

The use of Land and Water Conservation Fund (LAWCON) monies for public-use lands qualifies a resource for protection under Section 6(f). Section 6(f) requires approval from the Secretary of the Department of the Interior (DOI) to convert the use from anything other than outdoor public recreation lands. Coordination with the DOI, respective state agencies, and the local agency with jurisdiction over the park or recreation area would be necessary. Replacement land must be identified, if possible, to obtain a conversion in kind for the affected land.

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), will be completed in Tier 2. This subsection summarizes the potential Section 4(f) and Section 6(f) resources identified in the study corridor.

Figures 3-1 and 3-2 show parks, recreation areas, wildlife and waterfowl refuges, and historic sites near the Study Area with the potential to be considered Section 4(f) resources. Based on preliminary assessments, sites determined to have Section 4(f) potential that are located within the area of potential impact are discussed in Section 4.2.7. Tables 3-13 and 3-14 contain descriptions of the potential Section 4(f) properties within or near the Study Area. The following subsections briefly describe the types of the potential Section 4(f) resources listed in the table.

TABLE 3-13
Potential Section 4(f) Resources

Name	Location	Type	Description
Parks and Recreation			
Western Historic Trails Center	Council Bluffs	Park/Rec Area	423-acre site, housing trails center building, and adjacent land. Built by National Park Service and operated by State Historical Society of Iowa.
Dodge Riverside Golf Course	Council Bluffs	Park/Rec. Area	150-acre public golf course featuring 18 holes of golf, a restaurant, clubhouse, and banquet space.
Westwood Park	Council Bluffs	Park/Rec. Area	8.0-acre area with playground, baseball and soccer fields.
City of Council Bluffs Recreation Complex	Council Bluffs	Park/Rec. Area	108-acre site that includes four softball fields, two fast pitch fields and four baseball fields (all lighted), four regulation soccer fields, two full concessions areas, a playground, bike trail, and 500 parking stalls. Future plans include another concession area, additional soccer fields, and a second playground.
The Omaha Henry Doorly Zoo	Omaha	Park/Rec. Area	Publicly owned zoo, which evolved from the small Riverview Park Zoo, established in 1894 and now sits on 115 acres. The main portion of the zoo with exhibits is located south of I-80, but a small portion of land owned by the zoo is north of I-80. The area north of the zoo is maintained grass and is occasionally used for watching fireworks from Rosenblatt Stadium.

TABLE 3-13
Potential Section 4(f) Resources

Name	Location	Type	Description
Spring Lake Park	Omaha	Park/Rec. Area	96-acre historic park owned and managed by the City of Omaha. This large park features a playground, tennis court, swimming pool, a 9-hole par-3 golf course, and walking trail.
Deer Hollow Park	Omaha	Park/Rec. Area	Historic neighborhood park owned by the City of Omaha identified as a remnant of the Omaha Historic Park and Boulevard System, featuring 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 to the south of I-80 for 7.6 acres total.
Westwood Golf Course	Council Bluffs	Park/Rec. Area	17-acre par 3 public course featuring 9 holes of golf and a clubhouse. Harrah's Casino owns the land but leases the land by a short-term lease to the City of Council Bluffs for operation of the golf course.
Playland Park	Council Bluffs	Park/Rec. Area	91-acre facility with a baseball and softball field, soccer fields, tennis court, picnic shelter, playground, and public restrooms. The eastern part of Playland Park was bought with Land and Water Conservation funds. The western part of (west of a walking path) has been bought for development of condominiums (The City Council deadline to demonstrate funding has not been met and ownership of the land reverts to the City if a building permit is not received by December 2004).
Iowa Riverfront Trail	Council Bluffs	Trail	A paved trail of 5.2 miles extending from 25th Street to the WHTC. This combination of paved levee and bike lanes provides a scenic view of the Missouri River, and offers access to Ameristar Casino Hotel, Harrah's Council Bluffs Casino & Hotel, and Dodge Riverside Golf Club.
Valley View Trail	Council Bluffs	Trail	This trail runs 2.8 miles from Valley View Park south through the Iowa School for the Deaf Nature Center and links to the Iowa West Foundation Trail Head Park at the Wabash Trace Nature Trail.
Back to the River Trail	Omaha (trail runs along the Missouri River on the Nebraska side of the river)	Trail	A multi-dimensional project to create an ecological, recreational, and historical corridor along a 64-mile stretch of Missouri River that includes Omaha/Council Bluffs. An alliance of public and private groups supports "Back to the River," a master plan to increase access, recreation, and natural habitat along the Missouri River.
Unnamed City Trail by Lewis Central High School	Council Bluffs	Trail	Trail extends approximately 3,000 feet northwest from the Iowa West Foundation Trailhead Park (south of Lewis Central Community School) to Iowa 92.

TABLE 3-13
Potential Section 4(f) Resources

Name	Location	Type	Description
Western Historic Trails Center Trail	Council Bluffs	Trail	Within the boundaries of the WHTC, a 0.5-mile hiking trail extends west of the main building. The trail traverses Missouri River bottomlands, is seeded with wildflowers and prairie grasses, and offers a chance to view flora and fauna, Sauganash Pond (named for a Pottawattamie Chief), wayside exhibits for Lewis and Clark's White Catfish Camp, and the Missouri River. Heading southeast from the Trails Center, cyclists and walkers can take a new, 6-mile paved trail that connects to Lake Manawa and continues to the Iowa West Foundation Trailhead park. Funded partially through an R.E.A.P. (Resource Enhancement And Protection) grant, this 6-mile paved trail winds through Council Bluffs Recreation Complex and features a 309-foot bridge over Indian Creek to the south entrance of Lake Manawa State Recreational Area.
Wildlife and Waterfowl Areas			
Iowa School for the Deaf Nature Area	Council Bluffs	Natural/ Protected Area	An 12-acre nature area with prairie grasses and other restored vegetation along the Valley View Trail through school property near the intersection of U.S. 275 and Iowa 92. The school is on a former encampment area of Mormons, and part of the trail is marked as the Mormon Trail.
Historic Sites: See Table 3-14			

Note: Some recreational properties (for example, Deer Lake Park and Spring Lake Park) are also potentially eligible for the NRHP (National Register of Historic Places) based on their historic significance.

Parks and Recreation

Parks and recreational properties within the Study Area that were considered for Section 4(f) potential include Henry Doorly Zoo, Playland Park, Dodge Riverside Golf Course, Westwood Park, Spring Lake Park, Deer Hollow Park, Westwood Golf Course, Council Bluffs Recreation Complex, and WHTC. Several other recreational resources are near the Study Area, but they are either outside the area of potential impact or are privately owned and not likely to qualify as potential Section 4(f) resources. School facilities located within the Study Area are considered Section 4(f) if they are publicly owned, open to the public, the major purpose of the land is recreation, and the land is considered significant in terms of availability and function.

Publicly owned recreation areas in the Study Area include pedestrian/bicycle trails, nature trails, ball fields, and golf courses. A 23-acre water park is tentatively planned to be constructed west of the MAC in Council Bluffs. Because it will be privately financed and owned and not public property, it would not qualify as a Section 4(f) resource and is not addressed further. The Lauritzen Gardens north of I-80 near the Missouri River has land within the Study Area, but it is privately owned and would not qualify as a Section 4(f) property. The Lake Shore Country Club golf course in Council Bluffs is privately owned and would not be a Section 4(f) property.

The WHTC is owned by the State Historical Society of Iowa. Congress allocated $8 million of funding to the NPS for the development of the site. The site was subsequently transferred to the State Historical Society of Iowa by deed. The City of Council Bluffs has a permanent drainage easement south of I-80 on the northern part of the WHTC property. In the northern section of the WHTC, 25 acres of prime farmland were originally designed to be maintained as a buffer to the WHTC from the entrance to I-29 and S. 24th Street. The cropped area provides a transition from the interstate and highway driving to the subtle knolls and curves leading to the WHTC, creating a dramatic sense of arrival. Visitors to the site notice that the drive from 24th Street to the WHTC winds through several ecosystems, including a marshy area at the entrance, the crop ground, and finally restored prairie. As the crops give way to the prairie, the view is much like that which the early settlers saw as they left their homesteads and moved west into the miles of unbroken prairie.

In addition, the WHTC (through the State Historical Society of Iowa) has leased 72 of the 423 total acres to the City of Council Bluffs for construction and maintenance of the Council Bluffs Recreational Complex. Per a conversation with staff at the WHTC, the official designation of the entire site is recreational, interpretive, educational, and museum.

Trails

More than 6.8 miles of recreational trails lie within the Study Area. Current recreational trails within the Study Area include the WHTC Trail, Valley View Trail, Iowa Riverfront Trail, Back-to-the-River Trail, an unnamed trail south of Lewis Central High School in Council Bluffs, an unnamed trail along 29th Avenue south of the MAC in Council Bluffs, and unnamed bike lanes along Harry Langdon Boulevard in Council Bluffs. With the exception of the unnamed trail south of Lewis Central, the aforementioned bicycle and pedestrian trails are also in the area of potential impact. Future plans include completing a city loop of trails, paving the trails along the levee system, and adding trail entries to future park sites. Attempts will be made to accommodate the future trail entries. Additional information on trails in the Study Area can be found in Subsections 2.3.3 and 3.1.6.

Trails are Section 4(f) properties but there is no "use" of the properties if the following two conditions are met: 1) trail continuity is not interrupted and 2) trail access is maintained. Trail continuity and access will be maintained during construction of the proposed improvements so there is no "use" of the trails. Therefore, as there will be no use of the trails, they are not discussed in Section 4.2.7.

Wildlife and Waterfowl Areas

The Iowa School for the Deaf is the only natural area within the Study Area that may qualify as a Section 4(f) resource.

Historic Sites

Several archaeological and historic resources have been identified in the Study Area. For archaeological resources, only those considered significant, and those whose value is in remaining "in situ," would be Section 4(f) properties. Significance is determined either by inclusion on or eligibility for the National Register of Historic Places (NRHP). Research will be conducted to determine the status of the various properties that fall in the area of potential impact. The present Study Area does include properties to note for planning

purposes. A closer field inspection and site-specific research will be necessary to confirm or rule out the potential eligibility of these properties.

Potential historic sites are discussed in Subsection 3.2.8, Historic and Archeological Resources. Spring Lake Park and Deer Hollow Park are considered historic parks. Significant historic sites (those eligible for the NRHP) are potential Section 4(f) resources. Two historic settlements, Greendale and Cartersville, are located in the Study Area. Greendale was located in what is now Valley View Park just west of the Construction Concepts, and Cartersville was located in the area north of Franklin Avenue just to the east. The Study Area was provided to the State Historic Preservation Office of Nebraska, which determined that no known archaeological sites are within the area. However, there could be archaeological remnants associated with the two historic communities. The Frito-Lay Factory, is also a potential Section 4(f) property.

TABLE 3-14
Potential Historic Structures near the Study Area

Site Number	Description
1	High Trestle Railroad Bridge over McPherson Ave. (Iowa)
2	Plate Girder Railroad Bridge over Franklin Ave. (Iowa)
3	Farmstead on 928 Valley View Dr. (Iowa)
4	Frame Building, 2801 South Ave. (Iowa)
5	Commercial Greenhouses, Harry Langdon Blvd., vicinity of E. 29th Ave. (Iowa)
6	Two Railroad Plate Girder Bridges over Mosquito Creek (Iowa)
7	Abandoned Motor Vehicle Bridge, E. South Omaha Bridge Rd. (Iowa)
8	Brick Railroad Building north of 29th Ave. (Iowa)
9	Prairie School Residence, 2801 S. 8th St. (Iowa)
10	29th Avenue Pump Station, 2800 S. 15th St., west of Indian Creek ditch (Iowa)
11	Frito-Lay Factory, 3919 W. Broadway St. (Iowa)
12	Dodge Park Memorial Shelter House Dodge Park Golf Course (Iowa)
13	Hall & Parlor Folk House, 2935 Ave. L (Iowa)
14	Worker Neighborhood, vicinity of Spring St., south of I-80 (Nebraska)
15	Spring Lake Park, vicinity of Hoctor Blvd., A St., 20th St., and Ontario St. (Nebraska)
16	Queen Anne Residence, 3632 S. 23rd St., NE corner of B St. and S. 23rd St. intersection (Nebraska)
17	Highland Park Neighborhood (Nebraska)
18	“Sophus Neble” Commercial Building, 3510 S. 24th St. (Nebraska)
19	Arts & Crafts Bungalow Residence, 3504 S. 24th St. at Valley Dr. (Nebraska)
20	Deer Hollow Park (Nebraska)
21	I-House Type Residence, vicinity of Richelieu Ave. and 2nd St. (Nebraska)
22	Woodland Hills Subdivision (Nebraska)

3.2.8 Historic and Archeological Resources

Cultural resources include archaeological and historical items, places, or events considered important to a culture, community, tradition, religion, or science. Archaeological and

historic resources are locations where human activity measurably altered the earth or left deposits of physical or biological remains. Prehistoric examples include arrowheads, rock chips from tool creation, and village remains. Historic resources generally include campsites, roads, fences, homesteads, trails, and battlegrounds. The National Historic Preservation Act, and its implementing regulations, govern activities of federal agencies to determine the effects of their actions on cultural resources and take certain steps to avoid, minimize impacts, or mitigate impacts.

Two reconnaissance surveys were conducted by Tallgrass Historians L.C. of Iowa in 2003 to identify potential cultural resources of concern in the CBIS Improvements Project Study Area. One survey was performed for potential historic properties in Iowa and Nebraska; the other was conducted for archaeological resources in Iowa (Nash, 2003; Rogers, 2003). The Nebraska State Historical Society conducted a separate review of archaeological resources in Nebraska within the Study Area (Bozell, 2003). Although on the same pace as Nebraska Department of Roads (NDOR) architecturally, Iowa DOT will not issue Phase I approval until Tier 2 studies have been completed.

In addition to the three studies conducted for the CBIS project, two studies were recently conducted for a transportation project on Iowa Highway 92/U.S. 275, including part of the CBIS Improvements Project area. Bear Creek Archaeology (BCA) conducted a Phase I Archaeological Survey along the corridor and in seven borrow areas (Thompson, 2003), and Tallgrass Historians L.C. performed a historic structure survey near the U.S. 275 interchange (Nash, 2003).

The most comprehensive cultural resources study conducted in the Council Bluffs area was a historic preservation planning study undertaken by the Council Bluffs Historic Preservation Commission (Jennings, Gottfried, and Cheek, 1982; cited in Rogers, 2003). The study focused primarily on architectural resources and completed a reconnaissance-level investigation of the historic sections of Council Bluffs, with some attention given to potential archaeological resources. However, no archaeological survey was undertaken as part of that study. More recent cultural resource investigations (addressing parts of the study corridor) included Phase I archaeological surveys conducted for the WHTC by Henning and Long in 1993 and for various road improvement and other construction projects.

Historic Properties

As described above, attempts to document potential historic properties in the Study Area include:

- 2003 reconnaissance survey of Iowa and Nebraska by Tallgrass Historians L.C.
- Historic properties survey near the U.S. 275 interchange by Tallgrass Historians L.C.
- Historic preservation planning study for Council Bluffs by the Council Bluffs Historic Preservation Commission

Based on the 2003 survey of properties within or near the Study Area, the properties listed in Table 3-14 were identified as having historic potential. However, Property #3, Farmstead, has been demolished and Property #22, Woodland Hills Subdivision, is not currently eligible as a historic property since it is less than 50 years old. The complete results of the Phase 1A cultural resources survey are available at the Iowa Department of Transportation, Office of Location and Environment. Frito-Lay, Property #11, recently announced it was closing its Council Bluffs'

plant. Future developments regarding the plant and its property will be addressed in the Tier 1 FEIS and Tier 2 studies.

Archaeological Resources

As described in Section 3.2.8, attempts to document potential archaeological resources within the Study Area include:

- 1993 Phase I archaeological surveys conducted for the WHTC and for various road improvements and other construction projects by Henning and Long
- Review of archaeological resources in Nebraska by the Nebraska State Historical Society
- Phase I archaeological survey along the corridor and in seven borrow areas by BCA
- Historic preservation planning study by the Council Bluffs Historic Preservation Commission
- 2003 reconnaissance survey of Iowa by Tallgrass Historians L.C.

The Office of the State Archaeologist and State Historic Preservation Office—Iowa databases identified up to four possible archaeological sites (prehistoric scatter, historic railroad site, historic road/trail, and historic farm/residence) in the Study Area. An archaeological reconnaissance survey identified parts of the Study Area as having a high potential for archaeological findings, in part due to the presence of known archaeological resources.

Databases of known archaeological sites were reviewed before performing the 2003 field reconnaissance survey. No sites were found within the Nebraska part of the corridor (Bozell, 2003 and 2004). The Nebraska State Historic Preservation Office (SHPO) Archaeologist has concurred that no additional archaeological surveys are required in Nebraska, and there would be no effect on historic properties (NSHS, 2004). Review of records in the Iowa Office of the State Archaeologist by Tallgrass Historians L.C. revealed 26 previously recorded sites within a 1-mile radius of the study corridor. Because of the sensitivity regarding site locations for archaeological artifacts, precise locations of the sites are not provided in this report, neither in text nor graphic format.

Six of the 26 previously recorded sites in Iowa are within or very near the I-29/I-80 Study Area. They include a possible Glenwood site (1,050 to 650 years before present) located northeast of the I-29/I-80 East System Interchange; a historic habitation site along Valley View Drive (recently demolished); a historic road/trail; a historic railroad grade north of the I-29 South/I-80 East intersection; a historic scatter northeast of the Nebraska Avenue I-29 exit; and a historic scatter also northeast of the Nebraska Avenue I-29 exit. Of the sites, the Valley View Drive site, the historic road/trail, the historic railroad grade, and both historic scatters northeast of the Nebraska Avenue I-29 exit were all determined to be ineligible for the NRHP. Of the remaining 20 sites addressed by Tallgrass Historians L.C., an 1804 Ioway village site is believed to be located east of the 25th Street exit off of I-29. The locations of the potential Glenwood and Ioway village sites are both in question, with no determination of eligibility. A 1992 Phase I investigation (Mandel and Winham, 1992; cited in Rogers, 2003) concluded that the Ioway village, from accounts of Lewis and Clark, may have been closer to the bluffs and "probably it has been destroyed by the present town of Council Bluffs."

The historic Council Bluffs Airport is partly contained within the East System Interchange. Although no evidence of the airport was found in an investigation by BCA, a compacted layer likely associated with the runway was encountered in a few bucket augers. The report noted no additional archaeological work was required, but recommended that a Phase I survey be conducted if portions of the site are ultimately in an area that would to be disturbed (Thompson, 2003).

The BCA investigation also evaluated borrow area #17 located east of Mosquito Creek along Valley View Drive and includes the remains of a late 19th to mid-20th century road (13PW159) crossing the floor of Mosquito Creek. This site is just east of the Study Area. The site was abandoned prior to 1950 and mostly incorporated into an agricultural field. A small, heavily disturbed part of the roadbed is exposed in a tree-covered area along Mosquito Creek. Based on a lack of integrity, BCA recommended no further investigation for this site (Thompson, 2003).

The archaeological potential in parts of the Study Area appears to be very high for both prehistoric and historic period sites (Rogers, 2003). There are eight known archaeological sites within or very near the Study Area (the seven previously recorded and documented in the Tallgrass Historians L.C. report and one site identified by BCA). While modern construction has likely destroyed or seriously damaged many areas with archaeological potential, there are long stretches of upland and alluvial plain landforms that remain fairly intact (such as parts of the Mosquito Creek alluvial plain and upland areas not extensively cultivated) and have the potential to contain intact or minimally-affected archaeological sites. Historic period sites may also be encountered. Early settlements of Cartersville (east of I-80) and Greendale (west of I-80) were located near the boundaries of the Study Area; none of the sites previously described are associated with these settlements.

3.2.9 Air Quality

The 1990 Clean Air Act Amendments and NEPA require that potential air quality impacts be addressed in the preparation of environmental documents. In 1993, the FHWA issued *Air Quality Analysis for NEPA Documents* as guidance for the analysis of air impacts. The applicability and extent of air quality analysis is based primarily on the project status with federal and state air quality standards. If a project is located within a nonattainment area or an area redesignated as attainment with a maintenance plan in place, a conformity determination may be required to ensure a project complies with the State Implementation Plan.

Pottawattamie and Douglas Counties do not encompass any nonattainment areas. One area outside the Study Area (the site is bounded by 4th Street on the south, 11th Street on the west, Avenue H and the Nebraska-Iowa Border on the north, and the Missouri River on the east) in downtown Omaha was previously designated as nonattainment for lead. The USEPA has redesignated the area as an attainment area for lead effective June 19, 2001, with a limited maintenance plan (see 66 FR 20196 [USEPA, 2001]). Since no part of the project is within a nonattainment area or an attainment area with a maintenance plan in place, no conformity determination is required.

The Study Area can be characterized as urban, with associated air emissions from mobile and stationary sources. The rolling nature of the Study Area in conjunction with a climate characterized by a range of wind speeds originating from different directions results in a

distribution of pollutants and minimized opportunities for exceeding the ambient air health criteria.

3.2.10 Noise

Sound is caused by the vibration of air molecules and is measured on a logarithmic scale with units of decibels (dB). Sound is composed of a wide range of frequencies, but the ear is not sensitive to all frequencies. The "A" weighted scale was devised to correspond with the ear's sensitivity, and sound levels are measured as dBA on that scale. Highway agencies use a 1-hour equivalent sound level, $L_{eq}(h)$, as a descriptor of noise levels. Studies show that a change of 3 dBA is a barely perceivable change in noise, whereas a change of 10 dBA is perceived as being twice or half as loud.

The FHWA Title 23 CFR (23 CFR 772) has developed noise abatement criteria for assessing potential noise impacts. Additionally, guidelines were identified in *Guidance for Preparing and Processing Environmental and Section 4(f) Documents,* Technical Advisory T 6640.8A (FHWA, 1987). The Iowa DOT also protects the public from noise through Policy 500.07, Highway Traffic Noise Analysis and Abatement. The criteria set forth in the guidance consider appropriate noise levels based upon land use activity. For example, the noise abatement criterion for a residence is 67 dBA and for a business, 72 dBA. A traffic noise impact occurs when noise levels approach (in this case, 66 dBA for residences and 71 dBA for businesses) or exceed the criterion for the defined land use activity, or if a substantial increase in predicted noise level occurs even though the applicable criterion has not been reached.

The NDOR's Noise Analysis and Abatement Policy is intended to be consistent with the FHWA's Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772). Specifics of the NDOR policy include a policy to reduce excessive noise from highway traffic where feasible and economically reasonable, and NDOR may be responsible for analyzing traffic noise impacts but is not responsible for providing abatement for development that occurs after the environmental document is signed.

The Traffic Noise Model (TNM) used for the CBIS Improvements Project was used only to define typical noise levels by roadway categories, vehicles, vehicle speeds, and distance from the edge of pavement. Noise monitoring or modeling was not conducted for this Tier 1 analysis. The analysis was based on a determination of 66-dBA (residential) and 71-dBA (commercial) contours from the edge of the pavement for the existing roadway system based on current traffic data. The contours are essentially parallel to the interstate system and do not account for roads at interchanges, see Figure 4-4. The volumes and speeds of traffic along the interstate dominate the noise profile; noise levels for interchange roads would be much less than interstate noise levels mainly because of reduced speeds and volumes.

A second set of 66-dBA and 71-dBA contours was developed based on predicted traffic levels in 2030 assuming that the CBIS Improvements Project improvements were constructed. The contours were located at the projected distance from the edge of interstate roadway for the concepts considered within the area of potential impact. Sensitive receiver locations such as hospitals, schools, and churches were identified on a GIS layer and the 71-dBA and 66-dBA contours were superimposed on aerial photographs of the project area, see Figure 4-5. The number of residences, religious facilities (churches), and other structures housing sensitive receivers within the contours was estimated. The intent of the analysis was to show the type

and number of noise-sensitive receivers that could be affected by the project. No effort was made at this stage to develop particular abatement measures, but potential mitigation measures and the results of the contour analysis are included in Section 4.2.10.

Noise Sources and Existing Conditions

Vehicular traffic along the CBIS and adjacent local roadways is the predominant source of noise in the Study Area. Highway noise from cars is associated with the friction of tires on pavement. Heavy truck noise consists of engine noise, engine exhaust noise, and tire noise. Truck engine noise alone usually falls in the range of 75 to 85 dBA (at 50 feet from the source); truck engine exhaust noise (at 50 feet) usually falls in the range of 90 to 100 dBA without mufflers or in the range of 80 to 90 dBA with a good muffler system; and tire noise falls within the range of 75 to 90 dBA (USDOT, 1993). The height of the noise source also contributes to the noise level. Therefore, the relative height of the truck noise source requires higher noise barriers for effective mitigation, especially when trucks account for a substantial source of noise. Trucks account for 8 to 16 percent of the traffic along the CBIS.

Potentially Sensitive Noise Receivers

Parts of the corridor pass through urbanized areas in Nebraska along I-80, and in Iowa near the I-29/I-480/West Broadway System Interchange northward and near the I-80/I-29 East System Interchange. Sensitive receivers within the projected current 71-dBA noise contour are the Open Door Baptist Church, Crossroads Christian Center, and the Seventh Day Adventist Church. No hospitals or other schools are within the 71-dBA contour. Noise impacts to specific properties and community facilities are discussed in Subsection 4.2.10, Noise.

3.2.11 Regulated Materials

The existence of regulated materials and waste, either from the presence of stored materials or due to past spills or leaks, is identified to facilitate transportation planning. To correct past environmental contamination problems and to minimize future potential for contamination, various federal and state regulations have been implemented. The Resource Conservation and Recovery Act (RCRA), as amended, requires federal agencies to comply with all federal, state, interstate, and local regulations governing control and abatement of solid waste or hazardous waste disposal. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), provides for funding, enforcement, response, and liability in circumstances where hazardous substances have been released into the environment. CERCLA, RCRA, and other applicable federal and state acts and their implementing regulations help prevent and address soil, water, and air contamination.

Industrial sites within the Study Area are the main users and producers of regulated materials, as well as generators of hazardous and nonhazardous waste. Commercial facilities within the Study Area often store large quantities of regulated materials for retail or wholesale purchase. Examples of such facilities include gas stations with underground storage tanks, automotive repair facilities, and tool and die shops.

The presence of hazardous materials and waste sites in or adjacent to the Study Area and area of potential impact within the Study Area was identified through the following methods:

- A review of information contained in federal and state environmental databases
- A review of readily available historical information (e.g., Sanborn maps, topographic maps, aerial photographs, etc.)
- Visual reconnaissance of the corridor
- The IDNR Underground Storage Tank section database on Leaking Underground Storage Tank (LUST) sites (http://www.iowadnr.com)

Figure 3-2 identifies all such sites near to the Study Area. Sites within the Study Area were assessed for their potential risk using Iowa DOT criteria. Iowa DOT classifies sites as high, moderate, low, or minimal risk according to the following criteria:

- **High risk.** CERCLA or NPL sites; RCRA Corrective Action sites; RCRA Transportation, Storage, or Disposal sites; State Hazardous Waste Sites classified as "a" or "b" (as defined in Iowa Code 567.148); Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) sites; RCRA sites under Administrative Orders; former manufactured gas plant sites; and any property where evidence of a release of regulated materials was observed during the field corridor review or site visit.
- **Moderate risk.** LUST sites (except those with a No Further Action designation by IDNR); State Hazardous Waste Sites classified as "c or "d" (as defined in Iowa Code 567.148); automobile junkyards and salvage yards; and commercial and industrial facilities where the potential for regulated materials was observed during the field corridor review or site visit and sloppy housekeeping practices were observed to an extent that the potential for environmental contamination is higher than if normal waste management practices had been followed.
- **Low risk.** LUST sites with a No Further Action designation; State Hazardous Waste Sites classified as "e" (as defined in Iowa Code 567.148); RCRA Small– or Large-Quantity Generators; CERCLIS sites with a No Further Remedial Action Planned determination; Underground Storage Tank (UST) sites; aboveground storage tank sites; permitted users or generators of regulated materials that do not have releases listed in environmental databases or other documentation; sites regulated under air emissions permits; animal confinement operations sites; and commercial/industrial facilities where the potential for regulated materials to be present was observed during site visits but no evidence of releases was observed or reported.
- **Minimal risk.** Houses; farms; agricultural land; vacant or timbered land; and commercial properties where a low potential or no potential for regulated materials to be present was observed during site visits.

The preliminary review of readily available information relating to regulated material sites identified 3 potential high risk sites, 4 potential moderate risk sites, 50 potential low risk sites, and 1 site with unknown risk within the area of potential impact. An additional 17 sites are in the Study Area. Any sites that are actually within the area of potential impact

that are considered high, moderate, or unknown risk require further analysis in Tier 2 environmental studies if it is likely they would be disturbed by construction of the project. Table 3-15 lists regulated materials sites located within the Study Area.

The area of potential impact includes one NPL site. The Omaha Lead site is a proposed Superfund site of more than 8,000 acres, bounded roughly by Ames Avenue to 'L' Street and from 45th Street and the west side of the central business district to the west bank of the Missouri River and south of the central business district in Omaha. Dodge Park and other parks in Iowa were sampled as part of the studies and are listed in CERCLIS; no areas in Iowa are known to be included in the area of investigation or the area targeted for cleanup. Any improvements in Nebraska (I-80 or I-480) would require additional investigation with respect to this designated area. Contamination at the Omaha Lead site is primarily attributed to the former Asarco Plant.

TABLE 3-15
Regulated Materials Sites Located Within the Study Area

Code[a]	Risk	Name	Address	City/State
K, U	High	Benson 66 Service	3500 W. Broadway	Council Bluffs, IA
K, U	High	[2]Eldon's Amoco	2704 S. 24th St.	Council Bluffs, IA
K, U	High	Kwik Shop #527	3632 Ave G.	Council Bluffs, IA
K, U	High	Lloyd's Citgo	3500 A St.	Council Bluffs, IA
K	High	McGee's Dutch Mill	401 W. South Omaha Bridge Rd.	Council Bluffs, IA
K	High	Mercantile Bank of Western Iowa	15 S 35th St.	Council Bluffs, IA
	High	Omaha Lead Site		Omaha, NE
G, I	Moderate	Iowa Interstate Railroad	2722 South Ave.	Council Bluffs, IA
G, I	Moderate	Oil Tank Farm	I-29 and Iowa Hwy 92	Council Bluffs, IA
	Moderate	Railroad Yard	South Expressway and I-80/I-29	Council Bluffs, IA
E, G, I, S	Moderate	Warren Distribution	2849/2850 River Rd.	Council Bluffs, IA
I	Low	Allied Communications Equipment	325 W. South Omaha Bridge Rd.	Council Bluffs, IA
K, U	Low	Anderson Amoco Food Shop	1759 Madison Ave.	Council Bluffs, IA
U	Low	Anderson Trucking Services Inc.	3540 14th Ave.	Council Bluffs, IA
K, U	Low	Auto Convoy	220 29th Ave.	Council Bluffs, IA
G, I	Low	Bemis Company Incorporated	3514 S. 25th St.	Omaha, NE
D, I, Q	Low	Better Quality Cassettes-Former Site Of	2101 S. 35th St.	Council Bluffs, IA
I	Low	Boyer's Diesel	2420 S. 24th St.	Council Bluffs, IA
U	Low	Bucky's Express	2765 S. 13th Ct.	Omaha, NE

TABLE 3-15
Regulated Materials Sites Located Within the Study Area

Code[a]	Risk	Name	Address	City/State
K, U	Low	Cal's Food & Gas Mart	429 South Omaha Bridge Rd.	Council Bluffs, IA
G, I, CC	Low	Cari Pre-Leased Furniture	116 29th Ave.	Council Bluffs, IA
K, U	Low	Casey's #34	511 23rd Ave.	Council Bluffs, IA
I	Low	Cathy McIntyre NP Dodge Real Estate	1730 Madison Ave.	Council Bluffs, IA
	Low	CENEX	4040 South Expressway	Council Bluffs, IA
K, U	Low	Central Transport	3000 S. 11th St.	Council Bluffs, IA
CC, Q, I	Low	Chevron Chemical Company (former site)	201 35th Avenue	Council Bluffs, IA
AF	Low	Community Christian School	3657 Ave. G.	Council Bluffs, IA
K, U	Low	Council Bluffs Service Center	3003 S. 11th St.	Council Bluffs, IA
G, I	Low	Cresline Plastic Pipe Co	2100 S. 35th St.	Council Bluffs, IA
K, U	Low	Darrahs Apco INC	3607 9th Ave.	Council Bluffs, IA
G, I	Low	Dillards (Oklahoma Installation)	1751 Madison Ave.	Council Bluffs, IA
G, I	Low	Eagle Systems	3101 Blake St.	Omaha, NE
U	Low	Eddy's	3434 Nebraska Ave.	Council Bluffs, IA
U	Low	Eddy's 2713	2713 S. 24th St.	Council Bluffs, IA
I, U	Low	Fill and Food #3	701 32nd Ave.	Council Bluffs, IA
K, U	Low	Fran Oil Co.	1839 Madison Ave.	Council Bluffs, IA
G, I, U	Low	Frito-Lay Inc.	3919 W. Broadway	Council Bluffs, IA
G, I	Low	Henry Doorly Zoo	3701 S. 10th	Omaha, NE
K, U	Low	Holiday Station Store #59	3601 W. Broadway	Council Bluffs, IA
U	Low	HTL Truck Line Inc.	1415 S. 35th St.	Council Bluffs, IA
U	Low	I-80 Pump Station	3000 River Rd.	Council Bluffs, IA
I	Low	Independent Trailer Manufacturer	2918 S. 9th St.	Council Bluffs, IA
K, U	Low	J's Amoco	3540 W. Broadway	Council Bluffs, IA
	Low	Jim Hawk Truck Trailer Inc.	2917 S. 9th St.	Council Bluffs, IA
K, U	Low	Lakeshore Country Club	4500 Piute	Council Bluffs, IA

TABLE 3-15
Regulated Materials Sites Located Within the Study Area

Code[a]	Risk	Name	Address	City/State
I	Low	Larry's Diesel Repair	2910 S. 7th St.	Council Bluffs, IA
I, AF	Low	Loess Hills Christian School	2755 Ave. N.	Council Bluffs, IA
I	Low	Mid American Energy Co—Council Bluffs	3003 S. 11th St.	Council Bluffs, IA
U	Low	Oil Exchange / Eddy's	1839 ½ Madison Ave	Council Bluffs, IA
G, I	Low	Omaha Standard Truck and Equipment Co.	2109 S. 35th St.	Council Bluffs, IA
I	Low	Peavy Grain Company	2600 S. 4th St.	Council Bluffs, IA
K, U	Low	Pilot Travel Center	2647 S. 24th St.	Council Bluffs, IA
G, I, V	Low	Professional Tank Lining Incorporated	2804 South Ave.	Council Bluffs, IA
G, I	Low	RDC Truck Repair	100 W. South Omaha Bridge Rd.	Council Bluffs, IA
I, AF	Low	Rogers Auto Inc.	230 W. South Omaha Bridge Rd.	Council Bluffs, IA
	Low	Sapp Brothers Texaco	2608 S. 24th St.	Council Bluffs, IA
I	Low	Scouler-Welsh	3600 1st Ave.	Council Bluffs, IA
	Low	Selectrucks of Omaha, Omaha Truck Center	1208 S. 31st St.	Council Bluffs, IA
	Low	Sheet Metal Workers Local #3	3333 S. 24th St.	Omaha, NE
K, U	Low	Sinclair Retail #14030	1305 N. 25th St.	Council Bluffs, IA
K, U	Low	Speedee Mart Texaco	3624 9th Ave.	Council Bluffs, IA
E	Low	Speedo Truck Lube	2601 S. 24th St.	Council Bluffs, IA
K, U	Low	Sunshine Mini Mart	3609 9th Ave.	Council Bluffs, IA
G, I, K, U	Low	Superior Honda	3501 W. Broadway	Council Bluffs, IA
U	Low	29th Avenue Pump Station	2800 S. 15th St.	Council Bluffs, IA
U	Low	Taylor Quick-Pic	1836 Madison Ave.	Council Bluffs, IA
U	Low	Ted Praeker Green Houses	2807 South Ave.	Council Bluffs, IA
U	Low	The Pillsbury Company	2600 S. 4th St.	Council Bluffs, IA
E	Low	Travel Centers of America	3210 S. 7th St.	Council Bluffs, IA
G, I	Low	Walgreen's #1781	301 W. Bennett Ave.	Council Bluffs, IA
G, I, V, AA	Low	Wayne's Oil Service-Former Site of	2804 South Ave.	Council Bluffs, IA
G, I	Low	West Iowa Tool & Die Inc	257 29th Ave.	Council Bluffs, IA
CC	Low	Westwood Golf Course-Council Bluffs	3700 9th Ave.	Council Bluffs, IA

TABLE 3-15
Regulated Materials Sites Located Within the Study Area

Code[a]	Risk	Name	Address	City/State
G, I	Low	Whitehill Trailer Repair	251 29th Ave.	Council Bluffs, IA
K, U	Unknown	Westend Service	3778 Ave. G	Council Bluffs, IA

[a] Code: Defines the type of site in various databases. Several sites were identified in the field and therefore do not have database codes.

AA-Corrective Action Report (CORRACTS)

AF-Federal Insecticide, Fungicide, and Rodenticide Act / Toxic Substance Control Act (FIFRA/TSCA)

CC-CERCLIS No Further Remedial Action Planned (CERC-NFRAP)

D-Hazardous Materials Information Reporting System (HMIRS)

E-Emergency Response Notification System (ERNS)

G-Resource Conservation and Recovery Information System (RCRIS-SQG)

I-Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)

K-Leaking Underground Storage Tank Database (LUST)

Q-Resource Conservation and Recovery Information System (RCRIS-LQG)

S-Toxic Chemical Release Inventory System (TCRIS)

U-Underground Storage Tank Database (UST)

V-RCRA Administrative Action Tracking System (RAATS)

3.2.12 Energy Resources

Construction of the CBIS Improvements Project would require consumption of energy for processing materials, construction activities, and maintenance for lanes to be added within the project limits. Energy consumption by vehicles in the Study Area may increase during construction due to possible construction-related traffic delays.

Construction of the proposed improvements would result in more efficient traffic operations by reducing traffic congestion and improving overall operations; thereby reducing vehicle-stopping and –slowing conditions. When starting and stopping is minimized, and cars can travel at steady/continuous speeds, this contributes to "high efficiency driving" and results in reduced use of fossil fuels and high gas mileage (Parker and Stedman, 1994). Additional benefits would be realized from increased capacity and smoother riding surfaces. Thus, in the long term, postconstruction operational energy requirements would offset construction and maintenance energy requirements and result in net savings in energy usage.

3.2.13 Visual Resources

The visual perception of an area can be greatly affected by transportation projects. Therefore, visual impacts must be taken into consideration when assessing a project. A visual impact affects an aesthetic component of an area, not only by changing the way the environment is seen by the viewer but also by impacting the character and quality of the area or a visually sensitive resource. Furthermore, the environment contains resources that help to develop a visual experience for the viewer. Federal legislation, such as the Highway Beautification Act of 1965, has been enacted to preserve and protect public investment and natural beauty,

provide landscapes and roadside development, and promote the safety and recreational value of public travel.

The Omaha/Council Bluffs area is diverse in its natural and human environment and exhibits a variety of visual characteristics. The Missouri River is a powerful landscape feature in the western part of the Study Area. Over the years, the river has changed its course numerous times. Periodic flooding has resulted in wetlands and oxbow lakes adjacent to the river. Bluffs rise on either side of the river, creating transportation challenges but also offering promontories with sweeping vistas that figure prominently in both Omaha's and Council Bluffs' histories. Council Bluffs' name itself derives from these features.

The Vincent Bluff Preserve, a 30-acre scenic prairie bluff within Council Bluffs, is part of the Loess Hills, which border the Missouri River extending north-south along the western edge of Iowa from north of Sioux City into northwestern Missouri. The prominent, west-facing blufftop is clearly visible from both I-80 and I-29. It is also visible from the Loess Hills Scenic Byway, the WHTC, and the Wabash Trace Nature Trail. Someone standing on the bluff can look out over Council Bluffs, Omaha, and the Missouri River valley, see Figure 3-1.

The Loess Hills are a unique landform. Only in China are loess deposits found at such depths. The Loess Hills are an angular band of rugged, prairie-topped hills rising from the flat bottomland of the Missouri River. The hills were formed 14,000 to 24,000 years ago from silt blown in from the Missouri River floodplain. This silt erodes easily if the vegetation has been removed. Erosion is one of the leading problems in the Loess Hills caused by activities such as mining and removal of the loess for fill material. Erosion has formed the Loess Hills into unusual shapes. When originally deposited, the loess was smooth; now it is rough and jagged.

In addition to its scenic value, the Loess Hills contain high-quality prairie remnants and provides wildlife habitat that can also be visually appealing. Steep slopes heated by the sun and wind support unique plants and animals more commonly found further west in the Great Plains. Some prairie species unique to the area and found on the bluff include big and little bluestem, purple coneflower, Illinois bundle flower, and others. The Loess Hills include the largest tracts of remaining prairie in Iowa.

The WHTC adds another aesthetic component to the Study Area. The site includes designated prime farmland currently used for crop production on the north, which provides a transition from the interstate to the knolls and curves leading to the WHTC. The drive from 24th Street to the WHTC winds through several ecosystems, including a marshy area at the entrance, the crop ground, and finally restored prairie. As the crops give way to the prairie, the view is much like that which the early settlers saw as they left their agricultural homes and moved west into the miles of unbroken prairie. The object of the design, as stated in the WHTC Comprehensive Plan, is to maintain "good approach views." A buffer of native trees has been planted to further enhance the aesthetic value of the area.

Overall, the Study Area has been heavily altered by human development. Residential subdivisions, commercial development, industrial development, and various supporting infrastructure have altered the natural visual landscape. The combination of a moderate

level of urban development and the remaining amount of public land results in relatively little unaltered land in the Study Area.

3.3 Indirect and Cumulative Effects

In 1997, the CEQ developed an 11-step approach to evaluate indirect and cumulative effects.

- "Indirect effects" are "caused by an action and are later in time or further removed in distance but are still reasonably foreseeable" (40 CFR 1508.8).
- "Cumulative effects" are "impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions" (40 CFR 1508.7).

CEQ's process involves scoping (defining the boundaries for the analysis), a description of the affected resources in terms of the stress they experience and their response to change, and finally the environmental consequences, including the cause and effect relationships, magnitude, significance, and measures to avoid, minimize, mitigate, monitor, and manage consequences. Table 3-16 lists the steps of an indirect/cumulative analysis. This process was applied and the results from Steps 1 though 4 are contained in this section (Affected Environment), while Steps 5 through 11 are included in a discussion of indirect/cumulative impacts contained within the impacts discussion for each relevant resource area of Section 4, Environmental Consequences.

The analysis of cumulative impacts focuses on the key resources potentially affected by the proposed action and other reasonably foreseeable actions in the Study Area. The CBIS Improvements Project would occur within a corridor in an urbanized area, and require many changes in existing land use including relocations of residences and businesses. The Missouri River and its tributaries, with their associated floodplains and wetlands, are the dominant natural features in the Study Area that would be affected by the proposed action and other actions. The Missouri River corridor presents a migration pathway for T&E species such as the bald eagle, piping plover, and pallid sturgeon. For this Tier 1 EIS, the cumulative impacts analysis discussed in Section 4 will focus on the following resources: wetlands, surface water (quality), T&E species, and changes in existing land use.

Given the resources selected for cumulative analysis, the geographic scope varies by resource element. The Nebraska side of the Missouri River is the western boundary of the geographic scope because the selected resources evaluated for the CBIS improvements were not impacted further west. The geographic scope for the analysis of wetlands, surface water, and T&E species is confined to the Council Bluffs city limits, including the Missouri River. Since the CBIS Improvements Project would only require up to 10 residential relocations in Omaha, the city limits of Council Bluffs is also the geographic area for the determination of cumulative effects of land use conversion from residential to interstate ROW.

TABLE 3-16
Steps in Indirect/Cumulative Analysis

Environmental Impact Assessment Component	Analysis Steps
Scoping	1. Identify the significant cumulative effects issues associated with the proposed action, and define the assessment goals. 2. Establish the geographic scope for the analysis. 3. Establish the time period for the analysis. 4. Identify other actions affecting the resources, ecosystems, and human communities of concern.
Describing the Affected Environment	5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stresses. 6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds. 7. Define a baseline condition for the resources, ecosystems, and human communities.
Determining the Environmental Consequences	8. Identify important cause-and-effect relationships between human activities and resources, ecosystems, and human communities. 9. Determine the magnitude and significance of cumulative effects. 10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects. 11. Monitor the cumulative effects of the selected alternative and adapt management.

Traffic modeling for the CBIS Improvements Project was performed for the year 2030. Subsequent to the Tier 1 EIS, Tier 2 studies would be performed to evaluate particular build alternatives by segments. Construction on the initial segment evaluated could commence as soon as 2009 and continue with subsequent segments for approximately 20 years. The further in the future planned actions are considered, the more speculative the analysis. Consequently, the timeframe selected for cumulative impacts evaluation is approximately 2005 to 2030. Baseline information to project impacts for the selected resource elements was available for a range of timelines. Information for surface water and floodplains in the area was available for the past 200 years. Information on wetlands is available as far back as the 1780s (Dahl, 1990). The Threatened and Endangered Species Act was initiated in 1973 and was used as the base for the historic information. Several records from the IDNR T&E database showing recorded incidences of T&E in the Study Area were used to supplement the previously cited information. Information on major land use changes due to previous transportation projects was noted for the past 40 years.

There are committed and planned improvements in the IDOT and NDOR multiyear programs and in MAPA's *2025 LRTP*. Additionally, Omaha and Council Bluffs have city projects committed and planned. Other agencies and private developers also have future

plans for land within the Study Area. A brief summary of key projects within or near the Study Area follows:

- 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 Iowa and Nebraska.
- Widening of U.S. 275 in Council Bluffs between the Missouri River Bridge and I-29 to four lanes—the corridor is approximately 4.5 miles long and the project is being designed to improve the U.S. 275 route in Iowa.
- Widening of 24th Street in Council Bluffs between I-80/I-29 and U.S. 275 to four lanes—the existing two-lane road will be expanded to four lanes to improve the connectivity between I-80/I-29 and U.S. 275 and access to the WHTC.
- Widening of U.S. 6 in Iowa between I-80 and Westfair to four lanes—the widening project will improve existing road conditions and reduce traffic delays for accessing the Westfair Amphitheatre.
- Widening of U.S. 75 in Nebraska to six lanes from I-80 to Nebraska Highway 370—the project is being designed to widen a section of Kennedy Freeway to improve north-south traffic flow and connectivity between I-80 and U.S. 275.
- Addition of a third lane to eastbound I-80/I-29 between the I-80/I-29 East and West System Interchanges—this project is designed to reduce traffic congestion during peak hours.
- Addition of a water park in Council Bluffs—a 15-acre water park (with another 8 acres reserved for future expansion) is tentatively planned to be constructed west of the MAC.
- 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 river.
- Council Bend restoration project by the USCOE—located along the east bank of the Missouri River in Council Bluffs and extending approximately ½ mile upstream of the I-480 Bridge to the Chicago, Central, and UPRR bridge, this area is planned for development of a chute, backwaters, wetlands, shallow river habitat, and recreational and educational features such as nature trails.
- One Renaissance Center—two condominium towers and two apartment buildings were planned for construction in 13 acres on the western portion of Playland Park in Council Bluffs. However, it is not likely that this development will proceed because the deadline for demonstrating the necessary financing was not met and the City Council is attempting to buy back the parcel sold to the development company.
- Park and trail development in Council Bluffs between I-480 and the Council Bend restoration project—located at the foot of the Missouri River Pedestrian Bridge with plans for a riverfront trail, 9-acre festival grounds, 9-acre lake, playground, boat ramp, and other natural and recreational resources. This development is tied to funding for One Renaissance Center and needs to be funded before tower construction can

commence. As noted previously, One Renaissance Center is unlikely to be constructed, but the City Council is reviewing other potential uses for the land around the landing area for the pedestrian bridge.

- Housing development in Council Bluffs—the Council Bluffs Riverfront Master Plan identifies a potential 17-acre housing project with duplex type buildings near Avenue G and Benson Street west of I-29.
- Riverfront Place in Omaha—located on more than 6 acres at the foot of the Missouri River Pedestrian Bridge with plans for 78 residential units in two towers, 27 town homes, commercial space, and a public plaza.

There are other planned and proposed projects in the Omaha and Council Bluffs area that are not discussed here because they are outside the Study Area, would negligibly affect the resources of concern, or are speculative.

The steps in the indirect/cumulative impacts analysis are continued in Section 4, Environmental Consequences, with further description of the affected environment (Steps 5–7) and a determination of the environmental consequences of the CBIS Improvements Project (Steps 8–11).

Section 3 Figures

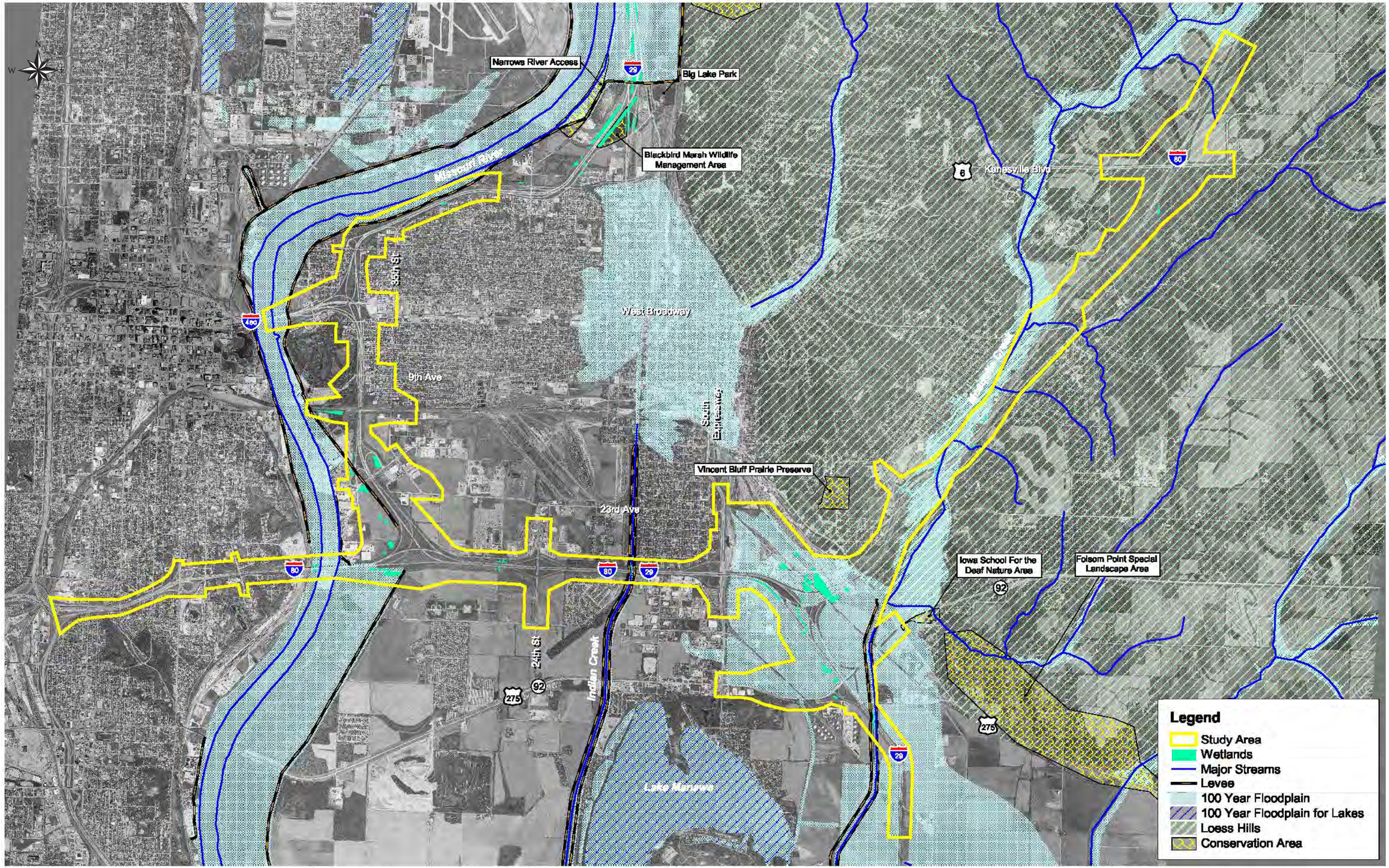


Figure 3-1
Natural Environment

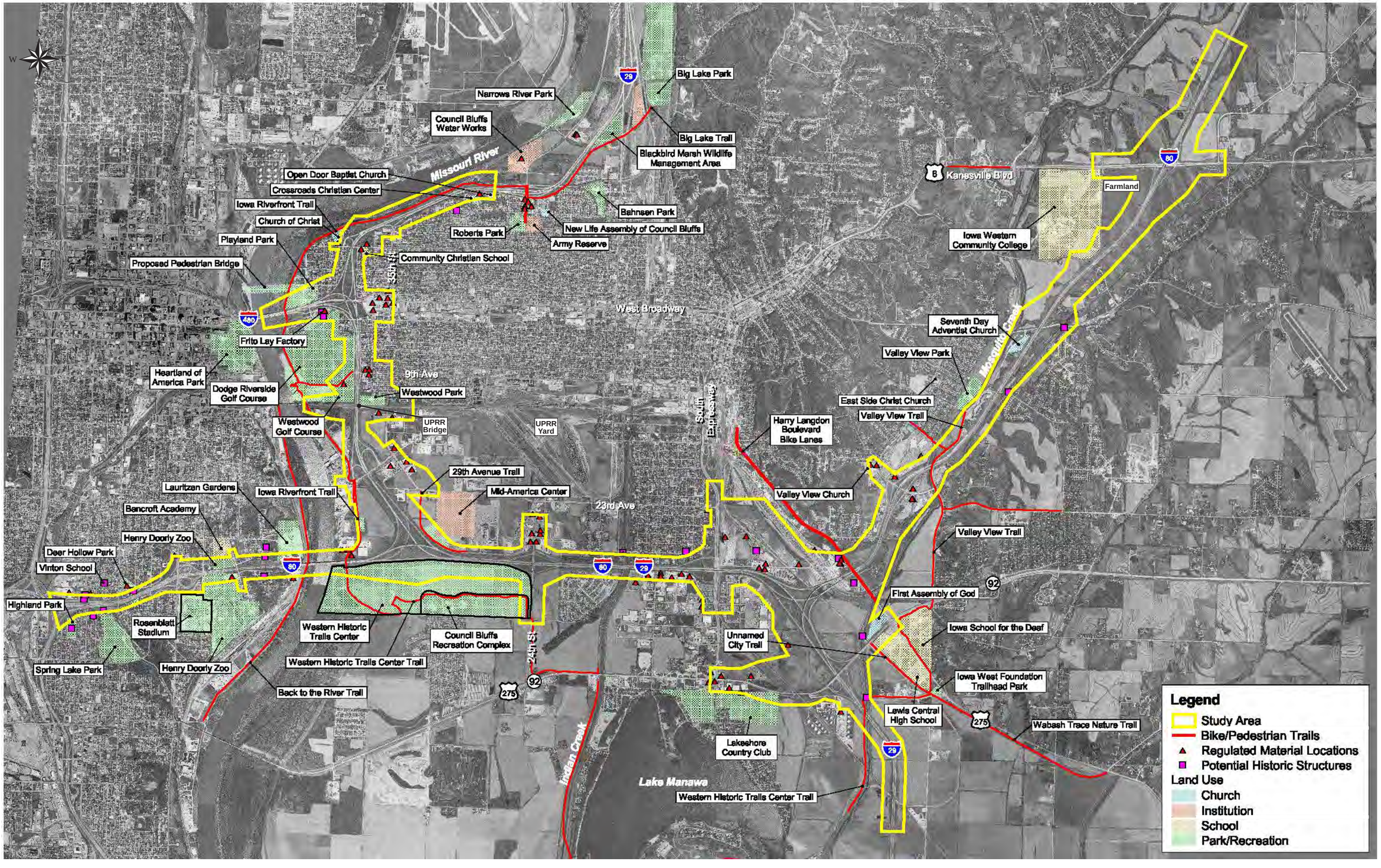


Figure 3-2
Built/Human Environment

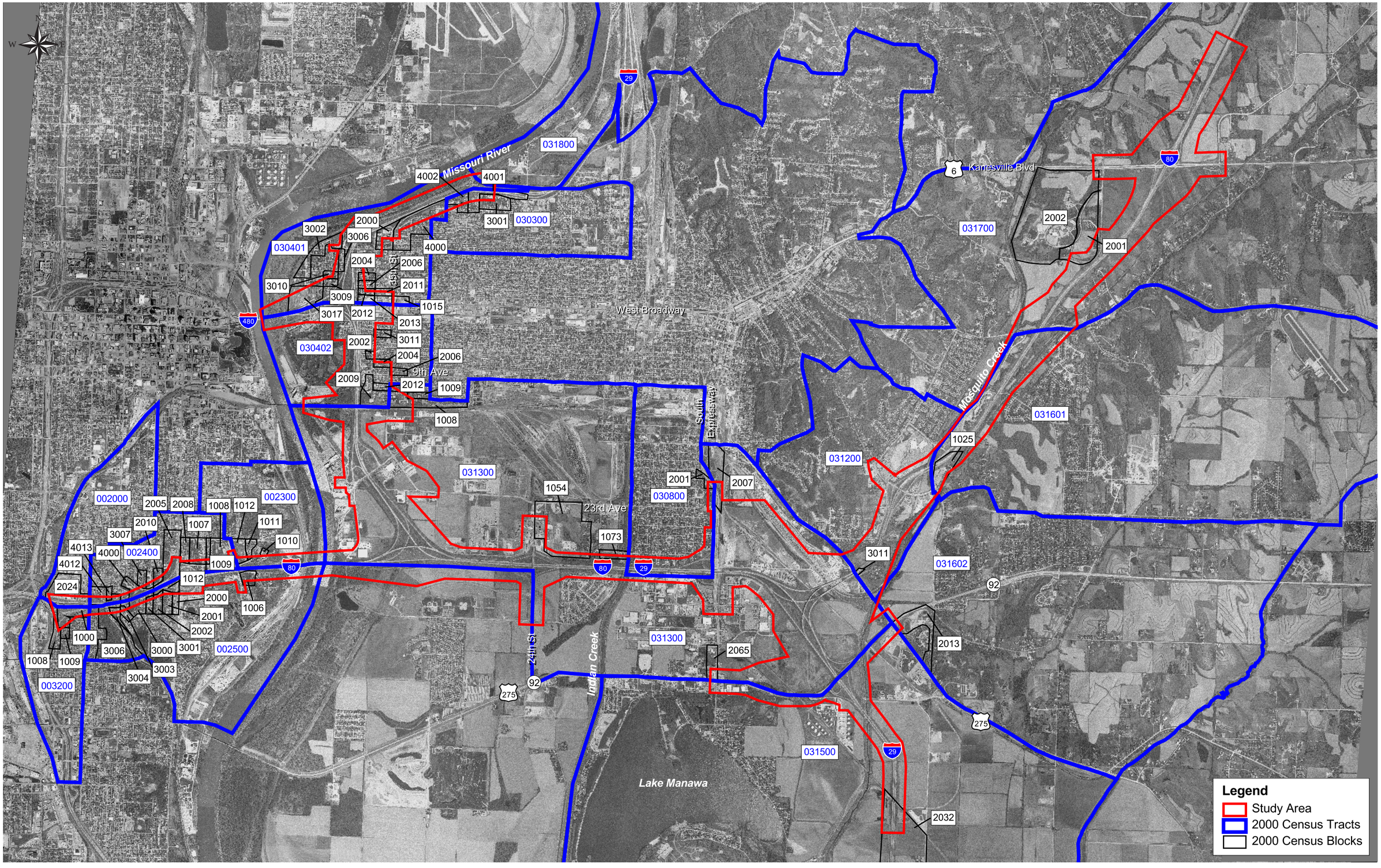


Figure 3-3
2000 Census Blocks

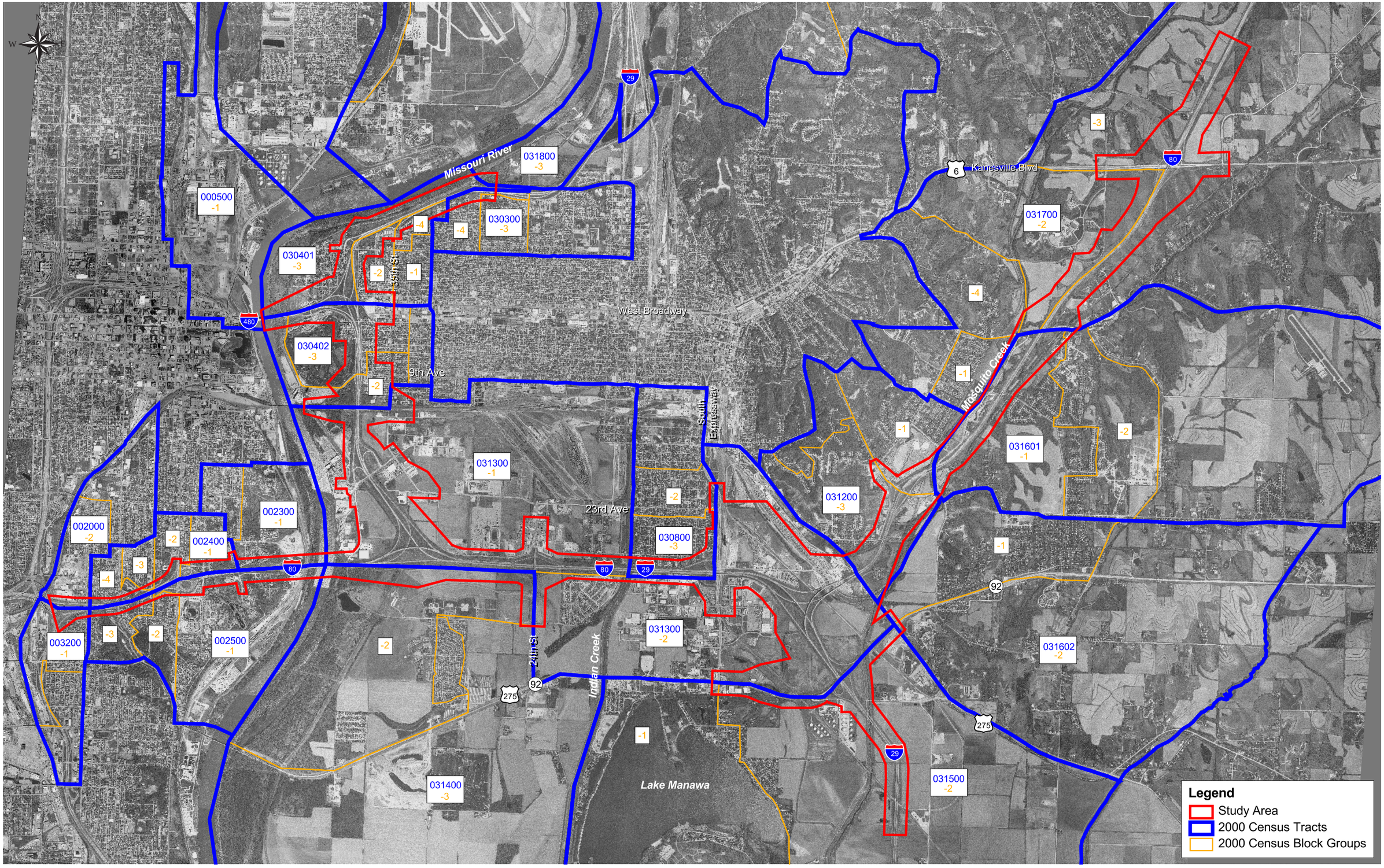


Figure 3-4
2000 Census Tracts and Block Groups

Section 4

SECTION 4

Environmental Consequences

This section describes the beneficial and adverse social, economic, and environmental effects of the No-Build and Construction alternatives and the mitigation measures that would minimize harm. This information is intended to allow comparison of the environmental and socioeconomic effects of the No-Build and Construction (Preferred) Alternatives.

The Preferred Alternative evaluated in this section is a composite of the mainline and interchange concepts that remain under consideration. The area of the composite represents the largest area of potential impact; however, the actual impacts will be much less than those detailed in this section when specific mainline and interchange concepts are selected during Tier 2. Within this section, the "area of potential impact" is considered for each resource. That area consists of the basic footprint of the concepts that remain under consideration plus an offset that would accommodate design as it progresses. The outer edge of the Preferred Alternative was offset by the following dimensions to provide flexibility for potential changes from geotechnical analysis, drainage design, minor design changes, and construction phasing:

- Typical offset—250 feet
- Developed areas, parks, areas along the existing interstate alignment—150 feet
- Directional flyover ramp movements—300 feet
- Cross streets—100 feet
- Edge of existing Missouri River Bridge—200 feet (north and south of the bridge); the width includes allowances to construct the new bridge north or south of the existing bridge because a decision for the bridge location has not been made to date.

Additionally, 500 feet were added to the anticipated profile tie-in points for cross streets. Minor adjustments were also made in specific areas where design issues are still open, such as the USCOE levee system south of Nebraska Avenue, a semidirectional concept for the West System Interchange, and a transfer road option on the East System Interchange. For the Nebraska portion of the project, the limits were tightened because of a higher level of certainty associated with the design.

The No-Build Alternative was retained for comparison to the projected impacts of the Preferred Alternative. The projects that constitute the No-Build Alternative, those defined in the LRTP, would also occur under the Preferred Alternative. However, it is likely that if the Preferred Alternative were not implemented, additional projects would be required to accommodate future demand. The resource evaluations in this section rely primarily upon existing and available data, with limited field reconnaissance for the resources affected by the alternatives (e.g., wetlands, parks, and cultural resources). Field reconnaissance was employed to verify and refine data obtained from GIS sources and resource agencies. Standard resource evaluations will be conducted as part of Tier 2. Since the Preferred Alternative is a composite, the potential environmental effects summarized herein are greater than the effects of the constructed project would be. Detailed Tier 2 environmental

evaluations of individual concepts will result in refinements and reductions in the impacts defined in this section.

Tier 1 studies have determined that the following resource areas would be affected by the proposed project: land use; ROW, including relocations and acquisitions; socioeconomics; wetlands; water resources; biological resources; cultural resources; potential 4(f) resources; regulated materials; and noise. Four resources (land use, wetlands, water quality, and threatened and endangered species) were identified as having possible indirect/cumulative impacts, which are discussed below in each aforementioned resource subsection.

Resources will be avoided or impacts minimized as reasonable; for resources where avoidance and minimization is not possible, FHWA supports mitigation that is cost-effective and is in response to a specific project impact. The potential mitigation measures discussed in this section are conceptual, with the final determination of the appropriate mitigation measures occurring in later project stages when impacts are better defined and with input from the public and resource agencies.

Potential mitigation measures were considered and presented depending on the types and magnitudes of impacts projected to occur. The level of analysis was limited to identifying unusual issues that would make environmental mitigation impractical or difficult. Specific mitigation locations have not been selected or identified in this Tier 1 Draft EIS. More detailed analysis of the mitigation of potential impacts would be performed as necessary during the Tier 2 process. Near the Tier 2 permitting stage, mitigation plans will be agreed upon by the DOTs and each respective resource agency with jurisdiction.

4.1 Socioeconomic Impacts

Transportation projects affect the communities that surround them. A broader look at socioeconomic impacts has become more common since the passage of NEPA in 1969. A socioeconomic impact assessment considers a project's positive and negative effects on the community. Socioeconomic impacts include a community's demographic and economic characteristics, land use, housing and commercial development, community services and facilities, transportation system, and agriculture. The analysis of socioeconomic impacts compares changes in the community's level of well-being before new development to those that are likely to occur afterward. Some socioeconomic impacts may be described quantitatively, but, because it is difficult to assign a numeric value to them, they are usually described qualitatively.

4.1.1 Social Impacts (Population and Households)

Steps were taken to define the impacts of the proposed project on future population and employment growth. These population forecasts show that the region is experiencing substantial growth. The population is projected to increase by 17.1 and 24.4 percent in Pottawattamie and Douglas Counties, respectively, by 2025, regardless of major transportation improvements.

4.1.2 Land Use Impacts

Land use decisions and transportation investments are closely interrelated. Land use often determines the demand for transportation facilities; however, transportation projects also

influence land use possibilities. Thus, both land use decisions and transportation investments affect the region's level of mobility, the viability of each transportation mode, and the overall efficiency of its transportation facilities and services. In addition, transportation investments can affect regional, community, and site-specific land uses.

NEPA, 42 USC 4231, requires that all federally sponsored, funded, permitted, or approved actions undergo evaluation to ensure that environmental considerations (such as land use-related impacts) are given due weight in project decision–making. Early coordination with local jurisdictions concerning land use issues is important for several reasons—it identifies local conditions that could affect design, obtains early support for the project, and ensures sufficient time for local review.

No-Build Alternative

Generally, the No-Build Alternative (Figure 2-1) maintains the present roadway network and would not affect overall land use. The existing roadway network would continue to define the circulation path for entering, leaving, and traveling within the communities; thus continuing to support the existing land use. Without any major improvements to the interstate system, improvements to several major arterials and local roads would be required over time. The edge of the roadway improvements could encroach on adjacent properties, and potential ROW impacts would be minor and scattered throughout the Study Area. Therefore, while some land would be converted to transportation use from some other use, no substantial changes in land use would be expected occur. All major development planned in the Council Bluffs/Omaha area would occur regardless of the CBIS improvements.

Preferred Alternative

The area's primary land use characteristics are not expected to change as a result of project construction. The Preferred Alternative is adjacent to residential land (with some parks and recreational facilities) and a mix of residential, industrial, commercial, and a small amount of agricultural land use with some parks and recreational facilities.

Although the Lauritzen Gardens, Henry Doorly Zoo, Rosenblatt Stadium, Deer Hollow Park, and Spring Lake Park are within or adjacent to the area of potential impact, most of the land along this corridor in Omaha is zoned for residential use. The Preferred Alternative is mostly within existing ROW. Consequently, existing land use would be minimally affected. Future land use in Omaha is not projected to change along this urban corridor.

Regardless of this project, land use in Council Bluffs is not expected to change dramatically, and all major developments planned near the project are independent of the proposed CBIS improvements.

The local governments manage the location and type of growth through zoning. Generally, the proposed future land use would be compatible with improvements to the interstate system. The Preferred Alternative would improve the area's existing and planned development, potentially improving the condition of the roadways, reducing traffic congestion and crashes, strengthening system linkages, and correcting design issues. However, changes in access at the I-29/I-480/West Broadway System Interchange could affect plans for a housing development in the area north of I-480, and reconstruction along I-29 near Avenue G in Council Bluffs could affect platting of a potential housing project (both discussed earlier).

Improvements in the area of the I-80 Bridge could affect the land immediately north of the interstate, including Lauritzen Gardens and property owned by Henry Doorly Zoo in Nebraska, as well as an existing industrial area north of the mainline in Iowa. Impacts would be avoided or minimized through the use of retaining walls.

Access along the interstate would be affected temporarily during the construction, due to temporary detours. However, permanent access changes could occur depending on the alternative selected during the Tier 2 process. Currently, I-29 traffic cannot directly access Broadway in Council Bluffs. An option for Broadway access from I-29 is under consideration in the Tier 1 process. However, Broadway access off I-29 would result in closure of access at other existing interchanges (possibly Avenue G and 35th Street). Consequently, a change in access would affect residents commuting in and out of the area, as well as access to businesses in the area. Closure of existing access at Avenue G and 35th Street would affect businesses such as Kwik Shop #527, Westend Service, and Community Christian School along Avenue G.

There may be a slightly greater out-of-distance travel time for some businesses. Loss of customers would be a hardship for owners of impulse businesses (i.e., convenience stores). However, with the exception of businesses clustered at interchanges, most businesses in the area of potential impact are destination stops and therefore unlikely to experience long-term declines in patronage. Both temporary and permanent indirect impacts could occur in the form of inconvenient access for existing residences and businesses within the Study Area. It is expected that the area most affected would be between I-29 north of the UPRR tracks. It is likely that fewer than 20 businesses near interchanges would be affected by rerouting at any one time because the project would be constructed in phases. To maintain efficiency of the proposed new system, access would be limited to critical interchanges. Tier 2 analyses would identify specific build alignments and analyze specific impacts caused by any interchange closure and street rerouting. Improving the safety of the interchanges—particularly those that experience numerous crashes such as the I-29/I-480/West Broadway System Interchange, the East System Interchange, and 24th Street Interchange—and upgrading the overall system to eliminate geometric issues and meet current design standards would likely benefit the daily operations of both destination and impulse businesses.

The CBIS Improvements Project would not result in overall changes in land use, although some land uses would be converted to transportation use due to the construction of the project. Coordination of the CBIS Improvements Project with representatives of the cities of Council Bluffs and Omaha is ongoing and will continue to ensure that roadway and master plans are updated for compatibility, as transportation improvements can make development sites more desirable to employers and employees. Roadway alignments would be finalized during Tier 2 studies and would involve input from city personnel.

Indirect and Cumulative Impacts

The indirect and cumulative analysis of the CBIS improvements included an assessment of indirect land use impacts or induced development, along with any growth management strategies or other actions to address such factors. Additionally, the analysis compared the timelines of other reasonably foreseeable major projects likely to occur within the period of the CBIS improvements to assess the combined effects of the projects on land use in the area. The cumulative impact assessment considered the baseline conditions of the corridor, and whether the development is stable or in a period of decline. This analysis considered the relationship to

the region's existing and planned land use, and determined whether regionally significant cumulative impacts could occur.

One purpose of the CBIS Improvements Project is to improve traffic flow within the existing transportation corridor. It is likely that future residential and commercial development could occur near the I-80/U.S. 6 Interchange as a result of this improved flow. The cities of Omaha and Council Bluffs and Pottawattamie County (the entire Project in Iowa is in Pottawattamie County, with a portion of the project area lying outside the current Council Bluffs city limits) have the authority to manage the location and type of growth in the Study Area through their local zoning jurisdiction. Projected land use changes have already been taken into account for potential development within the Study Area.

Because the Preferred Alternative could cause indirect impacts (such as out-of-distance travel) to future land use and existing and future development during the Tier 1 NEPA process, agency planners and local businesses and developers were consulted to understand existing and future land use needs. Further discussions to minimize indirect impacts would occur during Tier 2 studies as alignment selection and potentially affected business and future land use identification occur.

The last major relocations in the Omaha/Council Bluffs metropolitan area occurred during construction of the urban interstate system starting in the 1960s. The new roads disrupted existing transportation routes and long-established neighborhoods. According to MAPA, the number of houses constructed within Council Bluffs has steadily risen since the 1960s (MAPA, 2000). The ability to find comparable replacement housing within city limits to facilitate relocation is directly linked to the economic status of the individual household. A key factor is whether the local real estate and rental markets can provide relocated households with decent, safe, and sanitary housing near the Study Area. The City of Council Bluffs has a Comprehensive Housing Affordability Strategy to help ensure that affordable housing is available for low– and moderate-income families. It is desirable to relocate these households without creating unintended inflationary impacts on the local real estate and rental markets.

According to the 2000 Census, Council Bluffs had an approximately 6-percent housing vacancy rate (MAPA, 2002). To maintain sufficient affordable housing, Council Bluffs has recently developed subsidized housing in a new development (the Sunset Park North subdivision) as part of this program (*Omaha World Herald*, 2004). The Avenue G Viaduct project has involved relocating approximately 50 residents starting in 2001. The analysis determined that, based on 2000 sales of 856 homes, the demand for relocation into homes of any price range is about 20 percent of available supply (Iowa DOT, 2003). The Broadway Viaduct project (currently in the planning stage) in Council Bluffs will evaluate whether any residential or business relocations would be needed for that project. Changes in land use through relocations or displacements of businesses or residences require suitable land and facilities. As of 2000, there were 24,340 total housing units in Council Bluffs of which 1,451 (or 6.0 percent) were vacant. For this analysis, it is conservatively assumed that the number of total housing units and vacant units will increase in the future, but at a constant rate of 6 percent. This analysis assumes that the vacancy rate for business properties is similar to the housing vacancy rate.

Considering the vacancy rate and number of available housing units within Council Bluffs in 2000 and assuming similar rates in the future, there may be sufficient housing available for

relocations within or near the Study Area. The potential relocations would require approximately 20 percent of available units. It is assumed that similar proportions of vacancies available for business relocations would occur. It is anticipated that most of the displaced businesses would be successful in locating suitable alternative space. The CBIS Improvements Project would likely take approximately 20 years to complete. Consequently, acquisitions and relocations would not occur all at once, allowing time to efficiently plan the acquisitions and relocations. For example, acquisitions for the Avenue G Viaduct project have been occurring over several years and have not yet been completed. Actual relocations for the CBIS Improvements Project will be determined during Tier 2. At that time studies will include a more detailed analysis of relocation impacts and consider such factors as the type, value, and location of businesses and residences (including apartments) requiring relocation.

Mitigation

The CBIS Improvements Project would minimally affect existing and future land use in the Study Area and generally conforms to future land use adjacent to the interstate system. Expansion of the interstate system could result in spot impacts on future land use and development. Coordination with representatives of the Cities of Council Bluffs and Omaha is ongoing. This coordination will continue to ensure that roadway and master plans will be modified for compatible use of lands.

4.1.3 Relocation Impacts and Right-of-Way

When a proposed project involves the displacement of people or businesses, the Iowa DOT and NDOR must take steps to assess direct and indirect relocation impacts and determine how they can best be mitigated. Acquisition, relocation activities, and benefits in Iowa and Nebraska would comply with provisions of the Uniform Relocation Act (UA), as amended.

No-Build Alternative

The No-Build Alternative could require acquisition of some ROW to accommodate proposed widening along U.S. 6, Avenue G, I-80/I-29, U.S. 275, 24th Street and Madison Avenue as well as new roadways on the east side of Council Bluffs. The No-Build improvements are primarily limited to minor modifications along an already mature urban street network, so no major access or travel continuity issues are expected to arise as a result of these projects. The No-Build also includes construction of seven new two-lane roadways, which would require acquisition of ROW. However, these alignments have not yet been studied or designed so specific ROW requirements are unknown. These new roadways would be required under either alternative. If the interstate is not improved, ultimately, other major arterials (not currently in any transportation plans) would need to be widened to accommodate increased travel demand.

Preferred Alternative

Although the Preferred Alternative maximizes use of the existing ROW, some ROW acquisition would be unavoidable. The area of potential impact of the Preferred Alternative includes 1,121 acres of new ROW (25 acres in Nebraska and 1096 acres in Iowa). Tier 2 studies will refine the ROW need lines, based on the specific concept selected; less than 1,121 acres would ultimately be required because the area of potential impact includes more than one alignment concept in several locations. It is expected that between 300 to 350 acres would actually be acquired.

The additional ROW includes several types of structures: single-family homes, apartment complexes, and businesses. Figure 4-1 identifies areas where the aforementioned features are within the area of potential impact. Table 4-1 lists the estimated number of residences, apartment complexes, and commercial business buildings within the area of potential impact and provides a synopsis of some key features.

TABLE 4-1
Potential Property Acquisition

State	Residence	Apartment Complex	Business	Key Features
Iowa	287	8	61	Restaurant, church, school, pump station, strip mall, and storage complex included in business total. Five parking garages at apartment complexes not included.
Nebraska	10	0	1	Business impact are two maintenance buildings at Omaha Henry Doorly Zoo. Utility tower not included.
TOTAL	**297**	**8**	**62**	

In Nebraska, the additional ROW needed includes 10 residences and 1 park property (maintenance buildings for the Omaha Henry Doorly Zoo). A utility tower south of I-80 is also in the area of potential impact. In Iowa, 287 residences, 8 apartment complexes with 5 garages, 61 commercial buildings with 1 storage complex, 1 strip mall, 1 church (Seventh-Day Adventist Church), 1 school (Community Christian School), and 1 pump station could be impacted for additional ROW needs.

The average household size in Omaha and Council Bluffs is estimated to be 2.4 and 2.5 people, respectively (U.S. Census Bureau, 2000). Assuming 297 impacted residences, roughly 743 people could be displaced. Based on aerial photo interpretation and ground reconnaissance, the 8 apartment complexes were each assumed to consist of 24 units (actual size ranged from duplex to 48 units). Each apartment was estimated to house an average household size, for a total displacement of about 480 people. Therefore, the total residential (single family and multifamily) displacement is estimated at 1,222 people, including approximately 259 school-age children.

The commercial buildings potentially affected are small to medium enterprises (a restaurant, storage unit, gas stations, vehicle maintenance shops, tool and die shop, strip mall stores, etc.) with a conservative estimate of 25 employees per business[23]. Given the 62 business properties within the area that are potentially impacted by the CBIS Improvements Project, approximately 1,550 employees could be displaced because the businesses would need to move to another location. If the Community Christian School were impacted by the project, the staff would be displaced and approximately 30 students in kindergarten through twelfth grade and 55 children in daycare on a full– or part-time basis (Ballard, 2004) would also be displaced. These students may or may not live in the neighborhood. Therefore, it is likely that at least a portion of the children displaced by the school would be in addition to the 259 school-aged children displaced by residential relocations.

23 This number was derived by taking the midpoint of the smallest range reported by businesses: 0–50 employees.

The Preferred Alternative includes more than one concept throughout the corridor; therefore, the actual number of relocations and displacements is expected to be less than these estimated impacts. Selection of one alignment would be determined for each roadway segment considered in future Tier 2 studies, and the relocation and displacement impacts would be determined for those specific alignments.

Although the CBIS Improvements Project would ultimately require less than the aforementioned ROW and relocations, acquisition of some structures and ROW would be unavoidable to meet the needs of the proposed project. Acquisition of ROW and relocations would be fully considered in the Tier 2 studies. Also during Tier 2, ROW limits will be established and will include specific residential and business relocations.

Iowa DOT has programs and policies that enforce the amended UA, such as an early acquisition program to assist individuals who meet certain hardship criteria and policies to ensure comparable (equal or better) housing for residential relocations. Iowa DOT employs relocation assistance agents to explain options to displaced individuals. Displaced individuals are also eligible for payment of their moving expenses. Payments for replacement housing and reimbursement for certain expenses incurred while purchasing replacement housing are determined upon review of each relocation and the eligibility of the displaced individual.

The UA would cover relocations in both states; any primary residences, businesses, farm, or nonprofit organizations relocated or displaced by a transportation project in Nebraska can use the Relocation Assistance Program provided by NDOR. This program offers financial assistance and an advisory service. All individuals who are relocated or displaced can use the advisory service to assist them in finding replacement dwellings. Some individuals would receive financial assistance to offset the increased cost of buying or renting replacement dwellings.

Mitigation

No mitigation is needed.

4.1.4 Economic Impacts

This section provides more detail about the potential business displacements, and the estimated number of jobs that would be impacted under the Preferred Alternative, as well as the project's economic benefits in terms of improved mobility and access.

Regardless of major transportation improvements, employment in Pottawattamie and Douglas Counties is forecast to grow by 71,900 jobs between 2000 and 2025 (19.2 percent). Further, the Council Bluffs/Omaha area functions as a single economic unit, since people live and work on opposite sides of the Missouri River. Most goods and services in the area are provided by businesses located within Omaha and Council Bluffs and along the interstate system. Thus, ease of movement throughout the region is critical to economic success.

No-Build Alternative

The No-Build Alternative will not improve safety or access along the interstate system. As a result, the attractiveness of the corridor may be compromised for new businesses. While individual components of the No-Build Alternative could result in spot changes in property values (either increase or decrease), it is not expected to have an overall impact on property value or cost.

Preferred Alternative

As noted earlier, the Omaha/ Council Bluffs Metropolitan area functions as a single economic unit; thus, movement through the area is important to its economic stability. Significant upgrades to a transportation system typically result in improvements in traveler efficiencies as travel times or distances are reduced (NCHRP Report 456, 2001). More efficient travel would benefit the local economy by saving time and vehicle operational costs, as well as improving traveler safety. Travel efficiency also benefits the local economy within the cities. For example, changes in the transportation system could result in travelers spending money at different locations, especially at businesses that rely on drive-by traffic. Efficiency may lead to greater income and business growth, leading to an increase in the local tax base for the cities—ultimately making it possible to improve the quality of parks, education, and other local services.

The project's economic impacts also include the benefits of employment and earnings resulting from construction and increases in federal, state (Iowa and Nebraska), and local tax revenues due to construction operations. The temporary employment benefits resulting from project construction could be substantial for Council Bluffs and Omaha and would coincide with the project's construction period. Project expenditures would generate indirect and direct employment opportunities in industries that supply materials and overhead items to the project. Estimates of additional project-related work generated can be derived from the U.S. Department of Labor multiplier of 12.7 jobs per million dollars of construction. Many of the construction workers would reside in the Omaha/Council Bluffs metropolitan areas and nearby communities such as Glenwood, Iowa, but new indirect jobs would also be created as a result of project construction benefiting existing regional businesses and employees. These indirect jobs would benefit such industries as motor freight transport and warehouse, wholesale trade, and engineering-architectural services.

There are approximately 70 businesses that could be relocated as a result of the improvements. For these businesses, realtors in the area indicated that the commercial property market is active with many available properties, and that there would be ample opportunity to relocate any businesses affected by the proposed project. However, highway-dependent commercial establishments that are displaced (e.g., the gas station) may find it difficult to locate a comparable replacement property that offers similar location and access along the corridor. Overall, if the businesses are relocated to other available properties, the economic impacts are expected to be minimal.

While not displaced, other retail businesses and those dependent on accessibility and high visibility such as fast-food establishments and gas stations could be affected by the physical proximity to the interstate and resulting access changes by roadway improvements. Since the project consists of reconstruction of an interstate highway along existing alignment, very few businesses should face proximity impacts.

When existing roads are expanded or new ones are constructed, the market value of adjacent properties can be affected. Generally, fronting residential properties suffer decline in value because of increased traffic, noise, and air pollution. While no properties front the interstate, several are adjacent. Businesses, on the other hand, may increase in value because of improved access and mobility for customers and delivery vehicles. The improved access and mobility may also attract new businesses to the area. These businesses would be expected to increase the tax base, offsetting any losses by displaced businesses that do not relocate within

the Study Area. Thus, an improved interstate facility can be expected to positively affect the long-term tax base (NCHRP Report 456, 2001).

Property value impacts are expected to be negligible, as all potentially affected properties are adjacent to the interstate system. However, it is difficult to speculate on property value impacts, since properties must be sold to determine market value and then a comparison made to recent sale prices for similar properties.

Overall, increased travel efficiencies and economic growth related to construction jobs associated with the road improvements are positive outcomes of the Preferred Alternative. Business relocations are possible but as the affected properties could be expected to relocate in the Study Area, impacts on the tax base are expected to be minimal. Proximity impacts on properties are not expected to negatively impact the adjacent property values, as these properties are located near the existing interstate. It is likely that values would increase due to access and mobility benefits provided by the interstate improvements, which could actually improve the long-term tax base.

Mitigation

Economic development would be supported with the project; therefore, mitigation is unnecessary.

4.1.5 Environmental Justice

This section considers the potential for disproportionately high and adverse impacts on low-income and/or minority populations. Access and its effects on the low-income and minority populations in the Study Area, are addressed as part this discussion.

No-Build Alternative

The low-income and minority areas of Council Bluffs have indirect access from I-29 to and from West Broadway, which is the major roadway arterial in the area. Traffic, including truck traffic, travels through the residential areas to access I-29 at the partial interchanges at Avenue G and 35th Street. The heavy traffic on nonarterial residential roads creates a substantiated safety concern for the residents. In addition, the traffic on nonarterial roadways adds noise to residential areas. Maintaining the existing interstate system would perpetuate these impacts; however, the No-Build Alternative improvements, as described in MAPA's *2025 LRTP*, could also impact these populations. An environmental justice (EJ) analysis would have to be performed for each project in MAPA's *2025 LRTP* to determine if the access impacts are improved or if additional impacts are possible. The new roadways in MAPA's *2025 LRTP* would be required under either alternative. If the interstate is not improved, ultimately, other major arterials (not currently in any transportation plans) would need to be widened to accommodate increased travel demand.

Preferred Alternative

An EJ analysis was completed to determine whether the proposed project could exert disproportionately high or adverse impacts upon minority or low-income populations, and to assess if such impacts would be disproportionate relative to the total population. Under EJ guidance, if adverse impacts are found to be borne disproportionately by low-income and minority populations, an analysis must examine mitigation measures, offsetting benefits, and impacts of other system elements in accordance with *FHWA Order 6640.23, Actions to Address*

Environmental Justice in Minority Populations and Low-income Populations (USDOT FHWA, 1998).

The smallest level of census data analysis possible for the project are the block and block group levels. The numbers discussed in this section are representative of these units of measure. The EJ Study Area includes all census blocks and block groups adjacent to the area of potential impact.

Council Bluffs as a whole is primarily white/caucasian (92.5 percent) with 4.5 percent Hispanic, and 1.0 percent African American. Overall, the population in the EJ Study Area in Iowa is also predominantly white/Caucasian (93.6 percent) with a low percentage of mixed-ethnicity persons. Hispanics comprise 3.7 percent of the population and are the predominant ethnic minority group in the EJ Study Area.

Within the 27 block groups of the EJ Study Area in Iowa, 11 block groups have Hispanic or minority populations greater than that of Council Bluffs, see Figure 3-3. Block groups 30401-2, 30401-4, 31300-1, 30800-2, and 31500-1 have Hispanic populations that exceed the concentration in the City of Council Bluffs as a whole by more than 40 percent. In addition, the racial minority population is notable in 30401-2, 30401-4, 31300-1, and 31700-2. Within these 6 block groups, the total population of 6,356 is 8.0 percent Hispanic and 5.9 percent racial minority. These census blocks include those that are primarily residential, and others that include primarily industrial/commercial land uses.

The EJ Study Area in Iowa consists of 229 census blocks. The Hispanic population comprises 4.7 percent of the 10,408 individuals in this area. Within the Study Area in Iowa, 43 of the 229 census blocks had either Hispanic or racial minority population proportions above city averages. Census blocks with more than 10 people per block with twice the city average of Hispanics include: 30401-2000, 30401-2004, 30401-2012, and 031300-1008, and with twice the city average of racial minorities include: 30401-2000, 30401-4000, and 031700-2002.

The overall percentage of minorities in the Study Area within Nebraska is greater than in Iowa. Caucasians comprise 64.3 percent of the total population in block groups within the Study Area in Nebraska, a lower proportion than in Omaha. The proportion of Hispanics (28.6 percent) is higher than the city average and the proportion of racial minorities (7.1 percent) is lower than the city average. Within the Study Area, 27 of the 56 blocks in Nebraska had either Hispanic or racial minority populations significantly higher than city averages. Figure 3-3 shows the locations of the 27 census blocks and Table 3-8 provides data on the census block groups (10) and blocks (27) that were evaluated in Nebraska. Of these 27 blocks in Nebraska, 20 blocks had populations of more than 10 people per block and proportionally twice the city average of Hispanics. There were no blocks of more than 10 people with racial minorities twice the city average.

The 1999 median household income in the Iowa portion of the EJ Study Area is 43,686, which is greater than the median household income within Pottawattamie and Douglas counties and within Council Bluffs and Omaha (see Table 3-7). The EJ Study Area's median household income exceeds the U.S. Department of Health and Human Services 2004 poverty guideline of $18,850 for a family of four and all census block groups in the Study Area have a median household income above this level. However, 8 block groups were further analyzed because of the presence of low-income residents. Of the 3,390 households in these areas, 17.6 percent, or 597 households, are below poverty, compared to 10.2 percent of Council Bluffs. One block

group, 30401-4 (along the southeast side of I-29, northeast of the I-29/I-480/West Broadway System Interchange), has 37.9 percent of the households below the poverty level, 147 households.

The 1999 median household income in the Nebraska portion of the EJ Study Area is $29,662, which is below the median household income within Pottawattamie and Douglas counties and within Council Bluffs and Omaha (see Table 3-7). There are six census tracts and eleven block groups within the Nebraska portion of the EJ Study Area. Seven block groups in Nebraska have a higher proportion of households with incomes below the city average poverty rate for Omaha (18.3 percent). Three of these block groups (00500-1, 02400-2, and 03200-1) have more than 30 percent of households below the poverty level. However, the blocks of block group 00500-1 that are within the Study Area do not include any households. As shown in Figure 3-3, the block group 02400-2 is located north of I-80 near the 13th Street Interchange and block group 03200-1 is located in the Highland Park Area south of I-80 and east of U.S. 75.

As stated previously, some of the block groups that have potential EJ populations have more commercial/industrial development than residential units. Block groups 30401-4, 30401-3 30401-2, near the I-29/I-480/West Broadway System Interchange, do have concentrations of low-income and/or minority populations combined with sizable residential development. There would be some direct impacts in the form of displacements to this area (See Subsection 4.1.3). However, when evaluating the entire system under consideration at Tier 1, the project impacts are not disproportionate.

In addition, providing access at West Broadway is still under consideration and, if ultimately provided, these populations could be affected. The multiple concepts under consideration for providing access at Broadway would eliminate the partial access at some interchanges and provide full access at others (See Subsection 2.5.1). The changes aim to reduce the amount of cut-through traffic from local roads, and concentrate this traffic on arterials intended to accommodate such volumes. This change should improve both the safety and quality of life for those living near the interstate. While the aforementioned changes in interchange configurations could result in spot increases in traffic noise, the overall effect would not be significant or disproportionate, and removing traffic from local roads could result in a net decrease in traffic noise.

Overall, although the project could result on some adverse impacts to low-income/minority populations, the overall project is in compliance with the guidance of the Environmental Justice legislation. In addition to impacts on the aforementioned communities, benefits to those populations would also occur. Benefits could include increased job opportunities (Subsection 4.1.3), improved mobility, improved accessibility to certain destinations within the community, and improved safety for the affected population. The overall effects on these populations would be positive.

The proposed action will not exert high or disproportionate adverse impacts upon minority or low-income populations. Instead, improving access will benefit all residents throughout the Study Area. While some impacts may be borne by minority and low-income residents, the level of impact would not be expected to be disproportionately high, and therefore would not be considered an EJ impact as defined by the EO.

The proposed project is in compliance with EO 12898 and FHWA Order 6640.23. In accordance with the EO, the project's public involvement activities were open to all members of the public regardless of race, religion, income, or handicap.

Outreach during Tier 1 used a general corridor-wide approach. The meetings were advertised in both English– and Spanish-language newspapers to maximize the likelihood of informing as many affected persons as possible.

As Tier 2 projects begin, more focused, neighborhood specific outreach may be utilized as appropriate to address impacts on the aforementioned pockets of low-income and minority groups. If necessary, community leaders will be utilized to help disseminate information. Minority-owned businesses, and significant ethnic businesses will also be identified.

Mitigation

It is not anticipated that mitigation would be needed. However, specific communities of concern exist within the corridor and impacts there would be mitigated to the extent practicable and allowable by law, rule, and code.

4.1.6 Neighborhoods, Community Services and Facilities

This section describes impacts on neighborhoods, community services, and facilities such as schools, churches, cemeteries, police and fire departments, city and township halls, hospitals, and public utilities.

No-Build Alternative

The No-Build Alternative would not improve quality of life or community cohesiveness. Since most projects associated with the No-Build Alternative consist of improvements to a mature urban street system, potential impacts are expected to be minor. Some access impacts could be associated with road widenings, but they would be dispersed across the region. In the area around Broadway where nonlocal traffic is using the local road system to access the interstate, continued noise and safety issues would affect quality of life and community cohesiveness. The proposed new roadways occur in undeveloped areas and might improve access and emergency response times, but would not fundamentally affect neighborhoods or community services and facilities. As traffic accidents are expected to increase without improvements to the CBIS, it is likely that with the No-Build Alternative alone, there would be an increase in demand along the interstate system for emergency services.

Preferred Alternative

Many attributes contribute to the quality of life of neighborhoods in Council Bluffs and Omaha, including school quality, availability and proximity of recreational lands, common religious institutions, educational institutions, transportation access, and circulation. Quality of life is also influenced by the surrounding physical environment. For more information about air, visual, and noise impacts, see Subsections 4.2.9, 4.2.10, and 4.2.13. Community cohesion—the sense and strength of neighborhood identity felt by residents for the people and facilities of the surrounding community—is another aspect of quality of life.

Within the area of potential impact, numerous local roads provide access to homes and businesses. Since the project consists of improving existing transportation facilities and most construction would occur within existing ROW, access and continuity would be minimally affected. Potential access modifications, such as those at Broadway could impact residents.

However, the intent of the changes is to divert traffic from local roads onto arterials, ultimately facilitating movement and improving safety. If access is not provided at Broadway, some local neighborhood streets could continue to experience increased traffic. This, combined with the housing displacements of the Preferred Alternative, may diminish community cohesion.

One church (the Seventh-Day Adventist Church) and one school (Community Christian School) have improved property within the area of potential impact. Consequently, it is possible that both structures could be displaced by the project, depending on the concept selected in Tier 2. Religious institutions such as the Community Christian School and the Seventh-Day Adventist Church can enhance community cohesiveness. The church and school could be utilized by community members who live within walking distance. Displacement of the church or school could impact the neighborhood's community cohesion. If the properties are not displaced, access to the facilities could be affected during and subsequent to construction.

While some community institutions may be displaced, lessening community cohesion, neighborhoods severed by construction of the interstate highway would remain unchanged. The Preferred Alternative would not isolate or change the boundaries of any neighborhood association in Nebraska. There are no neighborhood associations in the Study Area in Council Bluffs, but impacts on community cohesion could occur in the area between the UPRR Bridge and the I-29 25th Street Interchange, see Figure 3-2.

A notable impact on community cohesion could occur in the area between the UPRR Bridge and the northern I-29 project terminus, where changing Avenue G/I-29 access and potentially displacing numerous residents could noticeably alter the neighborhood. Reducing the number of housing units in the area (due to acquisitions) could possibly reduce the number of school-age children attending the Community Christian School. The relocation of children and families would change the community interaction of the relocated families as well as community cohesion.

The transportation improvements would not directly impact health care or emergency services, as none are located within the area of potential impact. However, one of the purposes/needs of the improvements to the CBIS is to improve safety. As a result of the safety improvements, there should be a reduced demand on emergency services responding to crashes along the interstate. Further, the access improvements would result in long-term improvements in emergency response times and better access to health care facilities in the region. During construction, temporary detours could cause limited delays to service access.

The aforementioned community impacts are based on the initial Tier 1 evaluation of the CBIS Study Area. Based on the current analysis, community cohesion impacts would likely occur but would differ depending on the specific concept selected for each Tier 2 segment.

Mitigation

Roadway alignments would be finalized during Tier 2 studies and would involve input from city personnel to identify opportunities to minimize or mitigate social impacts. City officials have an understanding of the social fabric of communities and are likely to better identify techniques that would provide the most meaningful mitigation. In addition, public input would be sought through a continuous and comprehensive public involvement program.

Detours and access delays would be handled through traffic control plans in later stages of project development.

4.1.7 Considerations Relating to Pedestrians and Bicyclists

This section describes impacts on bicycle and pedestrian facilities including various systems of sidewalks and trail facilities maintained by the Papio-Missouri River Natural Resources District (Papio NRD), the City of Council Bluffs, the City of Omaha, and Douglas County.

No-Build Alternative

The No-Build Alternative would include changes to the roadway network within the metropolitan area of Council Bluffs and Omaha, and may affect its bicycle and pedestrian trail system. Each of the other transportation projects in the No-Build Alternative would need to account for impacts on pedestrian and bicycle facilities in planning roadway alignments.

Preferred Alternative

Construction of the Preferred Alternative could cause temporary rerouting of some existing trails, causing an inconvenience for trail users. However, there would be no long-term impacts on trails and the trails affected during construction would be replaced. There may be limited instances within the area of potential impact where trails must be relocated.

Mitigation

No mitigation is needed. Access to, and continuity of, the trails will be maintained during and after construction.

4.1.8 Transportation Impacts

Proposed improvements to the CBIS corridor have been developed to address the interstate's safety and operations, as well as access to the local road network and other modes of transportation. This section discusses the overall transportation impacts of the Preferred and No-Build alternatives.

No-Build Alternative

The No-Build Alternative consists of both the construction of new roadways as well as improvements to existing ones. These projects would result in overall changes to the transportation system. The project may affect connectivity between roadways and alternate modes of transportation. Effects may be adverse or beneficial; each of the transportation projects in the No-Build Alternative would need to account for these transportation impacts in planning their roadway alignments. Generally, the capacity and safety issues associated with the interstate system will not be addressed, and roadway operations and conditions will continue to deteriorate.

Implementation of the No-Build Alternative would improve access to the local road system by providing more storage capacity for vehicles exiting the interstate, allowing them to be removed from the mainline and reducing the potential for them to impede traffic flow. However, as traffic volumes continue to increase, these diversions would not be sizable enough to improve interstate operations in terms of LOS.

Preferred Alternative

The Preferred Alternative would improve the characteristics of the most congested and critical components of the transportation network—the interstate system. Implementation of the Preferred Alternative would add capacity along the mainline, benefiting automobile traffic, as well as other modes of transportation. The improvements would increase the reliability of bus service through the project corridor allowing smoother traffic flow with less congestion, thus reducing impacts on bus schedules. The entrance and exit ramps would be improved by eliminating design issues in the vertical alignments of the ramps, as well as elimination of some left-hand entering and exiting. The Preferred Alternative would also improve access to air, water, and rail service. With smoother flow of traffic, freight transferred between trucks and rail cars, airplanes, and barges could more readily meet scheduled transfers.

Mitigation

No mitigation is necessary since the impacts are positive.

4.1.9 Farmland Impacts

This section highlights the major agricultural effects that could occur from the implementation of the Preferred Alternative, including farmland losses, impacts on special-status farmland or farms, farm production losses, and impacts on farm operations.

No-Build Alternative

The No-Build Alternative consists of roadway improvements within an urban area. Specific road improvements would need to consider impacts on farmed parcels.

Preferred Alternative

As stated in Subsection 3.1.8, an NRCS Form AD1006 is not required for this project to comply with the FPPA.

NRCS soil data from 1998 was collected as part of the GIS database and was used to assess farmland impacts. The project would not result in substantive impacts on farmland, which exists only in the area of the West System Interchange and near I-80 and U.S. 6, see Figure 3-2. Impacts would consist of strip takings and would not result in major operational impacts on farming operations at those locations. Farming is declining in the area due to development and the trend is expected to continue regardless of the project.

Mitigation

No mitigation is needed.

4.1.10 Bridge Impacts

Construction of the Preferred Alternative would directly affect the Missouri River. No physical impacts are anticipated on the channel of the Missouri River except those related to bridge pier construction. The changes in the pier structure associated with the new bridge should not result in fundamental changes to the Missouri River.

During Tier 2, the bridge alignment will be further developed to avoid or minimize impact to natural resources, as reasonable. Design features may be adjusted to minimize fill, and reduce impacts on riparian and aquatic communities. The decision on the location of the twin span

(i.e. north or south of the existing bridge) will be determined in Tier 1 and documented in the Final EIS; however, the specific alignment and appropriate design features will be determined as part of Tier 2.

Although most of the riparian areas near the proposed structure were previously altered during construction of the existing I-80 Missouri River Bridge, the Preferred Alternative would disturb the area parallel to the impacted area. Riparian areas adjacent to the bridge would be subject to minor impacts due to tree removal for bridge construction.

Since the Missouri River provides critical aquatic habitat as well as avenues of wildlife movement, as necessary, detailed studies will be conducted in Tier 2 to identify wildlife habitat. Impacts are anticipated to be minor as the improvements associated with the Preferred Alternative are adjacent to a previously disturbed area and existing structure. The construction of a new bridge from levee to levee does however have the potential to impact endangered species; bald eagles, pallid sturgeon, lake sturgeon, and sturgeon chub habitat may exist within the area of potential impact. Bald eagles migrate through and roost along the Missouri River. The removal of trees along the Missouri River for construction of an additional I-80 bridge would be kept to a minimum to lessen the loss of potential bald eagle roost locations in the area. The pallid sturgeon, lake sturgeon, and sturgeon chub are all found in the Missouri River and may travel through the area of potential impact. Due to their migratory nature, it is likely that these species would avoid the construction area and would not incur long-term impacts. The least tern and piping plover would likely not be impacted by the project, as no suitable habitat has been discovered. Cliff swallows, while not threatened or endangered are protected by the Migratory Bird Treaty Act. Bridge construction could affect colonies of cliff swallows nesting on the existing bridge, if present. A survey of potential habitat is recommended during Tier 2 studies to determine the presence of this species. If nests are present, construction must be timed to avoid impacts on occupied nests. If disturbance of the nests cannot be avoided, the USFWS must be contacted for guidance. Specific impacts on threatened and endangered species are discussed in Subsection 4.2.6.

The proposed structure would cross approximately 1,000 feet of the 100-year floodplain of the Missouri River. Approximately 750 feet are associated with the I-80 bridge and 250 feet are associated with the approach for the I-480 bridge; see Figure 3-1. Potential floodplain impacts, possible mitigation measures, and necessary permitting issues are discussed in Subsection 4.2.4. The appropriate mitigation measures will be determined during Tier 2 efforts.

Within the river, water quality impacts could occur from one or more of the following activities: construction of piers, construction of the bridge, and hydraulic fluid or fuel spills from work barges and construction equipment. Impacts on water quality from the shoreline include those that could arise from erosion of exposed soils and from contamination by hydraulic fluid or fuel spilled from construction equipment. Bridge construction, through disturbance of the ground surface, could possibly create minor sediment suspension in the Missouri River.

The installation of piers in the Missouri River during construction could displace river channel sediment. Of concern is the potential lead contamination from the Omaha Lead Site discussed in Subsection 4.2.2. Recent testing determined that the Missouri River sediment was not contaminated. However, a Tier 2 study addressing an expanded I-80 Missouri River Bridge should consider the impacts of disturbing potentially contaminated sediments.

Coordination with the USCG, which is serving as a cooperating agency on the preparation of this Draft EIS, began during early coordination and continues.

Although bridge construction may have short-term impacts on Missouri River water quality, the public water supply would not be affected. Any impacts on Missouri River water quality resulting from construction of the bridge would be minor and of short duration; ending shortly after project completion. No long-term impacts on or modification of the Missouri River are expected; its flow would remain unchanged.

Energy consumed during the construction of the new bridge would be offset by shortening the travel times across the river. The savings in operational energy requirements would, in the long term, more than offset construction energy investments and would result in a net savings in energy usage, see Subsection 4.2.12 for additional details.

In general, while the Construction Alternative results in additional resource impacts, construction of the new structure would not result in any effect on land use/relocations, economics, community facilities/services, EJ, transportation, farmland, geology, Section 4(f) resources, wetlands, air quality, noise, groundwater, cultural resources, regulated materials, or visual resources. Additionally, the changes in the I-80 Missouri River crossing would not hinder the educational opportunities and future scientific study of the water body.

4.1.11 Navigational Impacts

Vessels engaged in emergency operations, national defense activities, and channel maintenance would be able to operate in the Missouri River through the proposed project site during construction and after the new bridge is built. Coast Guard cutters (such as the Gasconade, which is responsible for aiding navigation along the Missouri River from Sioux City, Iowa, to Glasgow, Missouri), Coast Guard Buoy Tenders, law enforcement boats, fire rescue vessels, fuel barges, and work barges operate in this region of the Missouri River. No impacts on such vessels are anticipated.

No vessels at the national or local level that are involved in emergency operations are based at the Port of Omaha; therefore, the bridge is expected to have little or no impact on safety operations. There are no local harbors of refuge in the area of potential impact. Tier 2 planning and design will ensure that dikes, channel bottom dikes, and bank revetments are maintained.

There would be no change in the present and prospective ability of recreational craft to navigate this portion of the Missouri River. Fishing boats; yachts; and casino, tour, and outboard motor boats would still be able to traverse the Missouri River at the proposed project location.

The constructed bridge would not block access to local service facilities such as repair shops and fuel stations. The Port of Omaha, the only service facility in the project vicinity, would be unaffected by the proposed project. There are no river bends, additional structures or other features (lightering areas, dockages) within ½ mile of the proposed bridge. The nearest structures are located approximately 1 mile south (South Omaha Bridge) and 1.5 miles north (I-480 bridge). There are no hydrologic or atmospheric conditions that could pose additional hazards for vessels passing through the proposed structure.

Tier 2 design will ensure that the structure, as constructed, will consider all factors necessary for the safe and efficient passage of vessels; therefore, no detours or alternate routes will be

required. Shipping, recreational, and safety operations will continue during the construction phase of the project. During Tier 2, the USCG will be consulted regarding the required horizontal clearances over the Missouri River for this project.

4.2 Environmental Impacts

This section considers potential impacts on environmental resources—physical, chemical, and biological. The impacts are based primarily on existing data with limited field verification.

4.2.1 Geology, Soils, and Mineral Resources

No-Build Alternative

Under the No-Build Alternative some short-term demand for mineral resources may occur that would not affect bedrock. Some impact to surface geology/topography would occur with the construction of the No-Build projects. Erosion is possible during construction activities but would be minimized using standard erosion control practices (See Subsection 4.2.14).

Preferred Alternative

No operating mineral/material resource businesses would incur long-term impacts due to the Preferred Alternative. However, any construction project could increase short-term demand for (and sales of) mineral/material resources within Pottawattamie and Douglas Counties in the short-term (during construction). Upon completion of construction, demand and sales would be expected to return to previous levels.

The erosion potential of soils within the area of potential impact was evaluated using the NRCS 1993 soils data. Soil associations along construction areas were identified and the erosion potential determined from tables contained within the published soil survey.

The Preferred Alternative would not be expected to affect the area bedrock. Some impact to surface geology and topography would occur during construction including excavating, grading, and filling the near-surface deposits. These effects would include changes to surface soils in the construction zone that would increase soil compaction and effectively decrease hydraulic conductivity. Construction would decrease the erosion resistance of soils with the removal of vegetation. The Loess Hills, a distinctive topographic region in the Study Area, could also be impacted by construction of the project. The Loess Hills are further described in Sections 3.2.1, and 3.2.5. Standard erosion control practices would be implemented (see Subsection 4.2.14) to limit erosion potential. Impacts on soils and mineral resources are limited and short term.

Mitigation

No mitigation is needed.

4.2.2 Water Quality Impacts

Water quality impacts can result from the construction, operation, and maintenance of roadways. A summary of water quality impacts within the Study Area associated with the CBIS Improvement Project follows.

No-Build Alternative

No groundwater or surface water impacts are expected under the No-Build Alternative, although minor additional runoff may occur because of lane expansion and construction of new roadways in MAPA's *2025 LRTP*. Additional runoff, particularly due to the operation and maintenance of the expanded roadway, may have some temporary effects on surface water. During construction of the new roadway south of Kanesville Boulevard, improvements to U.S. 275 south of Iowa 92, and construction of new two-lane roadways east of Council Bluffs would result in temporary construction impacts on Mosquito Creek associated with new creek crossings. The new two-lane roadway northeast of Lake Manawa would cross a small unnamed creek, and U.S. 275 between the Missouri River and I-29 would require crossing Indian Creek.

Preferred Alternative

Groundwater Resource Impacts. This analysis focuses upon potential effects of the project alternatives on municipal and private water supplies. No measurable change to the available groundwater supply is expected for the Preferred Alternative; the additional impervious area associated with the project alternatives would represent a small reduction in recharge area.

Wells near the proposed project alternatives have the potential to be affected by contamination from roadway runoff. The potential for contaminating groundwater supply wells depends upon well construction, proximity to potential sources, and geological conditions. The project is not likely to measurably affect groundwater quality in municipal wells. The Council Bluffs municipal well system is more than 0.5 mile from the interstate system and would not be adversely affected.

Private wells are associated with residential subdivisions or individual properties and are typically finished in glacial drift (sand and gravel) at depths of 100 feet or less. They could experience increased levels of roadway runoff contaminants if improperly cased or hydraulically connected to the highway drainage system. Private groundwater wells in the Study Area are typically shallow (less than 100 feet deep) and associated with agricultural and residential uses at properties not within the city limits. Of the 13 private wells in the Study Area, 6 could be impacted by the Preferred Alternative. One of the six wells is capped, one is of unknown depth, and the remaining wells are 90 to 120 feet deep. Comparison of the well locations to property parcel data suggests that three of the six wells are actually within existing ROW and, therefore, are not considered to be impacted by this project. The location of these wells has not been field-verified; field verification of the precise locations would be performed during Tier 2.

Groundwater wells within the potential impact area could be filled, closed, and capped if they are within the ROW. As noted previously, it is anticipated that few wells would need to be closed. Owners would be compensated for the loss of the well.

Water Body Modification and Surface Water Impacts. Within the area of potential impact, three waters of the U.S. (excluding wetlands) would be crossed by bridge or culvert. The Missouri River is the largest water body within the Study Area. The CBIS project would potentially affect 1,000 feet of the Missouri River. While there is only one Missouri River crossing of 750 feet, approximately 250 feet of the river may be impacted from improvements to the I-480 Bridge approach. Two additional surface water

resources, Indian Creek and Mosquito Creek, are part of the Missouri River Drainage Basin and could be crossed one or more times by the CBIS project. Within the Study Area, a channelized part of Indian Creek would be crossed once, crossing 700 feet of channel. Mosquito Creek and its tributaries would be crossed up to eight times and potentially affect 7,000 feet of channel. No lakes are within the area of potential impact, but several ponds are potentially impacted, some associated with wetlands. These ponds could possibly be fully or partly filled during the CBIS Improvements Project. However, only a few ponds would be affected.

Construction of the bridge and approaches would cause temporary direct adverse impacts at three locations, Indian Creek, Mosquito Creek, and the Missouri River. Mosquito Creek would be temporarily affected by the installation of culvert systems in several locations. Within the river, water quality impacts could occur from one or more of the following activities: construction of piers, construction of the bridge, and hydraulic fluid or fuel spills from work barges and construction equipment. Impacts on water quality from the shoreline include those that could arise from erosion of exposed soils and from contamination by hydraulic fluid or fuel spilled from construction equipment. Roadway construction, through disturbance of the ground surface, could possibly create minor sedimentation in Indian Creek, Mosquito Creek, and the Missouri River.

The installation of piers in the Missouri River could cause displacement of river channel sediment. Coordination with the USCG, which is serving as a cooperating agency in the preparation of this Draft EIS, began during early coordination and continues. The Omaha Lead Site is a National Priority List (NPL) site that has potentially affected Missouri river sediments. The Omaha Lead Site area of investigation is approximately 20 square miles and extends from "L" Street to Ames Avenue and from 45th Street to the west side of the central business district and the west bank of the Missouri River north and south of the central business district in east Omaha, Nebraska. Due to the CBIS Improvements Project's proximity to this area, in particular the I-80 Bridge crossing, concerns were raised about potential contamination of sediment from the Omaha Lead Site. The Missouri River sediment was tested as part of the development of a proposed pedestrian bridge. The results indicate very minimal, if any, impact from the Omaha Lead Site property to the sediment in proximity to the I-80 Bridge crossing (Iowa DOT; June 29, 2004).

Construction would result in an increase in impermeable area. On the roadway, various pollutants, such as oil, soil, and metals, would be expected to run off from roads into the Missouri River, Indian Creek, and Mosquito Creek during storm events. Sodium chloride (deicing salt) is used during icy conditions and the increase in lanes under the Preferred Alternative may result in a minor increase in total salt loading. However, the policy for road maintenance efforts is to use ice control only as needed and with the minimal amount of control materials to reduce the possible negative effects of salt use. Consequently, runoff impacts caused by the Preferred Alternative would be no greater than for other roadways in the area and would occur in areas already affected by runoff from the interstate system.

As described in FHWA's *Effects of Highway Runoff on Receiving Waters – Volume IV Procedural Guidelines for Environmental Assessments* (Dupuis, 1985), there are common highway runoff pollutants that could 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; and salts, which can affect aquatic life toxicity and drinking water taste. While specific water

samples were not taken, Table 4-2 lists common highway runoff pollutants and their primary sources.

Water resources would be minimally affected by construction and operation of the Preferred Alternative roadway system. The magnitude of the impacts would be affected by the following factors:

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

TABLE 4-2
Common Highway Runoff Pollutants and Their Primary Sources

Pollutants	Primary Source(s)
Particulates	Pavement wear, vehicles, atmosphere, maintenance of roadway
Nitrogen, phosphorous	Atmosphere, roadside fertilizer application
Lead	Tire wear, lubricating oil and grease, bearing wear
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel highway structures (e.g., guard rails), moving engine parts
Copper	Metal plating, bearing wear, moving engine parts, brake lining wear, fungicides and insecticides applied by maintenance operations
Cadmium	Tire wear, insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline (exhaust), lubricating oil, metal plating, brake lining wear, asphalt paving
Manganese	Moving engine parts
Cyanide	Anticaking compound used to keep deicing salt granular
Sodium, calcium	Deicing salts, grease
Chloride	Deicing salts
Sulfate	Roadway beds, fuel

Source: T. V. Dupuis et al., *Practitioner's Handbook: Assessment of Impacts of Bridge Runoff Contaminants in Receiving Waters.* Prepared for National Cooperative Highway Research Program (July 2001).

Indirect and Cumulative Impacts

As the CBIS project would result in runoff to surface waters, water resources were considered for their potential indirect and cumulative effects.

The Missouri River, Indian Creek, and Mosquito Creek are notable surface water features in the Study Area. Lake Manawa (south of the Area of Potential Impact), Big Lake (northeast of the Study Area), and Carter Lake (northwest of the Area of Potential Impact) were each

formed in the late 19th century when the Missouri River shifted course during a flood. Big Lake has reduced in size due to levee construction and drainage of water away from the Loess Hills. Lake Manawa is fed by Mosquito Creek via a 48-inch pipeline; other sources include rainfall, runoff, and groundwater. Carter Lake is hydrologically isolated from the Study Area because it is upgradient and west of the Missouri River. Big Lake is situated well outside the Area of Potential Impact, and would not be adversely affected by the project. Ponds in the area of potential impact, some associated with wetlands, could possibly be fully or partly filled during the CBIS Improvements Project. However, only a few ponds would be affected. Consequently, the analysis of cumulative impacts focuses on the river and creeks.

Prior to 1900, the Missouri River channel was uncontrolled. Efforts to stabilize the river and to provide a navigation channel started in the early 1900s. Since 1912, seven separate acts of Congress provided for the construction and maintenance of a navigation channel and bank stabilization works. The collection of projects constructed and maintained by the USCOE is known as the "Missouri River Bank Stabilization and Navigation Project."

Indian Creek, which mainly flows in a concrete flume and tunnel constructed in the 1930s, is fed by natural springs near its headwaters but receives considerable urban runoff from the Council Bluffs' stormwater drainage system. Mosquito Creek is a small warm-water stream that meanders through the Study Area's eastern portion.

The construction of the CBIS Improvements Project (including the crossing of Mosquito Creek, Indian Creek, and the Missouri River) could have temporary impacts on water quality that would be further removed from the project ROW. However, the distances from the bridge locations of Indian Creek and Mosquito Creek to their confluence with the Missouri River are each approximately 3 miles and the indirect impacts of construction along these two creeks on the Missouri River would be negligible.

The construction of the I-80 Bridge crossing the Missouri River could have additional temporary impacts on water quality. Also, the tributaries to the Missouri River in the Study Area (primarily Mosquito Creek and Indian Creek) could see a temporary increase in sediment load during and shortly after bridge construction and could cause additional sediment loading in the Missouri River south of the Study Area.

The capacity of the Missouri River, Mosquito Creek, and Indian Creek to handle additional stresses, including the possible increase of surface water conveyance and sedimentation, should be sufficient given the amount of disturbance and watershed size. The Tier 2 studies will include hydrologic and hydraulic analyses to further evaluate potential water quality impacts.

The Missouri River has been the subject of controversy regarding the quantity and timing of flows. Although the construction of dams, levees, and bank stabilization projects has decreased the potential for floods and bank-collapse events, it has also decreased the variety of the river environment. There are restoration and mitigation plans currently being implemented (e.g., Council Bend restoration project) to create backwater areas and natural flows that would result in a more varied environment receptive to wildlife and aquatic species.

The most commonly identified sources of stresses to surface water quality are modifications to stream habitats and pollutants (especially silt) delivered to rivers and streams in agricultural nonpoint source pollution. Less commonly–identified sources of impairment

include industrial point sources, municipal point sources, combined sewer overflows, urban nonpoint source runoff, resource extraction (e.g., mining), and other natural and unknown sources. On the roadway, various pollutants, such as oil, soil, and metals (as discussed earlier), would be expected to run off from roads into the Missouri River, Indian Creek, and Mosquito Creek during storm events. Impacts on Lake Manawa from interstate runoff would be negligible because the only potential timeframe for road runoff to reach the lake is in the fall when a pipeline is used to divert some water from Mosquito Creek to Lake Manawa. The CWA addresses water issues, including stormwater management, to limit water quality degradation.

The *Missouri River EIS, Master Water Control Manual, Review and Update* (Study) (USCOE, 2001), identified a preferred alternative for reshaping the Missouri River. With the implementation of these processes along with future protection of the Missouri River and the Missouri River basin, the water quality of the area is expected to improve. Future development of areas adjacent to both Indian Creek and Mosquito Creek would continue to affect water quality in the area by increasing erosion and, subsequently, sediment loading of the creeks. Other impacts on water quality would include runoff from parking lots carrying oil and other organic materials, and additional nutrients from maintained lawns. Excluding tributaries, Council Bluffs includes approximately 12 miles of the Missouri River, 12 miles of Mosquito Creek, and 6 miles of Indian Creek.

Impacts on the Missouri River, Indian Creek, and Mosquito Creek (all Waters of the U.S.) due to the construction of the CBIS Improvements Project would also be cumulatively influenced by other transportation projects in the region. Surface water quantity is not expected to change due to the impact of the CBIS Improvements Project. Short-term changes in water quality during construction are anticipated but not expected to be long term. The City of Council Bluffs includes approximately 30 miles of surface water, of which less than 8,500 linear feet (approximately 5 percent) could be affected by construction of the CBIS Improvements Project; as noted for potential wetland impacts, the amount of disturbance would be less than that included in this document due to the selection of a single concept in Tier 2.

Cumulative impacts on the Missouri River would include impacts caused by construction of reasonably foreseeable projects, including: the Missouri River Pedestrian Bridge and development on the Iowa and Nebraska shorelines; replacement of the South Omaha Veterans Memorial Bridge; and the Council Bend restoration project. Each of these projects would affect hundreds to thousands of linear feet of shoreline. In addition to the Missouri River, development adjacent to Indian Creek and Mosquito Creek is likely through the period of analysis for cumulative impacts (through 2030). These projects and the CBIS Improvements Project are not likely to be constructed during the same timeframe. With the implementation of mitigation and minimization measures during construction, the cumulative impacts on surface waters would be minimized.

Therefore, indirect and cumulative water quality impacts on surface waters resulting from the CBIS Improvements Project are estimated to be permanent, but negligible.

Mitigation of Groundwater Impacts

No measurable change to the available groundwater supply is expected for the Preferred Alternative; the additional impervious area associated with the project would represent a

small reduction in recharge area and, if necessary, may be mitigated by stormwater retention/detention basins. Roadway improvements near shallow wells may use established tools to avoid well interference.

Mitigation of Surface Water Impacts

Runoff impacts caused by the Preferred Alternative would be no greater than from other roadways in the Council Bluffs–Omaha area. The runoff would occur in areas already affected by runoff from the interstate system. The Wetlands subsection, 4.2.3, also discusses measures to protect water quality. A NPDES construction permit would need to be acquired to address stormwater impacts in segment projects because more than 1 acre of land would be disturbed; all requirements of the NPDES permit would be followed.

A stormwater pollution prevention plan and mitigation and minimization measures would be implemented during and after construction to minimize erosion and sedimentation. Specific sediment, erosion control, and spill prevention measures would be developed during detailed design and would be included in the plans and specifications. Potential measures could include silt fences, detention basins, buffer strips, or other features, used in various combinations, and the placement of drums of petroleum products in secondary containment to prevent leakage onto ground surfaces. Since construction would result in an increase in impermeable area, roadside ditches would be vegetated and stabilized, allowing runoff from the impermeable area to infiltrate, reduce the velocities, and minimize increases in sedimentation. To protect the creeks and other water resources from long-term runoff impacts, existing roadway maintenance policies would be followed. The policy for road maintenance efforts is to use ice control only as needed and with the minimal amount of control materials to reduce the possible negative effects of salt use. Mitigation tools would be implemented during and after construction to minimize erosion and sedimentation.

With the implementation of mitigation practices, such as those described above, water quality impacts on surface waters are estimated to be negligible.

4.2.3 Wetland Impacts

In accordance with EO 11990 (see Subsection 3.2.3) and various state and federal agency policies, permits, and mandates for wetland preservation, the following discussion provides a summary of wetland impacts for the proposed project. This wetland impacts discussion addresses direct impacts for the project alternatives. Available wetland mapping and the latest aerial photography were combined with field reconnaissance to confirm the presence of wetland resources in the area of potential impact. Wetland resources in Pottawattamie and Douglas Counties were obtained from NWI mapping and incorporated into an overall GIS database. The verification procedure was limited to the areas adjacent to the proposed project and within the area of potential impact. Field observations were also used to note general wetland type.

No-Build Alternative

The No-Build Alternative would result in minor wetland impacts. Projects from MAPA's *2025 LRTP* such as the widening of U.S. 275 and the construction of a new two-lane roadway northeast of Lake Manawa would result in wetland impacts. Construction of the proposed new two-lane roadways east of Council Bluffs could also result in potential impacts on wetlands and hydric soils. Additionally, over time, the No-Build Alternative would require

widening of major arterials and other local roads to accommodate the increasing traffic volumes. These roadway improvements could result in additional wetland impacts.

Preferred Alternative

To evaluate the wetland impacts, the Preferred Alternative was defined and overlaid on the GIS layers of wetlands to determine the potential area of wetlands that may be directly affected by the Preferred Alternative, see Figure 4-2 and Table 4-3. Approximately 42 acres of NWI wetlands and 15 additional acres identified in field surveys are within the construction area. A smaller acreage of wetlands would actually be impacted because the Preferred Alternative includes more than one conceptual alignment in some segments.

TABLE 4-3
Total Wetland Impacts

Wetland Type	Acres in Area of Potential Impact
NWI	42
Field/windshield surveyed	23
Overlap Total	**8**
Total acres	**57**

The I-29/I-80 East System Interchange is the main area where wetland impacts would occur within the area of potential impact. Due to the characteristics of the land and soils within the area of potential impact, some wetland areas would be affected, but the impacts have been avoided as much as possible in developing the concepts that remain under consideration. As design continues, impacts would be minimized to the extent possible.

The USCOE regulates wetlands under Section 404 of the CWA and they are also protected under EO 11990. Pursuant to the EO, a wetland finding would be prepared during Tier 2 indicating that there is no practical, prudent, or economic alternative to the placing of fill for highway construction in certain wetlands within the future ROW of the proposed CBIS Improvements Project.

Wetland delineations in accordance with the *1987 Edition of the USCOE of Engineers Wetlands Delineation Manual* (USCOE, 1987) would subsequently be performed to verify the information presented in this document and these delineations would be submitted to the USCOE as part of the Section 404 permitting process.

Indirect and Cumulative Impacts

Council Bluffs west of the Loess Hills was very swampy prior to dam and levee construction along the Missouri River and rechannelization of Indian Creek. Omaha is at a slightly higher elevation than western Council Bluffs and has historically had minimal wetlands in the area of potential impact.

Indirect wetland impacts may occur adjacent to a direct wetland impact as a result of sedimentation or loss of suitable habitat characteristics. Indirect impacts can also occur if characteristics of a given roadway improvement would result in development patterns that would require future wetland fills. Indirect impacts on wetlands as a result of the CBIS project are estimated to be negligible for the following reasons:

- Indirect water quality impacts (e.g. sedimentation) can be minimized by implementing and monitoring mitigation tools such as silt fencing and rapid revegetation of embankments.

- The urbanized landscape has created an "edge effect" on wetlands in the area of potential impacts, though important wildlife migration corridors would still function as such with the proposed roadway improvements.
- The proposed improvements do not systematically direct future development toward the necessity of wetland fill. While wetlands are nearly everywhere within the Missouri River floodplain, they are not abundant in the hilly terrain that characterizes parts of the Study Area upslope from the Missouri River.

Based on wetlands identified in the NWI, the City of Council Bluffs contains approximately 2,400 acres of wetlands. The CBIS Improvement Project and other reasonably foreseeable projects would result in a reduction of wetlands in Council Bluffs. Compared to the approximately 2,400 acres of NWI wetlands in Council Bluffs, fewer than 60 acres of wetlands (less than 3 percent) could be affected by the CBIS Improvements Project. Ultimately, the total area of wetland impacts would be much less than is defined in this section because the ROW required for the selected Tier 2 concept would be smaller than the area of potential impact defined in Tier 1, which is a composite of reasonable alternatives.

Mitigation

In addition to the avoidance of wetlands and minimization of wetland impacts that have already occurred when considering the Preferred Alternative during Tier 1 analyses, further evaluation would be performed during engineering design as part of Tier 2 analyses. If wetlands cannot be avoided, minimization and mitigation measures would be undertaken. Mitigation measures could include restoration and/or creation of buffers to protect existing wetlands and waterways.

The mitigation site(s) that may be restored should provide functions and values similar to those of the impacted wetlands. In this case, habitat for bird species and proximity to the Missouri River would be criteria used to select potential mitigation areas. Mitigation would follow FHWA's policy of "no net loss" of wetlands.

An inventory of potential mitigation sites would be developed by contacting local resource agencies. A preliminary review of potential sites would be performed as part of the mitigation concept for the USCOE Section 404/401 permit application. A USCOE Section 404/401 permit is required for any fill activities in jurisdictional wetlands or Waters of the U.S. The USCOE issues the Section 404 Permit. Measures to mitigate impacts on jurisdictional Waters of the U.S., including wetlands, would be developed and implemented so that the acreage affected by the CBIS Improvements Project would be replaced or rehabilitated on a "no net loss" basis in accordance with USCOE regulations.

NDEQ and IDNR issue Section 401 Water Quality Certification for projects in their respective states. During the NEPA process for Tier 2, the NEPA/404 merged process will continue; as a result, Iowa DOT will submit a permit application to the USCOE, Rock Island District office for approval of addressing wetland impacts in Iowa and NDOR will submit a permit application to the USCOE, Omaha District office for approval of addressing wetland impacts in Nebraska.

Mitigation in Iowa to offset the loss of emergent wetland habitat would likely be conducted at a ratio of 1.5:1, and forested wetland habitat (including riparian areas) would be performed at

a ratio of 2:1. Nebraska mitigation would likely involve restoration at a ratio of greater than or equal to 1:1 at selected wetland mitigation bank sites.

4.2.4 Floodplain Impacts

Potential floodplain encroachments were identified by examining Flood Insurance Study maps published by FEMA.

The following subsections discuss potential floodplain encroachments and other drainage concerns for the Preferred Alternative. Transverse (crossing) and longitudinal (edge) encroachments are differentiated, since longitudinal encroachments often result in more complex floodplain effects and greater reduction in conveyance. Longitudinal encroachments typically involve more fill, based on a longer zone of impact. Such impacts generally are considered to be more avoidable than transverse encroachments, based on the potential for design modifications.

No-Build Alternative

The No-Build Alternative would not result in substantial floodplain impacts. Individual projects, including improvements to Avenue G, and 6th and 7th Streets, would transversely cross the Indian Creek 100-year floodplain. U.S. 275 south of Iowa 92, a new two-lane roadway south of Kanesville Boulevard, and a new two-lane roadway northeast of Lake Manawa, would result in transverse encroachments of the Mosquito Creek 100-year floodplain.

Preferred Alternative

The Preferred Alternative crosses a total of nearly 6 miles of floodplain, with roughly 65 acres of longitudinal encroachment and 425 acres of transverse encroachment. See Figure 4-2 for locations of the floodplains. The crossings are in the Missouri River, Indian Creek, and Mosquito Creek floodplains. Table 4-4 indicates the locations of the crossings and provides a summary of the types of activities that would impact floodplains or levees within the CBIS Improvements Project.

No fill would be placed in the floodplain for widening the I-480 Bridge approaches in Iowa. The I-80 crossing of the Missouri River and the West System Interchange would likely involve reconstruction of some levees and placement of fill within the Missouri River floodplain. It is not likely that fill would be needed within the Indian Creek floodplain. The existing piers are outside the floodplain on the levee's outside banks. Minor modification of the Indian Creek levee for installation of piers would be performed but would not affect the integrity of the levee or the floodplain surface. Levee reconstruction and addition of fill to floodplains would occur at the East System Interchange and might occur along I-29 west of 25th Street. Fill would be placed within the Mosquito Creek floodplain to support new bridge construction or widening of existing bridges. While impacts would occur, the improvements are compatible with the floodplains, as capacity would not be fundamentally altered.

Relocation levees (which often constitute a boundary of a 100-year floodplain) would require approval by the USCOE. A levee freeboard review would need to be conducted for construction activities in the vicinity of USCOE levees. The levee near the West System Interchange may be reconstructed in place or relocated, primarily using the same materials.

TABLE 4-4
Floodplain Improvements and Potential Impacts

Segment	Floodplain Location	Type of Improvement[a]	Potential Impact(s)[b]
1	Missouri River (Nebraska)	Piers for new bridge Levee reconstruction and structure	Sedimentation in Missouri River Less than 21 acres of filling and excavation
2	Missouri River (Iowa)	Piers for new bridge Bridge widening Levee reconstruction and structure	Sedimentation in Missouri River and Indian Creek Less than 32 acres of filling and excavation
	Indian Creek	Bridge widening Levee reconstruction	
3	Mosquito Creek	Bridge widening Culvert replacement and structure	Less than 394 acres of filling and excavation
4	Missouri River (Iowa)	Bridge approach widening Levee reconstruction and structure	Less than 17 acres of filling and excavation
5	Mosquito Creek	Culvert replacement or extensions	Less than 26 acres of filling and excavation

[a] Each segment also has the potential for mainline relocation.

[b] If the levee relocation would result in a reduction of water storage capacity, the capacity would be increased in another location along the floodplain or a Letter of Map Revision would be required. Backwater surface elevations are not projected to increase.

Because the Missouri River and creek crossings would be designed to perform hydraulically in a manner equal to or greater than the backwater surface elevations, they would not be expected to increase these backwater surface elevations. The new crossings would be designed to pass a 100-year floodway volume with adequate clearance under the structures. While the proposed project would require construction within and fill of floodplains, the project would not fundamentally alter the capacity of the floodplains, and therefore is compatible with 100-year floodplains. Therefore, the CBIS Improvements Project is not expected to have significant impact to the floodplains located within the Study Area.

Mitigation

At Tier 1, it is anticipated that some mitigation would be needed since crossing the Missouri River, Indian Creek, and Mosquito Creek and their floodplains is unavoidable under the Preferred Alternative. Where floodplain impacts cannot be avoided, they could be minimized and mitigated by designing the project to ensure that waterway openings of structures crossing the floodplain provide sufficient capacity for floodwaters. All structures constructed as part of this project would be designed to accommodate at least a 100-year flood event in accordance with standard design practices. As structure types are determined, hydraulic analyses would be conducted to determine the amount of fill needed and the rise of water levels within the floodplain, which determine the amount of mitigation needed.

Some fill would be needed in some floodplain areas to accommodate the Preferred Alternative. To the extent possible, existing fill within the ROW would be relocated to minimize the need for new fill. The storage capacity could be maintained by several measures

such as repositioning of levees, removal of preexisting structures, or by a notch along a river or stream bank with some floodplain lowering and clearing (including removal of vegetation). No rise in water surface elevation for the 100-year flood event is allowed within a FEMA-designated floodway without approval through a Letter of Map Revision (LOMR). A 1-foot rise in water surface elevation for the 100-year flood event is allowed within a FEMA-designated floodplain without approval through a LOMR. If the project requires relocation of a levee and reduction of storage capacity, storage capacity could be mitigated or a LOMR would be required.

The Cities of Omaha and Council Bluffs, and unincorporated areas of Douglas and Pottawattamie Counties, implement FEMA National Flood Insurance Program requirements. Prior to construction, a floodplain development permit would be needed for disturbance of land within the 100-year floodplain. A Sovereign Lands Construction Permit issued by IDNR would also be needed for construction on state-owned land and construction below the ordinary high-water line.

4.2.5 Wildlife and Biological Resource Impacts

Biological resources in the Study Area were determined through coordination with the USFWS, IDNR, and NGPC, and a desktop analysis. The use of published resources, databases, and GIS is considered to comprise a desktop analysis. Data resources used in the analysis included previous reports or studies, soil surveys, IDNR GIS coverage information, and agency websites. Additionally, windshield surveys were conducted in conjunction with other field studies to identify potential areas of habitat for aquatic and terrestrial flora and fauna.

No-Build Alternative

Natural habitat bordering the project corridor has limited potential to thrive because of extensive development and periodic maintenance. Roadway improvements would have minimal impact on the area's limited wildlife resources. Wildlife in the Study Area generally consists of species adapted to conditions disturbed by urbanization or agriculture. The No-Build Alternative would not affect important upland wildlife habitat in the Study Area (nature preserves and natural areas). Generally, it would have minimal impact on biological resources. The species in the Study Area generally are tolerant of development and would be expected to compete well in other locations if forced to relocate. However, specific projects could result in increased wildlife density and competition for available habitat in neighboring areas, which could cause a small reduction in the overall population.

Specific projects of the No-Build Alternative would result in construction within the Loess Hills. Of the projects in MAPA's *2025 LRTP*, improvement to Madison Avenue, North Broadway, U.S. 6, U.S. 275 south of Iowa 92, Iowa 92 east of Council Bluffs, and several new two-lane roadways would be constructed in the Loess Hills, which include the largest tracts of remaining prairie in Iowa and sustain many unique plant and animal species. The Loess Hills are a significant resource and impacts on them could be moderate. The improvements would be concentrated in the eastern part of Council Bluffs and outside the Council Bluffs city limits, where development is less dense and more prevalent remnants may still occur.

The No-Build Alternative would also require improvements to and/or widening of existing local roads to accommodate demand. These improvements could result in minor impacts on

the Loess Hills, however since such projects would involve improvements to existing roadways, the effects on natural habitat areas would be minor.

Preferred Alternative

Land use in the area of potential impact is primarily urban (heavy and light industrial, commercial, and residential) with the exception of wetlands and habitat found within and along surface waters. Due to the hydric nature of soils in the area, wetlands caused by culverts and roadway drainage dot the landscape, but these wetland pockets are not significant enough to be used as primary habitat for wildlife species.

If the Preferred Alternative were implemented, construction would occur within an existing transportation corridor. Most riparian areas in the Study Area were altered previously during the initial construction of the interstate system. The Preferred Alternative of the Tier 1 EIS would result in construction in approximately the same location or parallel to the existing alignment; impacting the previously impacted areas. Bridge pier construction would be the only impact to the Missouri River channel. The changes in the pier structure associated with the new bridge should not result in fundamental changes to the Missouri River. Riparian areas adjacent to the bridge would be subject to minor impacts due to tree removal for bridge construction. The existing bridges over Indian and Mosquito Creeks would be replaced with new wider bridges. Consequently, the aquatic habitat (including riparian areas) associated with those water resources is not expected to incur major disturbances during construction. Existing wildlife passages would be maintained. Some wetland areas within the Study Area inevitably would be affected.

Impacts on aquatic species would be temporary, and would consist of area avoidance caused by increased turbidity during pier construction. Runoff from construction sites would be managed in accordance with Iowa DOT and NDOR construction manual requirements. Impacts on Missouri River native fish (such as catfish, paddlefish, and carp) are projected to be minimal both during and subsequent to construction

The Preferred Alternative of the CBIS Improvements Project would unavoidably impact some upland habitat areas (including the Loess Hills), mostly within existing ROW. The project would cross the Loess Hills northeast of the East System Interchange, an area previously modified by the initial construction of I-80. Therefore, a minimal area not previously affected by construction would be disturbed. The Special Landscape Areas within the Loess Hills as well as the Vincent Bluff Prairie Preserve are distant from the construction area and would not be affected by the project. No known prairie areas would be affected by construction.

Mitigation

Attempts would be made to avoid biological resources including upland prairie habitat and forested areas, riparian areas, aquatic habitat, and wildlife populations to the extent possible. When avoidance is not an option, the impacts would be minimized and mitigated. Examples of potential mitigation measures follow.

Impacted stretches of upland prairie and forested areas would need to comply with guidelines established by the Iowa DOT for habitat replacement. Potential mitigation efforts include reestablishing in-kind upland prairies, with an emphasis on replacement occurring in wetland buffer zones; relocating the topsoil and seed bank; reseeding in kind; transplanting sod and individual plants; and planting native prairie vegetation within roadside ROW.

As mentioned above, a limited amount of riparian areas could be affected by the Preferred Alternative. To minimize impacts associated with tree removal, such activities could be restricted (as possible) to August 15 through November 14. Another mitigation option would be to coordinate with natural resource agencies regarding planting new trees to replace those removed.

Since the streams within the area of potential impact provide aquatic habitat as well as avenues of wildlife movement, bridges or open bottom culverts would be maintained or installed, where practical, to provide additional corridors of movement for smaller wildlife. Along the CBIS improvements, this includes crossings of the Missouri River, Indian Creek, and Mosquito Creek.

Impacts on wildlife are anticipated to be minor since the improvements associated with the Preferred Alternative are made primarily to existing roadways. If determined necessary based on Tier 2 biological evaluations, roadside barriers, such as fences and jersey walls, could be used to restrict or minimize accidents between cars and wildlife entering roadways. These short barrier walls could be designed mainly to restrict the movement of small animals (including reptiles, amphibians, and smaller mammals). The walls would not limit the movement of larger mammals or cause them to be trapped within the roadway. To additionally minimize and mitigate wildlife impacts, tree removal would be kept to a minimum and performed and restricted to periods to lessen impacts. Bridge modifications could affect colonies of cliff swallows nesting on the existing bridges. A survey of potential cliff swallow habitat is recommended during Tier 2 studies to determine if they are present on existing bridges. If nests are present, construction must be timed to avoid impacts on occupied nests. If disturbance of the nests cannot be avoided, the USFWS must be contacted for guidance.

4.2.6 Threatened and Endangered Species

This section summarizes potential threats to those species protected under the Endangered Species Act. Impacts to threatened or endangered species are determined as no effect, no adverse effect, and adverse effect. An adverse effect could result if the project modifies habitat, precludes or impedes development of habitat, has the likelihood of disturbing feeding or breeding activities, or results in the taking of an individual.

No-Build Alternative

Since the No-Build Alternative does include construction of new roadways, the potential exists to disrupt habitat or displace T&E species. Biological studies would have to be performed for each project to account for impacts on T&E species.

Preferred Alternative

According to information supplied by the USFWS and NGPC, the project is near several recorded occurrences of T&E species. The accuracy of available data however, does not allow a determination of specific impacts to these resources. It is not likely that the project will adversely affect any threatened or endangered species; however, final determinations will be made after biological studies are completed in Tier 2. As appropriate, Biological Assessments and evaluations will be completed during Tier 2. A determination of effect on T&E species would be made as part of the biological evaluations or Biological Assessments which would be completed in Tier 2. Evaluations and any required surveys (habitat surveys and species

surveys if habitat is identified) would focus on the potential presence of the following species as identified by USFWS, IDNR, and NGPC and described below:

- Bald eagle
- Least tern
- Piping plover
- Indiana bat
- Eastern massasauga rattlesnake
- Pallid sturgeon
- Lake sturgeon
- Sturgeon chub
- Western prairie fringed orchid
- Prairie bush clover
- American ginseng

Bald Eagle. A review of records by NGPC and IDNR revealed that there are no known bald eagle nests near the Study Area (Godberson, 2003; Howell, 2003). The main concern would be if nests are within ½ mile of construction sites. However, removing trees and other features (i.e., telephone poles) that are potential roosting and perching habitat is also a concern of the USFWS. Bald eagles migrate through and roost along the Missouri River. The Lake Manawa area is also used by bald eagles for roosting and perching during migration.

Project-related construction would occur within the existing transportation corridor associated with high levels of traffic and noise. Therefore, no impact is expected. The removal of trees along the Missouri River for construction of an additional I-80 Bridge would be kept to a minimum to lessen the loss of potential roost locations in the area. Iowa DOT and NDOR would conduct bald eagle nest surveys prior to the removal of trees along the Missouri River.

Least Tern and Piping Plover. A preliminary habitat investigation using aerial photographs and windshield surveys determined that suitable habitat does not exist in the project area to support the interior least tern or piping plover.

Indiana Bat. The Indiana bat has never been documented in the project area. According to the USFWS' *Indiana Bat Revised Recovery Plan, Region 3,* and IDNR's *Guidelines for Protection of the Indiana Bat Summer Habitat,* the Indiana bat has no historical occurrence in Pottawattamie County or any surrounding counties.

Impacts are not expected because there would be minimal taking of trees for the project and because construction would occur within an existing transportation corridor. If trees that meet the habitat requirements of the Indiana bat are found during Tier 2, a survey to determine whether the Indiana bat is present (Survey period, May 15 to August 31) would be conducted. If the bats are known to be present, they must not be harmed, harassed, or disturbed. Clearing of trees can occur between October 1 and March 31 without harming the species.

Eastern Massasauga Rattlesnake. Potential habitat may exist in the project area. NWI wetlands classified as PSS1C$_x$ (**palustrine** scrub-shrub broad-leaved deciduous seasonally flooded, excavated) have been noted within

the Study Area. Surveys have not been performed within and/or near the project area to confirm the presence or quality of suitable habitat for the eastern massasauga. Minimizing impacts on these habitat types would reduce the threat of encountering this species. This is possible because most of the construction would be completed in a previously developed corridor.

A determination of effect in accordance with requirements of Section 7 of the Endangered Species Act is not required because this species is not federally listed as threatened or endangered. However, it is a Nebraska threatened and Iowa endangered species and is addressed in this Tier 1 Draft EIS because of its state designations.

Pallid Sturgeon. Based on the known information on the pallid sturgeon and the letter from USFWS dated April 15, 2003, (see Appendix A, Correspondence) the pallid sturgeon is found in the Missouri River near the Study Area. No backwater areas are present near or within the Study Area, but the Omaha USCOE is proposing restoration of a backwater area at Council Bend (approximately ½ mile upstream of the I-480 Bridge). The USFWS has designated as a "Recovery-Priority Management Area" (RPMA) 20 miles upstream and downstream from the confluence of the Platte and Missouri Rivers. The I-80 Bridge proposed under the Preferred Alternative would be within the RPMA and is in a riparian area. Due to its migratory nature, it is likely that the pallid sturgeon could occur in the Study Area for the CBIS Improvements Project. However, the species is mobile and would likely avoid the construction area.

Specific measures to avoid harm to this species would be implemented during construction and would include erosion control from construction activities and measures to avoid water quality impacts on the Missouri River. No impact to this species is expected with implementation of mitigation measures and construction timing.

Lake Sturgeon. Lake sturgeon may occur in the project area. As indicated in the discussion on the pallid sturgeon, there are no backwater areas within or near the Study Area (although the USCOE is proposing to create a backwater area approximately ½ mile upstream from the I-480 Bridge). Most likely, the lake sturgeon would avoid the area of construction. Precautions would be taken in order to reduce the probability of encountering this species during construction. Measures would include erosion control from construction activities and avoidance of water quality impacts on the Missouri River. With the implementation of mitigation measures and construction timing, no impact to this species is expected.

Sturgeon Chub. Specific measures to avoid harm to this species would be implemented during construction and be similar to those observed for the pallid and lake sturgeon, including erosion control from construction activities and measures to avoid water quality impacts on the Missouri River. As with the pallid and lake sturgeon, no long-term impacts are anticipated.

Western Prairie Fringed Orchid. The habitat requirements for western prairie fringed orchid include tall-grass calcareous silt loam or subirrigated sand prairie. In addition to the desktop analysis performed as part of the Tier 1 process, a more detailed desktop analysis would be required during Tier 2 studies by reviewing aerial photographs and identifying vegetated locations not used for row-crop agriculture. Based on the desktop analysis results, a field survey would be performed to

locate tall-grass calcareous silt loam or subirrigated sand prairie that is suitable habitat for the western prairie fringed orchid. However, since most of the ground disturbance would take place within a regularly mowed and maintained, existing corridor, the likelihood of finding suitable habitat is minimal.

Prairie Bush Clover. The prairie bush clover is found in dry to mesic prairies with gravely soil. Further investigation is needed to identify specific locations within the area of potential impact that meet the habitat requirements for the prairie bush clover. If areas are found that meet these requirements, a survey would be performed to determine the presence of the prairie bush clover. Due to the roadway development in the project area and maintenance of the ROW, the likelihood of finding suitable habitat is minimal.

American Ginseng. American ginseng is an understory forb that grows in good-quality upland hardwood forests. Often the plant is associated with mature stands of burr oak (*Quercus macrocarpus*). In its native environment, ginseng grows under high levels of shade provided by the forest canopy and quickly loses vigor and dies if the shade is removed. In addition to the desktop analysis performed as part of the Tier 1 process, a more detailed analysis will be conducted. It is not likely that suitable habitat would be found in or adjacent to the existing, frequently mowed and maintained transportation corridor.

Species of Concern. The Preferred Alternative would involve some modifications to the I-480 Bridge and construction of a parallel bridge next to the existing I-80 Bridge. Thus, the project could affect colonies of cliff swallows nesting on the two existing bridges (see Section 4.2.5). Cliff swallows are protected under the federal Migratory Bird Treaty Act. A survey of potential habitat during Tier 2 studies is recommended to determine the presence of the species. If nests are present, construction could be timed to avoid impacts on occupied nests. If disturbance of the nests cannot be avoided, the USFWS must be consulted. The potential presence of other migratory bird species should also be evaluated during Tier 2 studies.

Indirect and Cumulative Impacts

Depletion of habitat for the purpose of urban development is one of the factors in the overall decrease of T&E populations. A direct correlation has been found linking T&E species and the loss of wetlands and surface water quality. Information on T&E species potentially in the Study Area for the CBIS Improvements Project was provided by environmental resource agencies. Of the 11 T&E species identified by the agencies, 8 have an association with the Missouri River and 3 are dependent on wetland as habitat. Fragmentation caused by urban development and channelization of the Missouri River have made most of the Study Area inhospitable to these species. The cumulative impacts on T&E species as a result of the CBIS Improvements Project and the other sizable area projects listed in Section 3.3 would not likely result in adverse effects due to the implementation of mitigation and minimization strategies aimed at ensuring habitat preservation. Biological evaluations and Biological Assessments will be conducted as necessary during Tier 2 and will address T&E habitat when warranted.

Mitigation

Avoiding or minimizing impacts on habitat where it exists and taking proper precautions during construction (e.g., timing) can avoid potential impacts on most of the aforementioned

species. While further analysis would be performed during Tier 2 studies to identify locations with the appropriate habitat for each of the potential species, the primary purpose of the area is and will remain a transportation corridor. If T&E species are encountered, a plan would be developed to avoid affecting the identified species. If avoidance is impractical, a mitigation plan would be developed and coordinated with either the USFWS (federal species) or the IDNR and NDEQ (state species) in Tier 2. However, most of the ground disturbance would take place within a regularly mowed and maintained corridor and there would be minimal taking of trees or additional area outside the current ROW. It is not likely that the project would adversely affect any T&E species; however, final determinations would be made after biological studies are completed in Tier 2.

4.2.7 Public Lands/Section 4(f) Considerations

The Section 4(f) analysis identified the potential impacts on publicly-owned parks; recreation areas; wildlife and waterfowl refuges; and historic sites of national, state, or local significance. This assessment is intended to identify properties that have the potential to be designated as Section 4(f) resources. The properties identified in this section are likely to be impacted by the proposed improvements (See Figure 4-3). These properties have been identified using readily available data. Formal 4(f) consultation, and ultimately a determination of Section 4(f) applicability will be completed in Tier 2. If necessary, Section 4(f) Statements will be completed that detail why avoidance alternatives are not feasible and prudent methods that could be used to minimize and mitigate impacts. Through future stages of analysis and refinement, potential impacts will be better understood and coordinated further with the responsible jurisdiction agencies.

As discussed in Section 2, the alternatives development process considered environmental and societal resources throughout the study. Considerable effort was made to avoid or minimize impacts on Section 4(f) resources when considering the reasonable concepts that make up the Preferred Alternative. Although those efforts succeeded in minimizing impacts, the Preferred Alternative could have some effect on Section 4(f) resources. This section identifies potential historic structures, wildlife and waterfowl areas, and recreation resource impacts that may require Section 4(f) coordination. Standing structures are further discussed in Subsection 4.2.8, Historic and Archaeological Resources.

No-Build Alternative

No known 4(f) resources would be impacted by the No-Build Alternative. The individual transportation projects identified in MAPA's *2025 LRTP* would be evaluated for compliance with 4(f) regulations as appropriate.

Preferred Alternative

Based on initial analysis, the following properties, located within the area of potential impact and, could be Section 4(f) resources:

- **Playland Park**. Approximately 4 acres of this parcel are within the area of potential impact, 1 acre would qualify as a Section 4(f) and 6(f) property and 4 acres would qualify as a Section 4(f) property. Section 6(f) resources require approval from the DOI to convert to an alternative use. Additionally, 5 acres of the park that are slated for the development of condominiums could be affected by the project.

- **Westwood Park.** Approximately 7 acres of Westwood Park are within the area of potential impact.
- **Western Historic Trails Center.** Approximately 107 acres of the WHTC property are within the area of potential impact.
- **The Omaha Henry Doorly Zoo.** Approximately 7 acres of zoo land and 2 maintenance buildings are within the area of potential impact, 4 acres north of I-80 and 3 acres south of I-80.
- **Spring Lake Park.** Approximately 3,000 square feet of Spring Lake Park property are within the area of potential impact.
- **Deer Hollow Park.** Approximately 2 acres of Deer Hollow Park are within the area of potential impact.
- **Dodge Riverside Golf Course.** Approximately 12 acres of Dodge Riverside Golf Course are within the area of potential impact, including a portion of the land proposed for residential conversion.
- **Westwood Golf Course.** Approximately 5 acres of Westwood Golf Course are within the area of potential impact.
- **City of Council Bluffs Recreation Complex.** Approximately 0.3 acres of the complex are within the area of potential impact.
- **Frito-Lay Factory.** The area of potential impact includes the building with its distinctive architectural styling. Even if the building was not disturbed by construction, an indirect use of this property may occur as there is potential for vibration, noise, or visual impacts on this historic structure.
- **Worker Neighborhood.** The area of potential impact includes a portion of Spring Street and private property, but no residences. For the Tier 1 analysis, effects to this resource are considered as potential Section 4(f) impacts.
- **Frame Building.** The area of potential impact includes a portion of the property.
- **Greenhouse Complex.** Several greenhouses are within the area of potential impact.

In the process of developing the design concepts, FHWA, Iowa DOT, and NDOR evaluated preliminary conceptual design alignments to avoid potential 4(f) properties as much as possible. During Tier 2, a determination of Section 4(f) applicability will be made by FHWA. A Section 4(f) Statement would need to be prepared to address each potential Section 4(f) property that would be impacted. Section 4(f) requires efforts to avoid, minimize harm, and mitigate impacts. It is expected that future design activities would result in avoidance or minimization of these impacts.

Mitigation

Mitigation of Section 4(f) properties could include, but is not limited to: compensation for use of property, replacement with an equivalent property, or screening of an impacted area by walls or other landscaping. Mitigation will be determined as part of the Section 4(f) Statement.

4.2.8 Historic and Archeological Resources

This subsection describes the potential effects of the project alternatives on cultural resources.[24] The potential environmental consequences related to the project alternatives were determined using existing and available data, limited field reconnaissance, and the Phase 1 Reconnaissance survey, see Section 3.2.8, Historic and Archeological Resources. Overall, the assessment of cultural resource impacts is intended to provide a relative measure of the potential effects of the alternatives under consideration.

Numerous archaeological and historical resources are located throughout the Study Area, but only a few are likely to be eligible for the NRHP. A full Phase I survey will be completed in Tier 2. At that time, the SHPO in each state will concur with the determination on eligibility for the NRHP. The relevant state agencies have not rendered any opinion regarding the potential eligibility of the structures described below.

For a tiered study, the SHPO has agreed that a feasibility or preliminary assessment is appropriate to provide an awareness of potential cultural resource effects. They have advised, however, that an extensive survey investigation and determination of eligibility must occur during future phases of work.

No-Build Alternative

The No-Build Alternative would affect no known cultural resources. Each of the No-Build transportation projects would need to account for cultural resources in planning their roadway alignments.

Preferred Alternative

Historic Structures. Within the area of potential impact, there are no properties previously determined eligible for, or listed on the NRHP. Twenty-two potentially historic properties were reviewed during the reconnaissance study, six of which are located within the area of potential impact. Those within the area of potential impact could be directly affected.

The following six properties may be impacted by the Preferred Alternative and would need further examination during Tier 2[25]:

- Frame Building on South Avenue (Iowa)
- Commercial greenhouses on Harry Langdon Boulevard (Iowa)
- Frito-Lay Factory on Broadway Street (Iowa)
- Spring Lake Park near Hoctor Boulevard (Nebraska)
- Deer Hollow Park (Nebraska)
- Worker neighborhood (Nebraska)

Archaeological Resources. There are four known archaeological sites within the area of potential impact (13PW123, 13PW118, 13PW69, and 13PW161); all the sites are in Iowa and none are considered eligible for the NRHP. Two archaeological sites were determined to be outside the area of potential impact (13PW119 and 13PW121). Three archaeological sites have known locations (a portion of which is within the area of potential impact) but were determined to be ineligible for the NRHP (13PW123, 13PW69, and 13PW118) and one site

24Potential historic structures are shown on Figure 4-4, Potential 4(f) Impacts. Due to the sensitive nature of archaeological resources, figures depicting the locations of these sites have not been shown.
25 More potentially historic properties may be identified in the full Phase I surveys that will be conducted in Tier 2.

with a known location was recommended ineligible for the NRHP (13PW161). The exact location of site 13PW25 is unknown but may be within the area of potential impact.

The reconnaissance survey and background research identified the area north of the East System Interchange as having a very high potential for both prehistoric and historic sites. Early settlements of Cartersville (east of I-80) and Greendale (west of I-80) were located near the boundaries of the I-80 study corridor. Other parts of the Study Area have moderate potential for archaeological resources. Near the I-480 Bridge, there may be ferry house and ferry landing artifacts, as well as historic artifacts related to Dodge Park and the former Playland Park amusement site; however, it is likely these sites were greatly disturbed by construction of the I-480 roadway and bridge.

Locations with moderate or high archaeological potential that have not been surveyed or have not been destroyed by modern construction warrant Phase 1 archaeological surveys. The integrity of the historic Council Bluffs Airport site (13PW161) near the East System interchange may have been destroyed during construction of the interchange, but a Phase I survey is recommended to determine the status of the site.

Mitigation

Potential cultural resources (archaeological sites and historic structures) do exist within the area of potential impact; however, no sites are listed in the NRHP. Additional evaluations would be performed during Tier 2 studies as necessary to more closely research the area of potential impact to identify other potential cultural sites, and make determinations of NRHP eligibility.

As with all resources, avoidance is the preferred mitigation measure when dealing with cultural resources. When avoidance is not an option, potential mitigation measures could include an onsite archeologist during construction in areas with high archaeological potential, data recovery in the form of photo logs and other detailed record keeping, and moving historic or archeological sites as possible.

Specific mitigation for cultural resource impacts would be addressed under Tier 2 studies, at which time a Memorandum of Agreement with the appropriate state historic preservation official would be prepared for the specific impacted site(s). If a site is eligible for the NRHP, Section 4(f) requirements would also apply, unless a property is only eligible for the NRHP based on Criterion D, which protects archaeological sites that have historically yielded, or could yield, information of historical or prehistorical importance.

4.2.9 Air Quality

No-Build Alternative

No long-term air quality impacts from highway operations are anticipated as a result of any improvements in MAPA's *2025 LRTP* implemented under the No-Build Alternative.

Preferred Alternative

The project may have short-term impacts on air quality as a result of construction; see Subsection 4.2.14. No long-term air quality impacts from highway operations are anticipated as a result of the project.

No long-term impacts on air quality are anticipated as a result of the operation of the Preferred Alternative. Traffic is currently at LOS F during peak hours in some areas, and conditions would worsen if improvements are not made. The project would increase the efficiency of vehicular transportation on the Council Bluff's interstate system, as air emissions from idling vehicles are more concentrated. Consequently, long-term air quality under the proposed project would improve with the Preferred Alternative but remain unchanged if the No-Build Alternative were implemented. If air quality would become an issue in the future, formal air studies would be completed during Tier 2.

Mitigation

No mitigation is needed.

4.2.10 Noise

The potential effects of traffic noise from the project alternatives are described below. This assessment is intended to provide a relative measure of the potential effects of the Preferred Alternative on potentially sensitive receivers. Detailed noise assessment would occur during Tier 2.

The objective of determining the relative degree of potential noise impact across the range of project alternatives guided the noise assessment. To quantify the objective, the number of commercial establishments and residences that have identified exterior activity that could be affected by noise was determined. FHWA guidelines indicate a significant noise impact when the predicted noise levels at an adjacent noise-sensitive receiver approach or exceed the Noise Abatement Criteria (NAC) of 67 dBA for residences and 72 dBA for commercial receivers. "Approaching" is defined as coming within 1 decibel (i.e., 66 dBA for residences or 71 dBA for commercial receivers) of the NAC.

No-Build Alternative

For comparison purposes, analysis was conducted to determine the 66-dBA and 71-dBA contours from the edge of ROW for the existing roadway system based on current traffic data. The contours are essentially parallel to the interstate systems and do not account for interchanges. The volumes and speeds of traffic dominate the noise profile, thus noise levels for interchange roads would be considerably less than along the interstate mainline due to lower speeds and volumes.

The contours projected under existing conditions allow identification of receiver locations currently incurring traffic noise levels approaching or exceeding NAC. Consequently, the number of new, potentially-affected receivers in the future would actually be less than the number projected for 2030 because some of these receivers are currently impacted by noise levels above NAC. If the project were not constructed, future peak-hour traffic would dramatically slow in several congested areas. The level of service would degrade, causing traffic to take alternate routes. Consequently, the highest average noise levels would not occur during peak-hour traffic, but at other times when free-flow conditions would occur. The range in traffic reduction would vary, depending on location and proximity to alternate routes. No-build future conditions could be projected by adjusting future traffic assumptions in various segments and modifying input to TNM. The assumptions would likely result in an unrealistic scenario.

Future no-build conditions were not modeled because a better representative comparison of changes in noise levels is available by reviewing existing noise conditions and future conditions after construction. Although they were not modeled, traffic noise levels under the No-Build Alternative would likely be less than those projected for the Preferred Alternative because traffic would be moving more slowly and diverting to other routes. Additional lanes of traffic under the Preferred Alternative would result in a wider noise profile than that of a no-build scenario.

Residences, apartment complexes, and businesses within the projected noise contours were identified and counted. Some residences are as close as 60 feet from the edge of the interstate system, and even closer to ramps. Table 4-5 provides the estimate of currently impacted noise receivers. Figure 4-4 shows the predicted noise contours for existing traffic, and identifies known sensitive receivers near the contours. Sensitive receivers within the 71-dBA noise contour are the Open Door Baptist Church (which also hosts Liberty Christian School), Crossroads Christian Center, and Seventh-Day Adventist Church. Sensitive receivers located between the 71-dBA and 66-dBA contours include the Community Christian School (a daycare is also onsite).

TABLE 4-5
Summary of Currently Impacted Noise Receivers

	≥ 71 dBA	≥ 66 dBA	
State	**Business**	**Residence**	**Apartment Complex**
Iowa	20	214	14
Nebraska	1	133	1
Total	**21**	**347**	**15**

The average household size in Omaha and Council Bluffs is estimated to be 2.4 and 2.5 people, respectively (U.S. Census Bureau, 2000). The apartment complexes within the noise contours ranged in size from a duplex to approximately 48 units. Applying the average occupancy to the residences and apartments, and assuming an average apartment complex size of 24 units, approximately 875 people living in residences and 900 people in apartments along the interstate system in the Study Area are affected by noise levels approaching or exceeding NAC. The average business size along the area of potential impact was assumed to be 25 people for the *Acquisition and Relocation* Technical Memorandum; applying this average to the number of businesses within the 71 dBA contour, approximately 500 employees are being adversely impacted by noise levels approaching or exceeding NAC.

Preferred Alternative

Noise levels are projected to increase within the Study Area due to increasing traffic; this is an unavoidable impact. The improved roadway system considered for the Construction Alternative would also result in a closer proximity to roads for some residences and businesses. Figure 4-5 shows the 66-dBA and 71-dBA noise contours for the Preferred Alternative and Table 4-6 summarizes the residential and business impacts that would occur. The numbers shown in parentheses are those properties with projected noise levels that exceed the NAC, but are not considered to be impacted by the Preferred Alternative; they are

situated within the potential ROW and may be acquired depending on the concepts selected in Tier 2.

TABLE 4-6
Summary of Noise Receiver Impacts

	≥ 71 dBA	≥ 66 dBA	
State	**Business**	**Residence**	**Apartment Complex**
Iowa	13 (26)	312 (130)	37 (7)
Nebraska	8 (1)	343 (3)	1 (0)
Total	21 (27)	655 (133)	38 (7)

Numbers in parentheses are those properties where noise levels approach or exceed the NAC, but the properties are within the proposed ROW, and therefore are likely to result in acquisition.

Considering noise levels of 71 dBA or greater for businesses and 66 dBA or greater for residences and apartments, a total of 788 residences, 45 apartment complexes, and 48 businesses would experience noise levels approaching or exceeding NAC. However, by excluding the receiver locations that are within the proposed ROW for concepts that remain under consideration for Tier 1, 655 residences, 38 apartment complexes, and 21 business buildings are in locations approaching or exceeding NAC. Using the assumptions defined in the No-Build analysis, noise would adversely impact approximately 1,600 people in residences, 2,300 people in apartment complexes, and 525 employees of businesses. Of these receivers, many are currently experiencing adverse traffic noise (levels above NAC). Accounting for receivers located within the proposed ROW for the concepts under consideration approximately half of the residences affected by noise levels approaching or exceeding the NAC of 67 dBA are located in Omaha and half in Council Bluffs. Apartment complexes impacted by noise are primarily in the area from I-29 north of the UP Railroad tracks to the I-29/25th Street Interchange in Council Bluffs. Noise impacts on businesses (approaching or exceeding the NAC of 72 dBA) are greatest near the I-80/I-29 East System Interchange in Council Bluffs and in Omaha.

Sensitive receivers within the projected 71-dBA noise contour are the Community Christian School, Crossroads Christian Center, Open Door Baptist Church (which also hosts Liberty Christian School), and Seventh-Day Adventist Church. The Community Christian School and Seventh-Day Adventist Church are within the ROW for the concepts considered under Tier 1 and may need to be acquired, depending on the alignment selected during the Tier 2 studies. No hospitals or other churches or schools are within the 71-dBA contour.

Because multiple concepts remain under consideration during Tier 1, deducting out potential acquisitions within the proposed ROW overestimates the ultimate relocations, thus affecting the noise analysis. Additionally, a better measure of receivers affected by the Preferred Alternative would discount those receivers currently experiencing adverse noise levels. To more accurately estimate the number of receiver locations approaching or exceeding the NAC, an analysis was done in Segment 4 evaluating the impact of one concept that remains under consideration to serve as a representative alignment.

Analysis of that concept in Segment 4 revealed 190 residences at or exceeding 66 dBA. Of the 190 residences, approximately 63 are within the proposed ROW and would be acquired. Additionally, 144 currently exceed the NAC including all but one of the residences that would be acquired. Deducting the receiver location that would be acquired as well as those that currently exceed the NAC, the actual impact in this segment would be approximately 45 residences that would experience increased noise levels approaching or exceeding NAC. By applying a similar impact proportion (approximately 25 percent) to the entire corridor, approximately 197 residences would experience adverse noise impacts. The remaining residences are either currently experiencing adverse noise levels or would be within the project ROW, and would result in acquisition. As more than one concept is being considered per segment in Tier 1 Draft EIS, actual noise impacts will be calculated during Tier 2 studies of individual segments when a single concept is selected.

Mitigation

Noise abatement (mitigation) measures should be considered where predicted traffic noise levels approach or exceed the NAC, or when the predicted traffic noise levels substantially exceed existing ones. In this case, for Tier 1, the potential types of abatement measures were considered because future Preferred Alternative noise levels along the area of potential impacts approach or exceed the NAC.

Noise abatement would be applied according to NDOR and Iowa DOT noise policies. When considering specific abatement measures, each abatement's cost and effects would be evaluated against the amount of benefit. Even if a noise abatement measure is feasible, it might not meet the reasonableness criteria set by Iowa DOT and NDOR for a particular area. The following are potential abatement measures that could be adopted if warranted as determined by Tier 2 studies:

Buffer Zones. The purpose of a buffer zone is to provide enough distance between the noise source and any future developments in order to minimize future noise impacts.

There is undeveloped land throughout the corridor. Because it is not known what type, if any, of development will be planned for this area, it will be the potential developer's responsibility to make sure a detailed noise study is completed and a noise-compatible development (i.e., construction of noise-resistant structures) is planned for the area.

Alteration of Horizontal Alignment. This noise abatement measure can be incorporated into a project to reduce traffic noise impacts where the receivers are typically on one side of the project or where the elevation is relatively constant. Since sound intensity decreases with distance, shifting of the centerline away from the receivers may reduce noise levels.

Noise Barriers. Noise barriers are considered as a possible means of noise abatement where the traffic creates a noise impact. A noise barrier must be continuous and have substantial length and height to be effective. Noise barriers are not proposed unless a single barrier on a feasible location can effectively reduce traffic noise at several impacted receivers for a reasonable cost.

Iowa DOT noise abatement policies would be applied when determining the feasibility and reasonableness of noise barriers in Iowa, and NDOR policies would be applied in Nebraska. Final construction of any noise abatement will depend on public input and final design considerations.

4.2.11 Regulated Materials

A database search, augmented by windshield surveys, yielded a list of potential regulated waste sites within the area of potential impact, see Figure 4-3 and Table 4-7. Sampling, monitoring, and site owner interviews were not conducted, but would be used as appropriate in Tier 2. Sites were assessed based on risk. Potential regulated materials impacts are described below.

No-Build Alternative

The No-Build Alternative may involve effects on regulated material sites, especially refueling stations near intersections. Each of the transportation projects in the No-Build Alternative would need to account for potential regulated materials sites in planning roadway alignments.

Preferred Alternative

The Preferred Alternative may impact 3 potentially high-risk sites, 4 potentially moderate-risk sites, 50 potentially low-risk sites, and 1 site with unknown risk. Of the sites, one high-risk, and four moderate-risk sites are located in Omaha; the remainder are located in Council Bluffs. Any sites actually within the area of potential impact considered high, moderate, or unknown risk require further analysis in Tier 2 environmental studies if it is likely they would be disturbed by construction of the project.

The Preferred Alternative may impact one site on the NPL—the Omaha Lead Site, a proposed Superfund site, that consists of more than 8,000 acres. The site is roughly bounded by Ames Avenue to 'L' Street and from 45th Street and the west side of the central business district to the west bank of the Missouri River and south of the central business district in Omaha. Dodge Park and other parks in Iowa were sampled as part of prior studies and are listed in the CERCLIS; no areas in Iowa are known to be included in the area of investigation or the area targeted for cleanup. Any improvements in Nebraska along I-80 would require additional investigation with respect to this designated area. Contamination is primarily attributed to the former Asarco Plant.

TABLE 4-7
Regulated Materials Sites Located within or near the Area of Potential Impact

Code[a]	Risk	Name	Address	City/State
K, U	High	[2]Eldon's Amoco	2704 S. 24th St.	Council Bluffs, IA
K, U	High	Kwik Shop #527	3632 Ave G.	Council Bluffs, IA
	High	Omaha Lead Site		Omaha, NE
G, I	Moderate	Iowa Interstate Railroad	2722 South Ave.	Council Bluffs, IA
G, I	Moderate	Oil Tank Farm	I-29 and Iowa Hwy 92	Council Bluffs, IA
	Moderate	Railroad Yard	South Expressway and I-80/I-29	Council Bluffs, IA
E, G, I, S	Moderate	Warren Distribution	2849/2850 River Rd.	Council Bluffs, IA
K, U	Low	Anderson Amoco Food Shop	1759 Madison Ave.	Council Bluffs, IA
U	Low	Anderson Trucking Services Inc.	3540 14th Ave.	Council Bluffs, IA
K, U	Low	Andrew's Lounge	1210 N. 25th St.	Council Bluffs, IA
K, U	Low	Auto Convoy	220 29th Ave.	Council Bluffs, IA
G, I	Low	Bemis Company Incorporated	3514 S. 25th St.	Omaha, NE

TABLE 4-7
Regulated Materials Sites Located within or near the Area of Potential Impact

Code[a]	Risk	Name	Address	City/State
D, I, Q	Low	Better Quality Cassettes, Former Site Of	2101 S. 35th St.	Council Bluffs, IA
I	Low	Boyer's Diesel	2420 S. 24th St.	Council Bluffs, IA
U	Low	Bucky's Express	2765 S. 13th Ct.	Omaha, NE
G, I, CC	Low	Cari Pre-Leased Furniture	116 29th Ave.	Council Bluffs, IA
K, U	Low	Casey's #34	511 23rd Ave.	Council Bluffs, IA
I	Low	Cathy McIntyre NP Dodge Real Estate	1730 Madison Ave.	Council Bluffs, IA
K, U	Low	Central Transport	3000 S. 11th St.	Council Bluffs, IA
CC, Q, I	Low	Chevron Chemical Company (former site)	201 35th Avenue	Council Bluffs, IA
AF	Low	Community Christian School	3657 Ave. G.	Council Bluffs, IA
K, U	Low	Council Bluffs Service Center	3003 S. 11th St.	Council Bluffs, IA
U, E, I	Low	Council Bluffs Water Works	2000 N. 25th St.	Council Bluffs, IA
G, I	Low	Cresline Plastic Pipe Co	2100 S. 35th St.	Council Bluffs, IA
K, U	Low	Darrahs Apco INC	3607 9th Ave.	Council Bluffs, IA
G, I	Low	Dillards (Oklahoma Installation)s	1751 Madison Ave.	Council Bluffs, IA
G, I	Low	Eagle Systems	3101 Blake St.	Omaha, NE
U	Low	Eddy's	3434 Nebraska Ave.	Council Bluffs, IA
U	Low	Eddy's 2713	2713 S. 24th St.	Council Bluffs, IA
K	Low	Former Derby Station	1320 N. 25th St.	Council Bluffs, IA
K, U	Low	Fran Oil Co.	1839 Madison Ave.	Council Bluffs, IA
G, I, U	Low	Frito-Lay Inc.	3919 W. Broadway	Council Bluffs, IA
G, I	Low	Henry Doorly Zoo	3701 S. 10th	Omaha, NE
K, U	Low	Holiday Station Store #59	3601 W. Broadway	Council Bluffs, IA
U	Low	I-80 Pump Station	3000 River Rd.	Council Bluffs, IA
I	Low	Independent Trailer Manufacturer	2918 S. 9th St.	Council Bluffs, IA
I, K, U	Low	Iowa DOT	1700 N. 25th St.	Council Bluffs, IA
	Low	Jim Hawk Truck Trailer Inc.	2917 S. 9th St.	Council Bluffs, IA
I	Low	Larry's Diesel Repair	2910 S. 7th St.	Council Bluffs, IA
I, AF	Low	Loess Hills Christian School	2755 Ave. N.	Council Bluffs, IA
I	Low	Mid American Energy Co—Council Bluffs	3003 S. 11th St.	Council Bluffs, IA
U	Low	Oil Exchange / Eddy's	1839 ½ Madison Ave	Council Bluffs, IA
G, I	Low	Omaha Standard Truck and Equipment Co.	2109 S. 35th St.	Council Bluffs, IA
I	Low	Peavy Grain Company	2600 S. 4th St.	Council Bluffs, IA
K, U	Low	Pilot Travel Center	2647 S. 24th St.	Council Bluffs, IA
G, I, V	Low	Professional Tank Lining Incorporated	2804 South Ave.	Council Bluffs, IA

TABLE 4-7
Regulated Materials Sites Located within or near the Area of Potential Impact

Code[a]	Risk	Name	Address	City/State
K, U	Low	Pump and Munch	1220 N. 25th St.	Council Bluffs, IA
	Low	Sapp Brothers Texaco	2608 S. 24th St.	Council Bluffs, IA
I	Low	Scouler-Welsh	3600 1st Ave.	Council Bluffs, IA
	Low	Selectrucks of Omaha, Omaha Truck Center	1208 S. 31st St.	Council Bluffs, IA
K, U	Low	Sinclair Retail	2709 S. 24th St.	Council Bluffs, IA
K, U	Low	Sinclair Retail #14030	1305 N. 25th St.	Council Bluffs, IA
K, U	Low	Speedee Mart Texaco	3624 9th Ave.	Council Bluffs, IA
E	Low	Speedo Truck Lube	2601 S. 24th St.	Council Bluffs, IA
K, U	Low	Sunshine Mini Mart	3609 9th Ave.	Council Bluffs, IA
U	Low	Taylor Quick-Pic	1836 Madison Ave.	Council Bluffs, IA
U	Low	Ted Praeker Green Houses	2807 South Ave.	Council Bluffs, IA
U	Low	The Pillsbury Company	2600 S. 4th St.	Council Bluffs, IA
G, I	Low	Walgreen's #1781	301 W. Bennett Ave.	Council Bluffs, IA
G, I, V, AA	Low	Wayne's Oil Service, Former Site of	2804 South Ave.	Council Bluffs, IA
G, I	Low	West Iowa Tool & Die Inc	257 29th Ave.	Council Bluffs, IA
CC	Low	Westwood Golf Course—Council Bluffs	3700 9th Ave.	Council Bluffs, IA
G, I	Low	Whitehill Trailer Repair	251 29th Ave.	Council Bluffs, IA
K, U	Unknown	Westend Service	3778 Ave. G	Council Bluffs, IA

[a] Code: Defines the type of site in various databases. Several sites were identified in the field and therefore do not have database codes.

AA-Corrective Action Report (CORRACTS)
AF-Federal Insecticide, Fungicide, and Rodenticide Act / Toxic Substance Control Act (FIFRA/TSCA)
CC-CERCLIS No Further Remedial Action Planned (CERC-NFRAP)
D-Hazardous Materials Information Reporting System (HMIRS)
E-Emergency Response Notification System (ERNS)
G-Resource Conservation and Recovery Information System (RCRIS-SQG)
I-Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)
K-Leaking Underground Storage Tank Database (LUST)
Q-Resource Conservation and Recovery Information System (RCRIS-LQG)
S-Toxic Chemical Release Inventory System (TCRIS)
U-Underground Storage Tank Database (UST)
V-RCRA Administrative Action Tracking System (RAATS)

Mitigation

The Tier 1 analysis of regulated material sites revealed the presence of potentially contaminated properties (e.g., gas stations, vehicle maintenance shops, schools, factories, etc.) within or near the area of potential impact. A site's relative risk is associated with its potential for contamination, as well as the status of site remediation if contamination occurred. Any sites within the area of potential impact that are considered to have high, moderate, or unknown risk would require further analysis in Tier 2 environmental studies if it is likely that the sites would be disturbed by construction of the CBIS Improvements Project.

Coordination would be performed with appropriate regulatory agencies such as the USEPA, NDEQ, and IDNR. Iowa DOT and NDOR would work with the regulatory agencies to ensure that proper cleanup of any contaminated sites was completed before road construction would occur at the sites.

4.2.12 Energy

Energy includes fossil fuels, labor, and highway construction materials. Highway improvement projects can both consume and conserve fossil fuels. Consumption would occur as a result of both construction and operation of the project alternatives. Conservation would occur as a result of improved efficiency for travel. Energy consumption is typically not a key decision-making criterion. However, reducing energy consumption is generally a byproduct of other transportation improvement goals, such as reducing congestion and improving travel times and level of service.

No-Build Alternative

The No-Build Alternative would require indirect consumption of energy for processing materials, construction activities, and maintenance for the construction of MAPA's *2025 LRTP* components. Energy consumption by vehicles in the area may increase during construction due to possible traffic delays. Long-term energy consumption would also be expected to increase, as congestion would continue to worsen under the No-Build Alternative.

Preferred Alternative

Construction of the Preferred Alternative would require indirect consumption of energy for processing materials, construction activities, and maintenance for the lane miles to be added within the project limits. Energy consumption by vehicles in the area may increase during construction due to possible traffic delays.

When construction is complete, traffic congestion and turning conflicts will be minimized along the route and, therefore, vehicular stopping and slowing conditions will be reduced. Additional benefits would be realized from increased capacity and smoother riding surfaces. This would result in less direct and indirect vehicular operational energy consumption for the Preferred Alternative than for the No-Build Alternative. Thus, in the long term, postconstruction operational energy requirements should offset construction and maintenance energy requirements and result in a net savings in energy usage.

Mitigation

No mitigation is needed.

4.2.13 Visual Impacts

No-Build Alternative

While roadway improvements would occur under the No-Build scenario, no visual impacts are expected since the landscape is a mature urban area.

Preferred Alternative

Since the Preferred Alternative includes improvements to an urban interstate, the viewshed would not be adversely affected by the proposed changes. The existing facility dominates the

landscape, and would continue to do so. Those who could view the improved roadway are already adjacent to the existing roadway and visual resources would remain measurably unchanged.

Mitigation

No mitigation is needed.

4.2.14 Construction Impacts

No-Build Alternative

Construction impacts are expected to be short term and would be handled through standard construction practices, as specified in the Iowa DOT and NDOR construction manuals.

Preferred Alternative

The expected short-term construction impacts associated with the Preferred Alternative are identified below. Such impacts, though minor, would be managed as appropriate based on guidance from Iowa DOT and NDOR, through tools identified in the agencies' construction manuals. These tools would be employed to minimize impacts due to construction. Construction work associated with the 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. Construction impacts are generally of short duration and end shortly after project completion. They typically include effects upon the natural environment, air quality, noise levels, land use access, traffic, and solid waste.

Removing vegetation and topsoil during initial clearing, grubbing, and grading work presents the potential for erosion. Areas adjacent to the Missouri River and wetlands traversed by the project have the greatest potential for adverse water quality impacts. Drainage ditch construction can be a source of sedimentation to waterways. Temporary air-quality impacts may be caused by dust from the construction sites. Establishing aggregate crushing and washing operations or batch plants may affect water and air quality. Bridge construction can have a temporary adverse effect on the water quality in the Missouri River because of sediment suspension. More information on construction and operational impacts on surface waters can be found in Subsection 4.2.2, Water Quality Impacts.

Surface Water, Erosion, and Sediment Control

Typical operations associated with roadway construction include: clearing, grading, filling, demolition, and excavation; all of which increase the erosion potential of surface soils due to the reduction in vegetative cover and increased impervious areas resulting from compaction of soil by heavy equipment. Placement of structures in streams may increase turbidity (suspended solids) and sedimentation, and temporarily alter downstream hydraulics and substrate conditions. Mitigation tools, if properly implemented, can serve to minimize potential impacts on water quality that result from road construction. Proven tools per NDOR and Iowa DOT guidance are summarized in both Iowa DOT's and NDOR's *Construction Manuals*.

Construction-related erosion impacts would be minimized by:

- Staging construction to minimize the size of exposed areas open at the same time and the length of time each area is exposed
- Minimizing slope steepness and length, and reseeding and mulching slopes as needed during construction and at the completion of construction
- Revegetating stripped areas with approved erosion-control seed mix
- Employing temporary erosion control measures such as hay bales, silt fences, etc.
- Using a combination of silt curtains, gunderbooms, and cofferdams, where feasible, to minimize the transport of silt in the Missouri River

In-stream work may cause an increase in turbidity and sedimentation, and temporarily alter downstream conditions. Cofferdams (watertight enclosures) made of sheet piling combined with silt filtration (e.g., silt curtains or aquatic filter barrier systems known as "gunderbooms") surrounding in-stream pier work are highly effective techniques to minimize siltation. Any long-term increases in suspended sediments can reduce aquatic productivity by limiting photosynthesis, lowering oxygen levels, and covering food sources and fish spawning areas. In-stream bridge and culvert construction creates localized, permanent changes in habitat. However, habitat generally is affected only in small areas, and impacts should be relatively minor when the entire stream or river reach is considered.

Construction in or near waterways would be performed in accordance with both Iowa DOT's and NDOR's *Construction Manuals*. Stream crossings would be constructed during low– or normal-flow periods. Erosion control devices would be installed before erosion-prone construction activities begin. Temporary and permanent erosion control methods may include silt fences, retention basins, detention ponds, interceptor ditches, seeding and sodding, rip-rap of exposed embankments, erosion mats, and mulching. Disturbance of streamside vegetation would be kept to a minimum. Disturbed areas would be seeded or stabilized upon completion of construction.

The application of these mitigation measures would reduce turbidity and sedimentation effects upon the Missouri River to minor, short-term impacts.

Air Quality

Air quality impacts during construction would be limited to short-term increases of fugitive dust, particulates, and emissions from mobile sources.

- Fugitive dust is generated by construction equipment, such as haul trucks and earth moving vehicles.
- Particulates are matter resuspended by vehicle movement over paved and unpaved surfaces, dirt tracked onto paved surfaces from unpaved areas at access points, and material blown from uncovered haul trucks.
- Mobile-source emissions include engine exhaust from trucks and other construction equipment.

The primary potential construction impact on air quality would be fugitive dust (particulates) resulting from soil exposed to wind and traffic. Amounts of fugitive dust released by construction activities would vary depending on the construction location, the extent of activity, silt content, soil moisture, and wind speed. Construction work would generate fugitive dust that may be a nuisance in nearby areas. However, the contribution of the proposed project to the total suspended particulates in the surrounding area would be confined to the construction period.

Dust blowing from areas cleared or excavated for access or construction purposes can be minimized in several ways. Water can be applied to unpaved road surfaces, although the effectiveness depends on the frequency of application. It is estimated that watering an entire area twice daily would reduce dust emissions by as much as 50 percent. These measures would be employed as needed during construction of the proposed improvements.

Construction vehicles and equipment would also emit mobile-source emissions such as carbon monoxide, hydrocarbons, and nitrogen oxides. Ambient concentrations, however, would not be increased significantly by operation of construction vehicles and machinery.

Construction-related air quality impacts are anticipated to be minor.

Construction Noise

Trucks and machinery used for construction produce noise that may affect some land uses and activities during the construction period. Individuals inhabiting the homes along the proposed improvements would at some time experience perceptible construction noise from implementation of the project. Construction noise would be minimized by using mufflers on construction equipment. Air compressors would meet federal noise level standards and, if possible, be located away or shielded from residences and other sensitive noise receivers.

Traffic/Temporary Access

Road construction activities involve lane closures and detours. These activities interrupt normal traffic flow, and generally impede travel in the vicinity of road construction. During construction, road closures would be minimized to the extent possible. If road closures are necessary, a traffic management plan would be developed and implemented during the construction phase of the project to provide reliable access to residences, businesses, community facilities and services, and local roads. Iowa DOT and NDOR would coordinate construction activities, sequencing, and traffic management plans with fire, police, and emergency rescue services to minimize delays and response times during the construction period.

Access to properties would be maintained by staged construction temporary access roads or other appropriate means. Traffic may be stopped for short periods, temporarily inconveniencing motorists while construction equipment is moved on or across the highway. Emergency service routes and access for emergency vehicles would be maintained.

Regulated Materials

The contractor will dispose of grass, shrubs, trees, old pavement, miscellaneous debris, and other solid waste in accordance with state and federal regulations. Accidental spills of hazardous materials and wastes during construction or operation of the facility would

require special response measures. These occurrences would be handled in accordance with local government response procedures.

Utility Services

Construction activities would be coordinated with public utilities to avoid potential conflicts and minimize planned interruptions of service. When service interruptions are unavoidable, effort would be made to limit their duration.

Mitigation

Common mitigation measures could be used to lessen construction-related impacts. With respect to noise impacts, construction hours could be limited to reduce noise levels in the early morning and late evening hours.

Regarding air quality during construction, emissions due to vehicle delays, construction vehicles and equipment, and activities generating dust are not expected to change the "attainment" air quality status of the area but would be minimized to the extent possible. To minimize air quality impacts during construction, the following practices may be considered:

- Equipment would not be concentrated at locations near any sensitive receiver sites, and emissions testing could be employed to assure that no single piece of equipment would result in significant pollution concentrations.
- Construction contractors would be required to comply with the statutory regulations for the state for air pollution control and to receive permits, as needed.
- Construction contracts would stipulate adherence to requirements regarding open burning of grub material, fugitive dust, visible emissions, and permits.
- A schedule of watering would be developed and followed to control dust.

To minimize impacts on water quality, a pollution prevention plan will be implemented to reduce sediment and other pollutants from entering creeks and streams. The plan will comply with all guidance in the aforementioned construction manuals. The specific sediment, erosion control, and spill prevention measures for the Preferred Alternative would be developed during the detailed design phase and included in the plans and specifications phase. Such a plan may include installation of silt fences, detention basins, temporary seeding, buffer strips, or other features used in various combinations as well as the placement of drums of petroleum products in secondary containment to prevent leakage onto ground surfaces.

Redirection of traffic may be required during construction. This would temporarily alter travel patterns and accessibility. Also, short-term traffic delays might result from the movement of construction equipment and vehicles. A traffic control plan would be developed prior to construction and details would be developed during future roadway design. As part of this process, the traffic redirection plan would minimize the amount of disruption while ensuring the safety of motorists. This would include using appropriate signage and construction barriers to alert motorists to altered traffic conditions. In addition, coordination with emergency service providers and schools would be conducted prior to changing any access.

4.3 Relationship of Short-Term Uses versus Long-Term Productivity

This section examines the short-term costs and long-term gains for the project alternatives. All highway projects require the investment or commitment of some part of resources found in the environment. "Short-term" refers to the immediate consequences of the project; "long-term" relates to its direct or indirect operational effects on the current population and future generations.

Short-term consequences of the proposed alternatives include:

- Relocation of residences and impacts on businesses
- Removal of private properties from tax rolls, thereby reducing the property tax base
- Conversion of wildlife habitat to transportation use
- Conversion of floodplains and wetlands to transportation use
- Inconvenience to residents, business owners, suppliers, and employees during construction

Long-term benefits that may be realized from the recommended alternative include:

- An efficient transportation corridor through the heart of the Council Bluffs/Omaha area
- Improved motorist safety and convenience, and reduced energy usage
- The potential for enhanced employment growth for the region, including increased wages and salaries
- The potential for new tax base in the Study Area by providing transportation infrastructure to accommodate movement of goods and services and orderly residential and commercial development
- Regional economic development including growth in the commercial/industrial sector as the movement of goods both to and from production facilities is maximized
- Reduced current and forecasted traffic congestion on the road network

The project is based on comprehensive transportation planning that considers the need for present and future traffic movement within the context of existing and future land use development and the environment. Therefore, the local short-term impacts and use of resources by the proposed action are consistent with the maintenance and enhancement of long-term productivity.

Since the No-Build Alternative includes the construction of projects identified in MAPA's *2025 LRTP*, it has many of the same short-term uses. However, since it is not a comprehensive set of improvements designed to meet the long term needs of the Council Bluffs/Omaha metropolitan area, it would not result in the same long-term benefits as the Preferred Alternative.

4.4 Irreversible and Irretrievable Commitments of Resources

Both the Preferred and No-Build alternatives would involve committing a range of natural, physical, human, and fiscal resources. Land acquired for constructing the proposed project is

considered an irreversible commitment during the period in which the land is used for highway purposes. ROW requirements would convert land from residential, commercial, and natural environmental resource uses. Wildlife mortality would be limited because of the corridor's urban nature. Adjacent land uses would be expected to experience some minor increase in noise, but the structures most affected by the Preferred Alternative are already adjacent to the interstate system.

Fossil fuel, labor, and highway construction materials—such as steel, cement, aggregate, and asphalt—would be required during construction. Considerable labor and natural resources would be used in fabricating and preparing construction materials. Those resources are generally irretrievable, but their use would not have an overall adverse effect on continued availability.

The Preferred and No-Build alternatives would require irretrievable federal, state, and local funding. Land converted from private to public uses would displace local tax revenues.

Resources are committed based on the concept that residents in the Study Area, region, and states would benefit from improved capacity and safety resulting from the Preferred Alternative. Improved access to businesses and community services, increased safety, reduced travel times, and increased economic development are expected to outweigh the commitment of resources in the long term.

Selection of the No-Build Alternative would not require the same order of magnitude of resource commitment as that in the Preferred Alternative. Although land would still be converted to transportation use, materials would be required for construction, and funding for the improvements in MAPA's *2025 LRTP* would be irretrievable, the No-Build Alternative would not solve any of the transportation needs constituting the purpose and need of the CBIS Improvements Project.

4.5 Summary of Environmental Consequences

This section summarizes the environmental effects of the alternatives under consideration. These effects would be minimized to the extent possible using appropriate design techniques and considerations, construction methods, and mitigation measures, as discussed in this document and companion technical reports[26].

4.5.1 No-Build Alternative

The No-Build Alternative consists of no new major construction along the interstate corridor. Improvements would be limited to short-term restoration work (maintenance improvements) needed to ensure continued bridge and roadway pavement integrity. The design of the roadway, including location, geometric features, and current capacity constraints, would remain unchanged. Minor operational improvements could be expected, such as deployment of a traffic management system and minor improvements at high-volume ramp intersections. MAPA's *2025 LRTP* also calls for the construction of seven new two-lane roadways throughout southern and eastern Council Bluffs.

26 Available for review at the Iowa DOT Office of Location and Environment in Ames, Iowa

Under the No-Build Alternative, it is assumed that committed and planned improvements (as detailed in Iowa DOT and Nebraska DOR multiyear programs, and in MAPA's *2025 LRTP)* will be undertaken. See Subsection 2.3.2.

The No-Build Alternative would not address the purpose of and need for the project and would result in the following consequences:

- Capacity and operational problems are expected to expand and worsen. Without improvements to address capacity and operational issues, congestion on the roadway would worsen to LOS F in some places, resulting in poor traffic flow during peak periods and increasingly unreliable travel times for people, goods, and services. The lack of capacity and operational efficiency would fail to accommodate 2030 travel forecasts.
- Functional design, such as shoulder width, lane balance, ramp spacing, and operations associated with the interchange configurations would continue to be deficient.
- The deteriorating condition of the roadway would not be improved.
- Safety needs would not be addressed, allowing the corridor to continue to exceed the statewide average for crashes in some places.
- Ongoing and planned development in the Study Area is expected to lack the support provided by an adequate transportation system.

The potential ROW impacts for the No-Build Alternative would be minor and scattered throughout the Study Area. No relocations would be anticipated; therefore, no substantial changes in land use would occur. There would be no improvements to interstate access. Regional traffic would continue to use local neighborhood roads to access the interstate creating additional noise and safety issues in some neighborhoods. There would be no direct impacts to the Community Christian School or The Seventh-Day Adventist Church. Community cohesion is not expected to change.

No water quality impacts are expected but there could be minor wetland and floodplain impacts associated with construction of the improvements in MAPA's *2025 LRTP*. No impacts to biological resources or threatened and endangered species are expected but the improvements in MAPA's *2025 LRTP* will involve construction in the Loess Hills. No known historic structures or archeological sites and no known Section 4(f) properties would be impacted. The No-Build Alternative would need to account for potential regulated sites in planning their roadway alignments.

For comparison purposes, analysis was conducted to determine the 66-dBA and 71-DBA contours from the edge of ROW for the existing roadway system based on current traffic data. Under No-Build conditions traffic would continue to increase along the existing interstate, and noise levels would worsen. The existing condition contour includes receiver locations that are currently incurring traffic noise levels approaching or exceeding NAC. Approximately 1,800 people living in residences and apartment complexes, and 500 employees working at businesses are predicted to be impacted by existing noise levels approaching or exceeding NAC.

4.5.2 Preferred Alternative

The Preferred Alternative aims to improve mobility through the I-80, I-29, and I-480 corridors to improve roadway conditions, reduce traffic congestion and crashes, strengthen system linkages, correct functional design problems, and accommodate planned development. Once implemented, these improvements would bring segments of I-80, I-29, and I-480 up to current engineering standards (Iowa DOT, NDOR, and AASHTO standards) and modernize the roadway to accommodate future traffic needs.

The proposed improvements would:

- Provide a transportation system with enough capacity and operational efficiency to accommodate 2030 travel forecasts
- Correct functional design and operational issues
- Improve the deteriorating condition of the roadway
- Address and reduce the occurrence of serious traffic accidents
- Support ongoing and planned development in the Study Area

The impacts associated with the proposed improvements are summarized in Table 4-8. The proposed improvements seek to avoid and minimize impacts to the socioeconomic and natural environment while providing the benefits of the proposed improvements.

Population forecasts show that Pottawattamie and Douglas Counties are growing substantially without major transportation improvements. Similar to the forecast population growth, MAPA estimates that employment in the Omaha/Council Bluffs area will continue to increase. Substantial development in the Council Bluffs and Omaha area is expected to continue, regardless of whether major transportation improvements are implemented.

The proposed improvements would use existing ROW throughout much of the corridor as improvements are made to an existing transportation facility. However, there would be direct conversion of land to transportation uses in areas of mainline widening and interchange reconstruction. The transportation use is consistent with the land use plans for the area. Within the area of potential impact of the Preferred Alternative would be 297 residences, 8 apartment complexes, and 62 businesses. Property value impacts are expected to be negligible, as potentially affected properties are adjacent to the interstate system. There are 1,121 acres within the area of potential impact, however actual ROW requirements are expected to range from 300–350 acres.

As the project consists almost entirely of improvements to existing roadway, access and continuity will remain virtually unchanged or be improved by the project. For this reason, very few businesses should face hardship due to proximity impacts. Businesses may in fact benefit from the addition of full access interchanges and improved conditions along the mainline of the corridor through increased traffic capacity and improved traffic flow and safety.

The Preferred Alternative would improve the transportation network by adding more capacity, improving access to the local road system and other modes of transportation, correcting design issues such as some left-hand exits, improving pavement conditions, and improving safety. The analysis of minority or low-income populations for the project alternatives demonstrates that these populations will benefit from improved access and safety

in their neighborhoods. Major municipal and public services would not be substantially affected by the Preferred Alternative. The displacement of one church and school however could impact the cohesiveness of some neighborhoods. However, overall community cohesiveness could be improved by reduced traffic in some neighborhoods.

Small amounts of riparian and upland vegetation do occur within the corridor, and some other impacts to natural resources may occur, however the most substantial environmental impacts are urban in nature: noise impacts and regulated material impacts.

Noise impacts could occur for structures located near the roadway. Approximately 1,000 structures (residences, apartment complexes and businesses) are located in areas at or approaching NAC. However, most of those structures are experiencing similar noise levels under current conditions. A complete noise analysis will be conducted as part of the Tier 2 studies.

There are 58 regulated materials sites within the area of potential impact. These sites were identified using parcel data, aerial photography, field reconnaissance, and an Environmental Data Resources (EDR) database search. As the actual roadway alignment is refined, any sites within the actual footprint will require additional consideration.

While limited, other natural resource impacts are associated with the Preferred Alternative. Some impacts to water resources, including streams, wetlands, and floodplains would occur with the implementation of the CBIS Improvements Project. Three waterways and the associated floodplains would be crossed by the project, and approximately 4 miles of floodplains would be affected by transverse crossings. Permits would be required for the construction within wetlands and floodplains. While no occurrences of threatened or endangered species have been confirmed within the area of potential impact, input from USFWS, IDNR, and NGPC identified 11 potential species that will require analysis during Tier 2.

TABLE 4-8
Summary of Impacts

Estimated Resource Impacts [a]	Preferred Alternative [b]	No-Build Alternative
Existing and Future Land Use	Minor conversion to transportation use from other land uses, and spot changes in development opportunities near I-480, along I-29 near Avenue G, and the area north of I-80.	No substantial changes in land use would be expected to occur
ROW [c] ROW Acquisition (acres) Displacements Residences Apartment complexes Businesses	 1,121 297 8 62	Proposed new roadways in the Long Range Transportation Plan would result in ROW acquisition, including near U.S. 6, Avenue G, I-80/I-29, U.S. 275, 24th Street, and Madison Avenue[d]. Additionally, if the proposed CBIS project is not constructed, major arterials will have to be widened to accommodate future travel.
Economics	Increased profits due to more efficient travel and increased safety, increased opportunities in industries that supply materials and overhead items	No improvements to access or safety, which may reduce long-term attractiveness to businesses
Business/Employment	Employment and earnings from construction, temporary employment increases during the construction period (12.7 jobs/million $ construction), potential long-term job creation in certain industries (motor freight transport, warehouse, wholesale trade, and engineering-architectural services).	No long-term change in employment
Tax Impacts	Increased local tax revenues due to construction	Minor tax change due to conversion of some land to transportation use
Property Values	No declines are expected.	Spot changes only
Environmental Justice Access	Council Bluffs as a whole is 3 percent minority, 4.5 percent Hispanic/Latino, and has a median household income (1999) of $36,221. Within the EJ Study Area, six Iowa block groups have minority populations (8.0 percent were Hispanic and 5.9 percent minority) substantially higher than the general population of Council Bluffs. Omaha as a whole is 17.1 percent minority, 7.5 percent Hispanic/Latino, and has a median household income of $40,006. Within the EJ Study Area, ten Nebraska block groups have minority populations (30.7 percent Hispanic, 7.2 percent minority) substantially higher than the general population of Omaha. The median household income in block groups within the EJ Study Area is $42,804 in Iowa, and $30,919 in Nebraska. Eight block groups in Iowa and seven in Nebraska have higher poverty levels than city averages. Providing access at West Broadway remains under consideration and could affect these populations. The changes aim to reduce the amount of cut-through traffic from local roads, and concentrate this traffic on arterials, improving the safety and quality of life for those living near the interstate.	Traffic, including truck traffic, would continue to travel through the residential areas to access I-29 at the partial interchanges at Avenue G and 35th Street. Additionally, if the proposed CBIS project is not constructed, major arterials will have to be widened to accommodate future travel. Such projects could result in direct impacts to low-income and/or minority populations.
Neighborhoods, Community Services, Facilities Access Institutions Cohesion	 Access and continuity would be minimally affected. Overall, the changes would divert traffic from local roads onto arterials, ultimately facilitating movement and improving safety. Communities severed by construction of the interstate highway would remain unchanged. The project would not isolate or change the boundaries of any neighborhoods 1 church, 1 school directly affected. Potential traffic changes and displacements may diminish community cohesion between the UP RR Bridge and the I-29 25th Street interchange.	 Some access impacts could be associated with road widenings, but be dispersed across the region. No known churches or schools would be directly impacted. The No-Build Alternative would not affect community cohesiveness.
Community Services and Facilities	No direct effect on emergency/health care services; long-term potential improvements in emergency response times.	No direct effect on emergency/health care services; potential increase in response times due to increased congestion.
Bike/Pedestrian Considerations	No direct effect. While detours might be necessary during construction, all trail access and continuity would be maintained.	Changes to the local road network in the No-Build Alternative may affect existing trail network.
Transportation Considerations	Reduced congestion, updated geometrics, and improved safety. Increased reliability and access for other modes of transportation.	Congestion would worsen and no improvements to safety or geometrics would be made. Changes to the local road network may affect connectivity both between roadways as well as between alternate modes of transportation.
Farmland	No substantive impact.	No substantive impact.
Noise Receiver Residences Apartment complexes Business	 788 45 48	Under existing conditions, the following impacts occur: 347 15 21

TABLE 4-8
Summary of Impacts

Estimated Resource Impacts [a]	Preferred Alternative [b]	No-Build Alternative
Wetlands (acres) [f]	57	Minor wetland impacts may occur along U.S. 275, and due to the construction of a new two-lane roadway northeast of Lake Manawa, and east of Council Bluffs. Additionally, without the construction of the CBIS improvements, other roadway improvement projects would be necessary along the existing road network and could impact existing wetlands.
Waterways (ft) [g]	8,700	No groundwater or surface water impacts are expected. Minor additional runoff may occur. During construction, new stream crossing and temporary construction impacts on local waterways may occur.
Floodplain		Individual projects would result in transverse encroachments of the 100-year floodplain.
Acres transverse	425	
Acres longitudinal [h]	65	
Habitat Areas (acres) [i]	43	No substantive impact MAPA's *2025 LRTP* improvements to Madison Avenue, North Broadway, U.S. 6, U.S. 275 south of Iowa 92, Iowa 92 east of Council Bluffs, and several new two-lane roadways would require construction within the Loess Hills. Additionally, without the construction of the CBIS improvements, other roadway improvement projects would be necessary along the existing road network and could impact the Loess Hills.
Threatened or Endangered Species (species) [j]	Limited or none expected[i]	Potential for disruption of habitat or displacement of threatened and endangered species particularly near construction of new roadways east of Council Bluffs and near Lake Manawa. Additionally, without the construction of the CBIS improvements, other roadway improvement projects would be necessary along the existing road network and could impact critical habitat.
Architectural/Historic Resources (sites) [k]	6	No known effect on architectural/historic resources.
Archaeological Resources (sites) [l]	4	No known effect on archaeological resources.
Potential Section 4(f) Resources (sites) [m]	13	No known effect on 4(f) properties.
Parks/Recreation Sites	9	
Historic Structures	4	
Regulated Materials (sites) [n]	58	Potential impacts on regulated material sites, especially refueling stations near intersections and widenings of major urban arterials.

[a] Impacts were conservatively estimated using database information and field reconnaissance. No intensive-level studies for determination of detailed impacts were performed in Tier 1. Impacts could range from none to the estimated maximum values listed.

[b] Resource locations were plotted on an aerial photograph, and impacts were predicted based on proximity to the area of potential impact. Impacts due to No-Build Alternative would be caused by development and other activities even if the project were not constructed since it includes planned improvements from MAPA's *2025 LRTP*.

[c] ROW and displacements estimated from parcel data and aerial photographs identifying buildings. Right-of-way refers to new ROW required for the improvements.

[d] These new roadways would be required under either alternative. If the interstate is not improved, ultimately, other major arterials (not currently in any transportation plans) would need to be widened to accommodate increased travel demand.

[e] Noise receiver impacts estimated from planning level noise analysis and aerial photographs identifying buildings. Some of these receiver locations are currently impacted by traffic noise and others may need to be acquired. Consequently, fewer receivers would be potentially affected by the project.

[f] Wetland acreage impacts estimated from NWI data, field determinations of NWI areas and other observations (no delineations were performed), and aerial photographs.

[g] Waterway length impacts estimated from aerial photographs and IDNR rivers/streams database.

[h] Floodplain acreage impacts estimated from FEMA Q3 database and aerial photographs.

[i] Habitat only includes riparian acreage impacts estimated from aerial photographs and IDNR rivers/streams database.

[j] Input from USFWS, IDNR, and Nebraska Game and Parks Commission identified threatened or endangered species that might occur within or near the proposed Study Area. In-depth fieldwork as needed to verify presence or absence of potential species will be completed during Tier 2.

[k] Architectural/Historical Site impacts estimated from Tallgrass Historians reconnaissance survey.

[l] Archaeological resource impacts estimated from Iowa OSA and NSHS data and a Phase I survey by Tallgrass Historians.

[m] Potential 4(f) resource impacts estimated from parcel data, various public maps and websites, IDNR data, and Tallgrass Historians reconnaissance survey.

[n] Regulated material site impacts estimated from parcel data, aerial photographs, field reconnaissance, and EDR database.

4.6 Summary of Impacts Associated with the Preferred Alternative Decisions—I-29 Access at West Broadway Interchange, I-29 / I-80 Overlap Cross Section, and I-80 Missouri River Bridge Location

Table 4-9 summarizes the environmental effects associated with two of the specific construction decisions that should be made in Tier 1. These decisions are described in detail in Section 2.5 and include the provision of access versus no direct access at Broadway from I-29, and the combined freeway versus dual divided concepts for the I-80/I-29 overlap section. Because each of the build decisions still consists of multiple concepts, the effects of each are shown as a range of potential impacts. The numbers in the table are representative of the impacts associated with each decision. While engineering refinements may result in slight changes (decreases or increases) these estimates provide sufficient social and environmental impact information, such that, when taken into consideration along with engineering, cost, and constructability factors, allow for selection of an alternative.

There is currently no direct access from I-29 to and from West Broadway. The provision of such access would result in higher residential displacements and regulated materials impacts. The ROW requirements, Section 4(f), wetland, and floodplain impacts are comparable across both the access and no-access options.

In the overlap section, impacts associated with the dual divided concept are generally higher than the combined concept. Impacts on wetlands, Section 4(f) sites, and regulated materials sites are comparable, however, the dual divided concept requires more floodplain disturbance, considerably more residential displacements, and likely more ROW.

TABLE 4-9
Summary of Impacts—Decisions Associated with the Preferred Alternative (Broadway Access, Overlap Section)

	I-29/ I-480/West Broadway System Interchange		Overlap Section[b]	
Resource[a]	**Existing Access**	**Broadway Access**	**Combined Section**	**Dual-Divided Section**
Right-of-Way[c]	40 acres impacted	34–39 acres impacted	138–186 acres impacted	152–195 acres impacted
Displacements	4 Businesses	3–4 Businesses	15–25 Businesses	17–25 Businesses
	52 Residences	63–64 Residences	33 Residences	41–44 Residences
	4 Separate Apartment Complexes Partially Impacted	3 Separate Apartment Complexes Partially Impacted		
Wetlands (acres)	<1	<1	12–13	13
Floodplain (acres)	3	3–4	179–186	188–198
Potential 4(f) Resources	Parks/Recreation: 4 Sites, 7 acres impacted	Parks/Recreation: 4 Sites, 4 acres impacted	Parks/Recreation: 2 Sites, 24–45 acres impacted	Parks/Recreation: 2 Sites, 27–40acres impacted
	Potential Historic Structure: 1 Site	Potential Historic Structure: 1 Site	Archaeological Sites: 3–4 Sites	Archaeological Sites: 3–4 Sites
			Potential Historic Structure: 0–1 Sites	Potential Historic Structure: 0–1 Sites
Regulated Material Sites (#)	5	7	24–29	25–29

[a] Only resources that show distinguishable differences in impacts are shown for comparison. The total impacts associated with the Preferred Alternative are documented in Table 4-8. The impacts in this table are intended to demonstrate the differences in impacts associated with the two decisions that are being made at Tier 1.

[b] The impacts discussed for the "Overlap Section" actually refer to all of Segments 2 and 3 as shown in Figure 2-4.

[c] Right-of-way refers to new ROW required for the improvements.

The expansion of the I-80 Missouri River Bridge north– or southward results in similar environmental impacts on floodplains and trails. The design of either concept would be the same west of Riverview Boulevard in Nebraska, thus the Nebraska impact differences would be between Riverview Boulevard and the Missouri River. The differentiators on this decision are the impacts on Section 4(f) resources and constructability concerns (see Table 4-10). Expansion to the north results only in impacts on land owned by the Henry Doorly Zoo, Deer Hollow Park, and the Lauritzen Gardens (the portion of affected land is private and would not be a 4(f) resource so it is not listed on the table); whereas a southward expansion, in addition to impacts to the zoo proper, would also affect more property at the WHTC in Council Bluffs. Constructability issues arise with the south expansion because of the difficulty in tying into the Nebraska approach roadway. The only constructability issues to the north would be the need for retaining walls near River Road in Council Bluffs to avoid a warehouse.

TABLE 4-10
Summary of Impacts—Decisions Associated with the Preferred Alternative Missouri River Crossing

	Missouri River Crossing	
Resource[a]	**North Expansion**	**South Expansion**
Displacements	0-2	0-2
Potential 4(f) Resources	Western Trails Historic Center Henry Doorly Zoo (property only)	Additional land at Western Trails Historic Center Henry Doorly Zoo (property and structures)
Local Road Impacts	Eastern or western shift of Riverview Boulevard required	Eastern or western shift of Riverview Boulevard required
Constructability Issues	Retaining walls near River Drive	Difficult tie-in to the existing Nebraska approach road

[a] Not all resources are included in the table; the total impacts associated with the Preferred Alternative are documented in Table 4-8. The impacts in this table are intended to demonstrate the differences in impacts associated with the Missouri River Crossing decision that is being made at Tier 1. Only those resources that resulted in impacts and serve as differentiators are displayed for comparison purposes.

Section 4 Figures

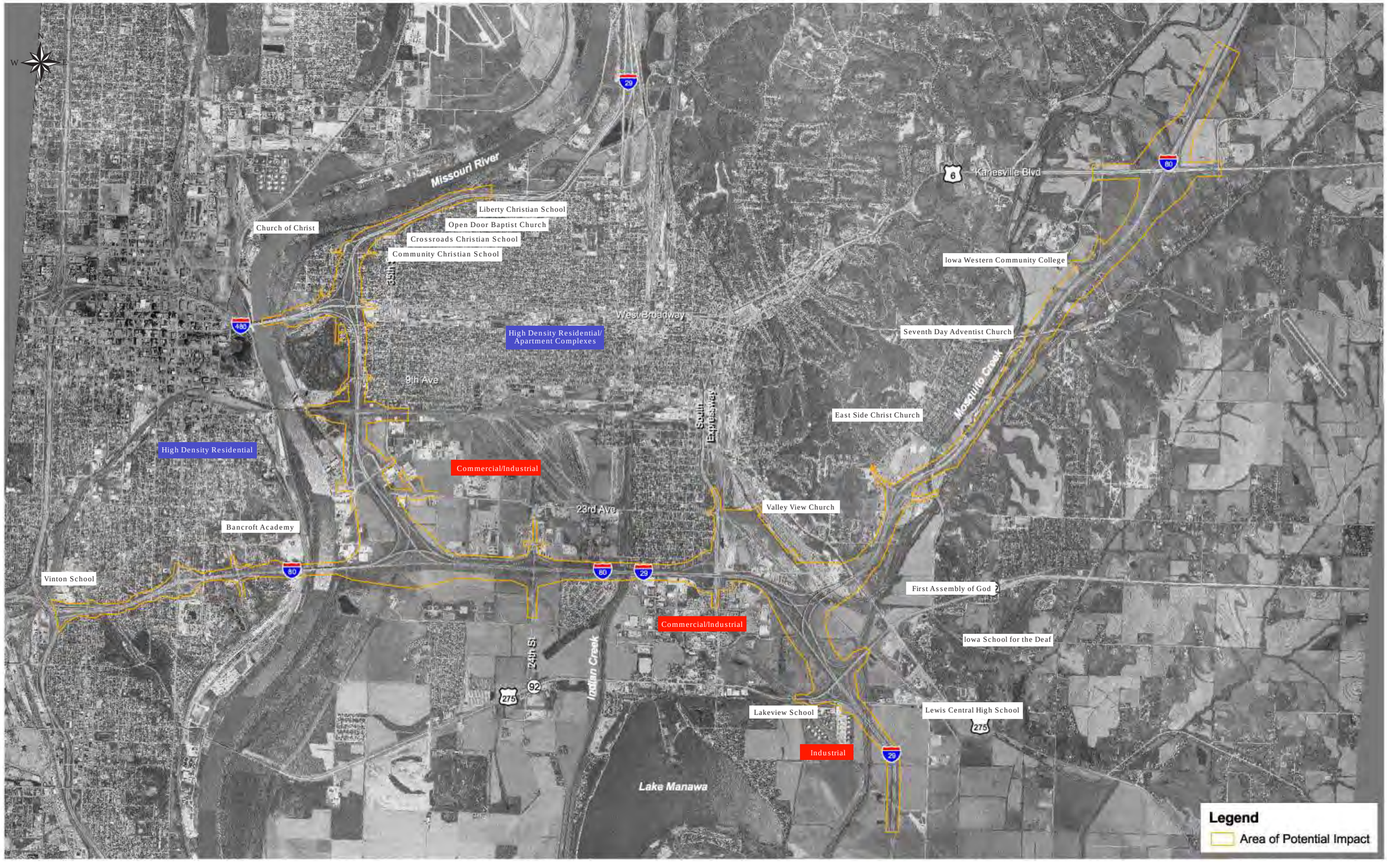


Figure 4-1
Potential Land Use, Residential, and Business Impacts

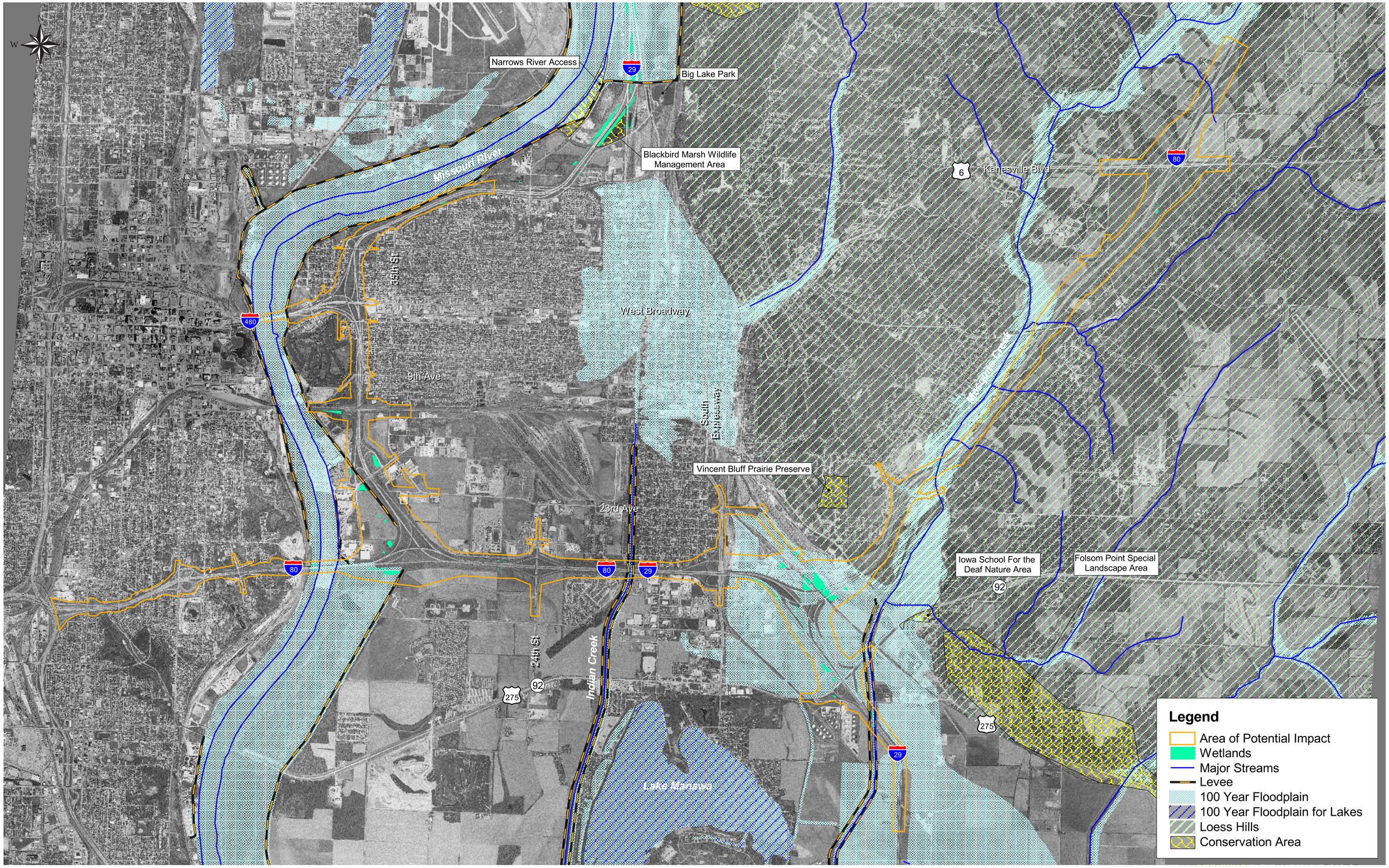


Figure 4-2
Natural Environment - Potential Impacts

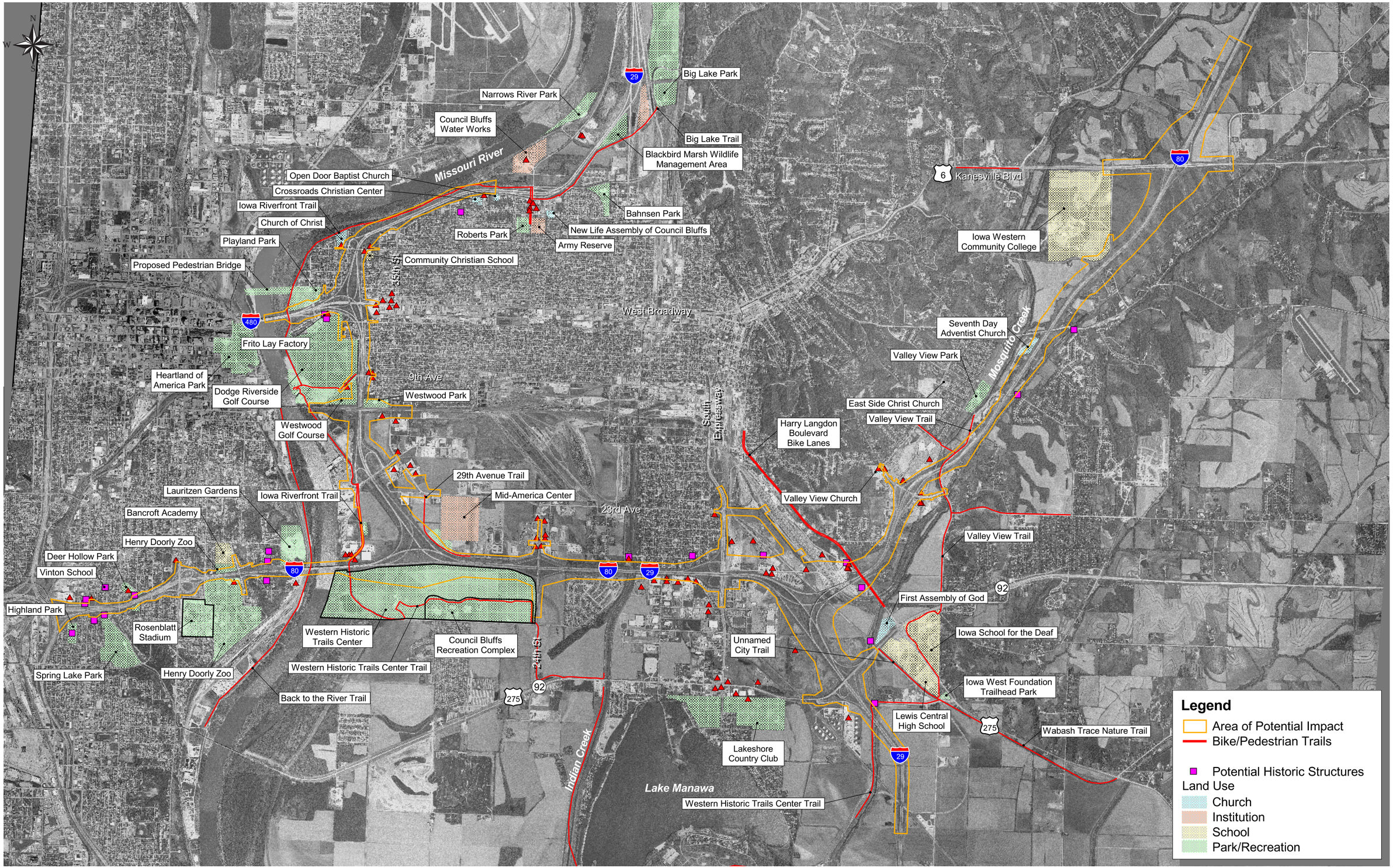


Figure 4-3
Built Environment - Potential Impacts

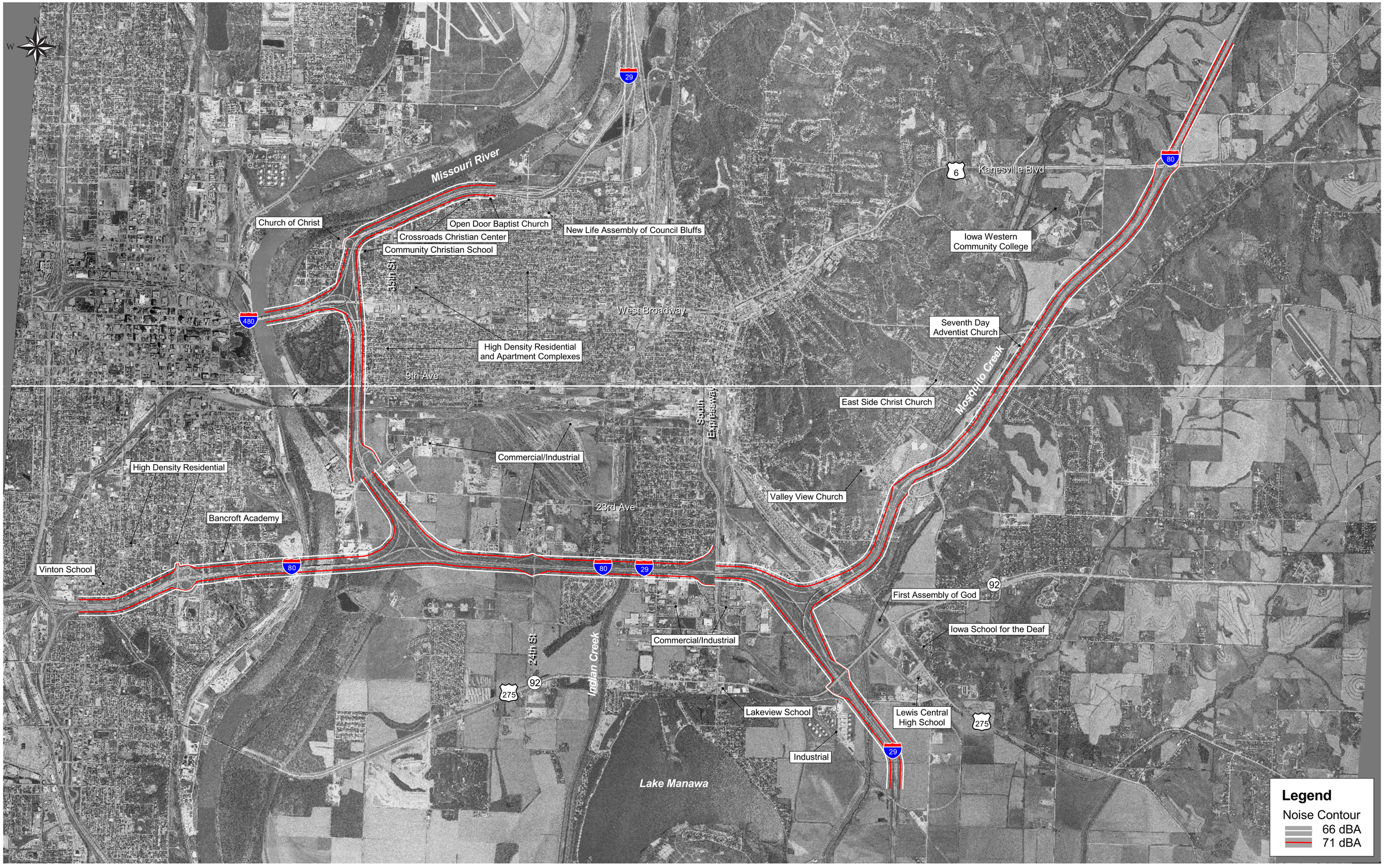


Figure 4-4
66-dBA and 71-dBA Noise Contours - Existing Conditions

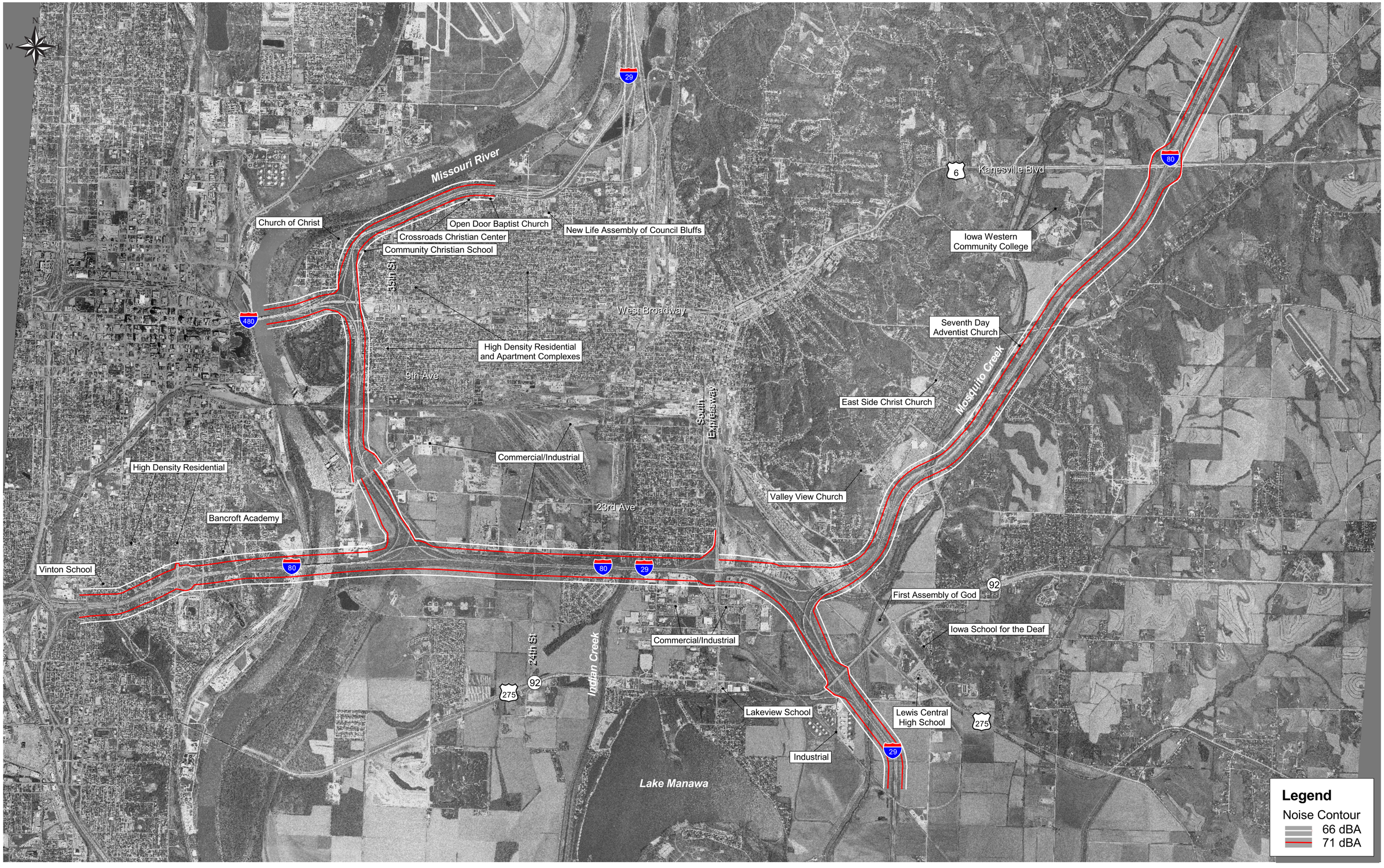


Figure 4-5
66-dBA and 71-dBA Noise Contour - Construction Alternative

Section 5

SECTION 5

Comments and Coordination

Since the CBIS Improvements Project began, the project team has met with representatives from federal and state resource agencies, county and city officials, transportation providers, the MPO, business and civic groups, and local residents. Through a structured coordination and communication program designed to encourage maximum input, a full-range of opportunities for meaningful input was provided. Overall, the coordination program was tailored to three primary audiences: agency and elected officials, interested groups, and the public. This section summarizes the agency coordination and public involvement that occurred during preparation of the Draft EIS.

5.1 Federal, State, and Local Agency Coordination

At the beginning of the study, two groups were established to provide a forum to discuss the project and solicit comments from various agencies and elected officials. They were the Resource Agency Group, or the "NEPA 404 Merger Group," and the Advisory Committee. The Resource Agency Group used the regularly scheduled NEPA/404 Concurrence Process meeting forum to meet and discuss the project. The Advisory Committee met at critical points during project development. Both groups provided input to the process, including local perceptions of transportation needs/issues, assistance in obtaining data, study approach, and study output review. Following is an overview of these two groups and their role in the study.

5.1.1 Resource Agency Coordination

Federal, state and local agencies (see Table 5-1) have been involved in the study process. At the project's onset, in March 2002, agencies received an Early Coordination packet to familiarize them with the Study Area and project background. The packet contained topographic and road maps of the proposed Study Area, an introduction to the project, and a discussion of the tiered environmental process proposed for the project. The Early Coordination packet satisfied the Iowa Intergovernmental Review (IIR) process. A Notice of Intent (NOI) was published in the Federal Register on August 21, 2002. In January 2003, a scoping packet was distributed to agencies. The scoping packet contained background information and gave the agencies the opportunity to voice issues and highlight potential areas of concern. The packet also contained an invitation to the January 23, 2003, public meeting to discuss issues of concern, see Subsection 5.2.1. Ongoing coordination with the USCG began during early coordination. The USCG is serving as a cooperating agency on the preparation of this Draft EIS. Table 5-1 summarizes the agencies with which coordination has occurred to date. Some agencies with specific jurisdiction were part of the NEPA/404 Merger Process. This group is known as the Resource Agency Group and is identified in Table 5-2.

TABLE 5-1
Agency Coordination

Agencies Contacted through Early Coordination	
Federal Aviation Administration	Federal Emergency Management Agency
Federal Transit Administration	Federal Railroad Administration
United States Department of Agriculture, Natural Resources Conservation Service	Iowa Department of Natural Resources
Department of Health and Human Services, Centers for Disease Control and Prevention	Department of Housing and Urban Development
U.S. Department of the Interior Office of Environmental Policy and Compliance U.S. Fish and Wildlife Service (Grand Island and Rock Island Offices) National Park Service	U.S. Army USCOE of Engineers Omaha District Rock Island District
U.S. Coast Guard	U.S. Environmental Protection Agency, Region 7
Nebraska Game and Parks Commission	Nebraska Department of Environmental Quality
Papio-Missouri River Natural Resources District	Nebraska Natural Heritage Program
State Historical Society of Iowa	Metropolitan Area Planning Agency
Pottawattamie County Conservation Board	City of Council Bluffs
Iowa Department of Economic Development	City of Omaha
Nebraska State Historical Preservation Office	

TABLE 5-2
Resource Agency Groups

Agencies Involved in the NEPA/404 Merger Process	
Federal Highway Administration–Iowa Division	Nebraska Game & Parks Commission
Federal Highway Administration–Nebraska Division	USCOE Omaha District Rock Island District
Iowa Department of Transportation	USCG
Nebraska Department of Roads	U.S. Fish and Wildlife Service (Grand Island and Rock Island Offices)
Environmental Protection Agency–Region 7	USEPA – Region VII
Iowa Department of Natural Resources	NRCS
Nebraska Department of Environmental Quality	Pottawattamie County Conservation Board

The role of the Resource Agency Group was to:

- Communicate issues and concerns associated with resources in the project area
- Provide data relevant to specific resource issues
- Review technical aspects of the study
- Serve as a communication link to and from the representative agencies and the group
- Achieve agreement on process
- Agree on defined Statewide Implementation Agreement Concurrence Points

The first NEPA/404 Concurrence meeting was held on January 30, 2003 at the Iowa DOT office in Ames. Because the project is a bistate effort, the NEPA/404 process seeks input from representatives of both Iowa and Nebraska. Although there were no Nebraska attendees, several agencies responded in writing, see Appendix A, Correspondence.

The purpose of the meeting was to present a project overview; discuss the NEPA/404 Merger and tiering processes; reach concurrence on purpose, need, and range of alternatives; discuss environmental constraints; and provide for any additional discussion items/areas of concern and next steps.

At the meeting, concurrence was achieved on Concurrence Points 1 (Purpose and Need) and 2 (Alternatives to be Analyzed). While no decisions were made at the meeting, the process for reaching concurrence on Concurrence Points 3 and 4 was discussed.

The second NEPA/404 Merger meeting for the CBIS Improvements Project was held January 28, 2004. The meeting addressed Concurrence Point 3 (Alternatives to be Carried Forward). Concurrence was achieved on Concurrence Point 3—Alternatives to be Carried Forward would include the Construction Alternative (Reconstruction of All or Part of the Interstate System), and the No-Build Alternative. The Construction Alternative represented the only alternative that can meet the project's purpose and need, and the No-Build Alternative was carried forward as a baseline of comparison. It was also agreed that the concepts that make-up the Construction Alternative are complete and will serve as a starting point for the Tier 2 process. At the meeting, it was determined that concurrence on the Preferred Alternative(s) (Concurrence Point 4) would be obtained as applicable for the individual Tier 2 segments. During the meeting, the three system decisions associated with the Tier 1 were discussed. No comment was received from the agencies regarding these decisions.

On July 13, 2004, because of changes in the outer boundary of the project, concurrence on Concurrence Point 3 was sought again through additional coordination with agencies. As project development continued, some of the concepts (which made up the original project footprint that was presented to the Resource Agency Group at the January 28, 2004 meeting) were refined based on additional engineering and comments received. The changes resulted in the concepts moving close to or just outside of the original footprint. The purpose of a Tier 1 EIS is to determine a systemwide approach to improvements and set a corridor for project development; therefore, there was a need to adjust the footprint or area of potential impact to accommodate the refined concepts. Thus, the area of potential impact was widened to account for any further refinements. This widened area represents the outer boundary of potential impacts because it is based on an overlay or composite of all of the reasonable concepts. When a single concept, the Preferred Alternative, is selected in Tier 2, impacts will be recalculated for that alternative. The result will show fewer impacts to

resources than those presented as part of the Tier 1 analysis. Based on this new "area of potential impact," the Resource Agency Group members were given until July 23, 2004 to request an additional meeting to review Concurrence Point 3 and discuss the changes, or provide input by email.

Additional coordination took place in the fall of 2004 when the decision was made to modify the extents of the project that would be addressed by this Draft EIS. The initial project considered the entire interstate system surrounding Council Bluffs, and as such, the northern project limits extending to north of the I-29/Highway 192 interchange. When the project purpose and need was developed and concept development and preliminary screening began, it became apparent that the issues to be addressed along the CBIS were as a whole not prevalent in the northernmost segment of I-29. While the Highway 192 interchange is a partial interchange, an analysis of traffic along the segment does not appear to necessitate improvements. Along this segment, the 2000 average daily travel is 19,500 and is projected to increase only to 26,600 by 2030. Thus, it currently does and will continue to function at LOS B. Finally, sensitive resources including the Blackbird Marsh Wildlife area are located in this segment, and in response to agency concerns, avoidance of Blackbird Marsh was a priority in the development of concepts. For these reasons, the decision was made to eliminate the northern portion of I-29 from the study, and to focus on developing concepts to address the needs throughout the remainder of the corridor.

5.1.2 Advisory Committee

The Advisory Committee consisted of representatives from local government, regional planning, and transportation agencies, and local businesses, as listed in Table 5-3.

TABLE 5-3
Advisory Committee Members

Advisory Committee	
Ameristar	Councilman–City of Council Bluffs
Council Bluffs–Chamber of Commerce	Community Development Director–City of Council Bluffs
Mayor–City of Council Bluffs	Operations Engineer–FHWA
Executive Director–Metropolitan Area Planning Agency	City Engineer–City of Council Bluffs
Project Coordinator–Iowa DOT	Transportation Engineer–FHWA
District 4 Engineer–Iowa DOT	Iowa West Foundation
Field Services Coordinator–Iowa DOT	Neighborhood Representative
Sapp Brothers	Public Works Director–City of Council Bluffs

During the development of a solution for the CBIS improvements, the Advisory Committee was assembled to serve as a two-way communication link between the project team and the communities, and to provide a means for key stakeholders to provide input on project actions and decisions. The members' specific roles and responsibilities included:

- Serving as project advisor
- Providing input to the study team on local issues
- Serving as liaison between the community and project team
- Serving as a visible part of the project by attending study events (such as public meetings) and identifying meeting needs

The group met seven times during 2002–2004 to discuss project progress and to provide input at key project decision points.

TABLE 5-4
Advisory Committee Meetings

Meeting	Meeting Date	Topic
1	January 2002	Introductions, background, needs study review, study process, schedule, public involvement, and advisory committee: roles and responsibilities, project issues
2	September 2002	Partnering session to help the group work as a team, establish the vision for the project, to identify critical success factors
3	March 2003	Project status, Purpose and Need, Range of Alternatives, Summary of Public Involvement Meeting #1
Special Meeting	April 2003	Discussion of Broadway access issues
4	August 2003	Preview of Public Meeting #2, range of alternatives and concepts, project status next steps
5	November 2003	Chartering meeting refresher, project status, environmental studies, alternatives development, public involvement strategies, implementation strategies
6	May 2004	Discussion of system decisions: Broadway Access, I-80/I-29 overlap section, Missouri River Bridge expansion

5.1.3 Tribal Notification

Under the guidance of Section 106 of the National Historic Preservation Act, 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, project information was sent in January 2003 to tribal contacts of the Iowa, Sac and Fox, Omaha, Otoe-Missouria, and Winnebago tribes with potential interest in the project area. Table 5-5 summarizes the responses received as part of the process.

TABLE 5-5
Tribal Notification

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

Follow-up action includes providing copies of all archaeological studies to the Otoe-Missouria Tribe and Iowa Tribe of Oklahoma, additional coordination will occur as necessary in the later stages of the project.

As part of NDOR's tribal coordination process, copies of the Draft EIS will be sent to the Ponca, Winnebago and Omaha tribes.

5.2 The Public and Interested Groups

Opportunities for general public involvement included attendance at public meetings and speakers' bureaus/small group meetings. Up-to-date study information was periodically distributed through newsletters.

5.2.1 Public Information Meetings

Two rounds of public meetings were held during the study process. The meetings were announced in newspaper advertisements, project newsletters, and invitation letters to interested individuals/groups on the project mailing list. An effort was made to involve the Spanish-speaking members of the community in the public meetings by having a Spanish interpreter available at all public meetings, creating the meeting handouts in Spanish, and advertising meetings in Spanish. English– and Spanish-language display advertisements were placed in the following Council Bluffs/Omaha newspapers: Council Bluffs Daily Nonpareil, Omaha World Herald, and Nuestro Mundo. The public meetings were conducted in an open-house format, with personnel from the Iowa DOT, NDOR, FHWA, and their consultants available to answer questions and receive comments about the study. In addition to written public comments, a project team debriefing was held following each of the public information meetings. A Public Hearing will be held after release of this Draft EIS for public review and comment. The hearing will also be conducted in an open-house format.

Public Information Meeting #1

The first meeting was held on January 23, 2003, at the Best Western Crossroads in Council Bluffs from 4:00 to 7:00 P.M. Its purpose was to present information regarding current CBIS conditions and to communicate the purpose of and need for proposed improvements. In addition, information and exhibits regarding the public involvement program, the overall study process and schedule, and environmental resources were presented.

About 150 people attended the meeting. Ten written comments were received by the end of the comment period (February 7, 2003). A summary of public comments heard by project team members during the meeting, as well as general observations of meeting staff, were prepared and considered for the Tier 1 analysis and will be reevaluated with continuing study efforts.

Key issues and concerns expressed at the public information meeting included the following:

- System interchanges and weaving sections (serious concern)
- Variable message boards were considered to be helpful
- Interest in providing a full access interchange at Broadway
- Belief that the estimates of current and future traffic volumes are conservative
- Timing of construction (would like improvements to be constructed now)
- Impacts on bike trails and desire to see additional trail connections
- Belief that local road improvements are needed in addition to interstate improvements

With overall support from the public, development of the project continued.

Public Information Meeting #2

The second meeting was held on August 7, 2003, at the Best Western Crossroads in Council Bluffs from 4:00 to 7:00 P.M. The purpose of the meeting was to present information regarding the range of alternatives under consideration.

The meeting was attended by about 67 people; a total of 2 written comments were received. A summary of public comments heard by project team members during the meeting, as well as general observations of meeting staff, was prepared. These comments and observations will be considered with continuing study efforts.

Key issues and concerns expressed at the public information meeting included the following:

- Support for the project
- Process and schedule for implementation
- Specific ROW and land acquisition issues

With overall support from the public, development of the project continued. The agenda for project completion reflects the public's interest in achieving the proposed improvements.

5.2.2 Small Group Meetings

Meetings were held with interested groups throughout the course of the study. Two presentations were made to the Southwest Iowa Association of Realtors concerning the CBIS Improvements Project, due to its potential to have an impact on the realty market in the Council Bluffs area.

5.2.3 Newsletters

Newsletters were distributed throughout the development of the Draft EIS. The newsletters contained important study information and presented an update from the project Advisory Committee. Contact information for project team representatives was also included in order to provide the opportunity for public input. Newsletters were made available in Spanish. Table 5-6 lists the dates and topics of the newsletters.

TABLE 5-6
Newsletters and Brochures

Issue	Date	Topic
1	January 2003	Project Introduction, Study Area, Public Involvement Opportunities, Reasons for the Study, Announcement of Public Meeting #1
2	July 2003	Range of Alternatives, Need for the Study, What Is a Draft Environmental Impact Statement, Public Involvement Opportunities, Announcement of Public Meeting #2
3	Upcoming	Announcement of Public Hearing

5.2.4 Mailing List

A mailing list of more than 2,000 names was developed and updated regularly throughout the course of the study. The list included interested individuals; representatives of interest groups; state, county, and local elected officials; and appropriate agency personnel. The mailing list was used to generate newsletter mailing lists and meeting invitations.

5.3 Summary of Coordination Efforts

Providing information and receiving feedback was a key element of the study process. Through a structured program that provided numerous opportunities for input, the CBIS Improvements Project was able to obtain the broadest participation at all levels: the public, interested groups, agencies, and elected officials.

Using various communication tools, the public had numerous avenues to become involved. The NOI was published in the *Federal Register* on August 21, 2002. The people of Council Bluffs and the surrounding area had opportunities to hear about the CBIS Improvements Project and voice their concerns through various meetings with interested groups, two public meetings, an Advisory Committee composed of stakeholders in the community, and resource agencies, and the distribution of newsletters and media announcements. Through this outreach program, the study team gained a thorough understanding of the transportation issues facing Council Bluffs– and Omaha-area residents.

The public involvement process helped frame the project purpose and need and the range of alternatives. Many comments received during the study emphasized frustration with growing congestion and safety concerns along the corridor. This study focused the transportation discussion on the major problems and potential solutions. Support for major improvements was expressed by the Council Bluffs– and Omaha-area residents, business groups, and elected officials based on transportation benefits and cost-effectiveness.

Appendix A
Correspondence

APPENDIX A

Correspondence

Correspondence with Federal Agencies

Correspondence with State Agencies

Correspondence with Other Organizations

Correspondence with Federal Agencies

U.S. Department of Housing and Urban Development
Nebraska State Office
Executive Tower Centre
10909 Mill Valley Road
Omaha, Nebraska 68154-3955

March 12, 2002

MEMORANDUM FOR: Agencies Requesting Comments Regarding Environmental Reviews/Findings

FROM: Gregory A. Bevirt, Director, Community Planning and Development Division

SUBJECT: Draft Environmental Assessment/Draft Environmental Impact Statement

As this Office no longer has the staff expertise to review the attached document, we are returning it to you without comment. We regret any inconvenience this might cause.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NEBRASKA REGULATORY OFFICE-WEHRSPANN
8901 SOUTH 154TH STREET, SUITE 1
OMAHA, NEBRASKA 68138-3621

REPLY TO
ATTENTION OF:

March 19, 2002

HDR Engineering Inc.
Attn: Matthew Tondl
4804 Indian Hills Drive
Omaha, Nebraska 68114

RE: Council Bluffs Interstate System Improvements

Dear Mr. Tondl:

We have received your letter dated March 11, 2002 requesting a designation between the districts regarding the lead district for the above mentioned project. Due to the fact that most of the project falls under the jurisdiction of the Rock Island District, the Omaha District will be only involved in the part of the project that is on the river side of the levees present on the Iowa side of the Missouri River.

If you have any questions concerning this determination, please feel free to contact this office at (402) 896-0896 and reference the file number **NE 2002-10280.**

Sincerely,

Matt Wray

Matt Wray
Project Manager

CF: Rock Island District (VanderHorn)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
106 SOUTH 15TH STREET
OMAHA, NEBRASKA 68102-1618

April 9, 2002

REPLY TO
ATTENTION OF:
Planning, Programs, and Project Management Division

HDR Engineering Inc.
Mr. Matthew Tondl
4804 Indian Hills Drive
Omaha, Nebraska 68114

Dear Mr. Tondl:

We have received your letter dated March 8, 2002 requesting a designation (lead district office) between the U. S. Army Corps of Engineers, Omaha and Rock Island Districts for the proposed Council Bluffs Interstate Improvements. A reply was sent to you dated March 28, 2002 from the Nebraska Regulatory Office which stated that the "Omaha District will be only involved in the part of the project that is on the river side of the levees present on the Iowa side of the Missouri River".

Additionally, we would like to add that during the preparation of the Environmental Impact Statement for the proposed project that HDR 1) look at all the possible alternatives that are available to them, 2) coordinate closely with the United States Coast Guard, State fish and wildlife resource agencies, state historical preservation offices and the U.S. Fish and Wildlife Service, 3) work with the Corps on the delineation of any possible wetlands located within the project area, and 4) fully consider the secondary and cumulative impacts to the Missouri River.

If you have any questions please contact Patsy Freeman at (402) 221-3803.

Sincerely,

Candace Gorton

Candace M. Gorton
Chief, Environmental, Economics and
Cultural Resources Section
Planning Branch

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control and Prevention

January 22, 2003

Mr. James P. Roost, Director
Office of Location and Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010
Attention: Laura Lutz-Zimmerman

Dear Mr. Roost,

Thank you for your letter of January 7, 2003 advising that the Federal Highway Administration in cooperation with the Iowa Department of Transportation has initiated a study to consider improvements in the Omaha/Council Bluffs metropolitan area. I are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

Our letter of August 26, 2002 outlined those environmental concerns we would like to have addressed in the study. We note that many of those items have been shown in your "starter" list of concerns to be addressed. We believe that the following additional comments also should be addressed during the NEPA process if appropriate. Mitigation plans which are protective of the environment and public health should be described in the DEIS wherever warranted. While some of these items were listed in your starter list, some items were not clear and we have expanded on those items. For example the "starter" list shows "air quality impacts". We believe that "air quality impacts" should also include statements pertaining to compliance with air quality standards, dust control measures during project construction, and potential releases of air toxins.

The list below further expands on items shown in your "starter" list:

I. Water Quality/Quantity

- special consideration to private and public potable water supply, including ground and surface water resources
- compliance with water quality and waste water treatment standards
- ground and surface water contamination (e.g. runoff and erosion control)
- body contact recreation

II. Wetlands and Flood Plains

- potential contamination of underlying aquifers
- construction within flood plains which may endanger human health
- contamination of the food chain

III. Hazardous Materials/Wastes

- identification and characterization of hazardous/contaminated sites
- safety plans/procedures, including use of pesticides/herbicides; worker training
- spill prevention, containment, and countermeasures plan

IV. Non-Hazardous Solid Waste/Other Materials

- any unusual effects associated with solid waste disposal should be considered

V. Noise

- not only identify projected elevated noise levels and sensitive receptors (i.e. residential, schools, hospitals), but also discuss appropriate mitigation plans during and after construction

VI. Occupational Health and Safety

- compliance with appropriate criteria and guidelines to ensure worker safety and health

VII. Land Use and Housing

- special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services
- demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools
- consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
- potential impacts upon vector control should be considered

Any health related topics which may be associated with the proposed project should also receive consideration when developing the draft and final EISs. Please furnish us with one copy of the draft document when it becomes available for review.

Sincerely yours,

Paul Joe

Paul Joe, DO, MPH
Medical Officer
National Center for Environmental Health (F16)
Centers for Disease Control & Prevention

Iowa Department of Transportation
800 Lincoln Way, Ames, Iowa 50010
515-239-1798
Fax: 515-239-1726

February 27, 2003

Paul Joe, DO, MPH
Medical Officer
Chemical Demilitarization Branch
Division of Emergency and Environmental Health
Centers for Disease Control and Prevention
4770 Buford Hwy. N.E., Mailstop F-16
Atlanta, GA 30341-3724

Subject: Council Bluffs Interstate System Improvements
I-80, I-29, and I-480 from US Hwy 6 (Kanesville Boulevard) to Iowa Highway 192
(16th Street)
Pottawattamie County, Iowa
Iowa DOT Project No. IMN-29-3(62)54—13-78

Dear Mr. Joe:

Thank you for your letter outlining the Centers for Disease Control and Prevention's concerns regarding the environmental issues to be addressed in the Draft Environmental Impact Statement (DEIS) for the Council Bluffs Interstate System Improvements.

The Iowa DOT has contracted with HDR Engineering/CH2M HILL to complete the required environmental documentation for the proposed project. Due to the size and nature of the project, it was determined that the project could be best addressed by a tiered environmental process. Therefore, a single Environmental Impact Statement (EIS) is currently under development to address the system-wide improvements. The Tier 1 EIS will provide a comprehensive look at the transportation system, develop a purpose and need for the project and narrow the range of system alternatives. During this phase, potential impacts to environmental and socioeconomic resources will be evaluated based on existing and available data, including the resource categories you mentioned. Detailed field studies and analysis of resources will not be performed during Tier 1.

When the Tier 1 EIS is complete, detailed Tier 2 NEPA studies will commence. Tier 2 studies will be broken down into smaller independent segments and depending on the project's impacts, could be Categorical Exclusions, Environmental Assessments or additional EISs.

Each document will include traditional detailed environmental analysis including mitigation plans and construction impact considerations. Precise right-of-way impacts, noise impacts and mitigation, air quality and conformance, as well as site-specific issues related to water quality, wetlands, floodplains, hazardous materials, cultural resources, and parks and recreational facilities would be evaluated and handled appropriately in the Tier 2 documents.

While the concerns raised in your January 22, 2003 letter will certainly be addressed during the environmental process, many of the items will be deferred until Tier 2. We have enclosed an attachment, which further explains the Tiered Environmental Process being used for this project. You will be provided a copy of the Tier 1 Draft EIS when it is available for review. Please feel free to contact Ms. Laura Lutz-Zimmerman at (515) 239-1010, or me at (515) 239-1798 if you have any other questions or concerns about this project.

Sincerely,

James Rost, Director
Office of Location and Environment

JR:LLZ:jj
Enclosure (Attachment A, Tiered Environmental Process)

ATTACHMENT A
TIERED ENVIRONMENTAL PROCESS

Introduction

The Council Bluffs Interstate System Improvements project will use a tiered environmental process. Environmental regulations provide for the use of a tiered process. The tiered process is appropriately applied when a large geographic region is studied or the timeframe for implementing the project is lengthy. The tiered process is usually comprised to two stages:

- The first stage involves preparation of the Tier 1 EIS, which provides a comprehensive look at the transportation system, developing a purpose and need for the project while narrowing the range of alternatives and decisions for the Tier 2 studies. Readily available environmental data with limited field reconnaissance are the basis for the Record of Decision.

- The second stage involves preparation of individual environmental documents, usually Environmental Assessments (EAs), Categorical Exclusions (CEs), or even another EIS for independent segments of the larger system. Detailed environmental studies and refined engineering are the basis for these second stage documents.

Although provided for in the regulations, tiering hasn't been commonly utilized for transportation projects. In the last several years, there has been an expanded interest for incorporating a tiered approach to transportation projects. The Federal Highway Administration (FHWA) has recently initiated or completed several tiered EISs, as well as used a tiered approach within a conventional, non-tiered document. Overall, the FHWA agrees that a large system analysis whose implementation timeframe is long-term can be best conducted with a broad-scoped study of alternatives, supported by environmental documentation using existing and available data.

Regulatory Authority and Guidance

The legal basis for performing tiering is included in regulations issued by the Council on Environmental Quality (CEQ) from the 1969 NEPA. The CEQ regulations are codified at 40 Code of Federal Regulations (CFR) Part 1500, and FHWA and the Federal Transit Administration (FTA) issued regulations codified at 23 CFR Part 771. The FHWA/FTA regulations were implemented to address the specific NEPA process within their organizations.

The concept of tiering appeared first in CEQ regulations issued in 1978. The relevant citations are at 40 CFR 1502.20 and 1508.28. The regulations indicate tiering allows "the coverage of general matters in broader EISs...with subsequent narrower statements or environmental analyses...incorporating by reference general discussions and concentrating solely on the issues specific to the statement subsequently prepared." In its "Forty Questions" guidance issued in 1981, CEQ encouraged the use of tiering when appropriate to "avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an environmental impact statement of broader scope into one of lesser scope or vice versa."

FWHA regulations under 23 CFR 771.111(g) state that "[t]he first tier EIS would focus on broad issues such as general location, mode choice, and areawide air quality and land use implications of the major alternatives. The second tier would address site-specific details on project impacts, costs, and mitigation measures." In the Federal Register (FR) notice accompanying its

regulations, the FHWA indicated that a tiered process "is most appropriate where a project concept is still in formative stages and the applicant is actively seeking information from agencies and the public in helping to reach early decisions."

Relevant Examples

There are several recent examples of the FHWA using a tiered approach to focus the broad, initial analysis and then perform one or more subsequent detailed analyses. Two examples involve I-70 with one corridor in Missouri and another corridor in Colorado. The Tier 1 DEIS for I-70 Missouri was issued in November 2001 and the Draft Programmatic EIS for I-70 Colorado is planned to be released in 2002. Both I-70 studies will have Tier 2 studies commencing after Tier 1 EISs are completed and Records of Decision (ROD) are signed. Another regional example of a tiered approach is the Trunk Highway 371 in Minnesota for which the FHWA issued a final Tier 2 EIS in March 1998.

Tier 1 Outcomes

- Development of agency and public consensus for the overall improvement plan.
- Documentation that can be referenced by second tier studies to eliminate repetitiveness (e.g. the purpose and need, and range of alternatives) and record the first tier decision.
- Identification of the Sections of Independent Utility for the second tier studies, including an action plan for the completion of the environmental process.

Tier 2 Outcomes

Subsequent Tier 2 documents will address specific details of the corridor project. The documents will be focused based on the results of the Tier 1 EIS, and will provide a traditional level of detail that includes regulatory concurrence and permitting (including Section 404 permits) and sections 4(f)/6(f) and 106 compliance.

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

April 15, 2003

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

Dear Mr. Tondl:

This responds to your March 8, 2002, request for technical assistance regarding the presence of federally listed endangered species within the project area of the proposed Council Bluffs Interstate Improvement Project, Pottawattamie County, Iowa, which includes I-80, I-29, and I-480 from US Highway 6 (Kanesville Boulevard) to Iowa Highway 192 (16th Street), Iowa DOT Project No. IMN-29-3(62)54—13-78. We have the following comments.

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service information concerning any species, listed or proposed to be listed, which may be present in the area of a proposed action. Therefore, we are furnishing you the following list.

Classification	Common Name	Scientific Name	Habitat
Threatened	Bald eagle	*Haliaeetus leucocephalus*	Wintering
Endangered	Indiana bat	*Myotis sodalis*	Caves, mines (hiberacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Endangered	Least Tern	*Sterna antillarum*	Bare alluvial and dredged spoil islands; sand/gravel areas around fly ash ponds

Threatened	Piping Plover	*Charadrius melodus*	Bare alluvial and dredged spoil islands; sand/gravel areas around fly ash ponds
Endangered	Pallid Sturgeon	*Scaphirynchus albus*	Large rivers
Threatened	Prairie bush clover	*Lespedeza leptostachya*	Dry to mesic prairies with gravelly soil
Threatened	Western prairie fringed orchid	*Platanthera praeclara*	Mesic to wet prairies
Candidate	Eastern massasauga rattlesnake	*Sistrurus c. catenatus*	Shrub wetlands

The threatened bald eagle (*Haliaeetus leucocephalus*) is listed as wintering along large rivers, lakes, and reservoirs in Pottawattamie County in Iowa. During the winter, this species feeds on fish in the open water areas created by dam tailwaters, the warm water effluents of power plants and municipal and industrial discharges, or in power plant cooling ponds. The more severe the winter, the greater the ice coverage and the more concentrated the eagles become. They roost at night in groups in large trees adjacent to the river in areas that are protected from the harsh winter elements. They perch in large shoreline trees to rest or feed on fish. There is no critical habitat designated for this species. The eagle may not be harassed, harmed, or disturbed when present nor may nest trees be cleared.

In Iowa, the Indiana bat may potentially occur in Pottawattamie County. During the summer, the Indiana bat frequents the corridors of small streams with well developed riparian woods as well as mature upland forests. It forages for insects along the stream corridor, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fencerows, and over farm ponds and in pastures. It has been shown that the foraging range for the bats varies by season, age, and sex and ranges up to 81 acres (33ha). It roosts and rears its young beneath the loose bark of large dead or dying trees. It winters in caves and abandoned mines.

An Indiana bat maternity colony typically consists of a primary roost tree and several alternate roost trees. The use of a particular tree appears to be influenced by weather conditions (temperature and precipitation). For example, dead trees found in more open situations were utilized more often during cooler or drier days while interior live and dead trees were selected during periods of high temperature and/or precipitation. It has been shown that pregnant and neonatal bats do not thermoregulate well and the selection of the roost tree with the appropriate

microclimate may be a matter of their survival. The primary roost tree, however, appears to be utilized on all days and during all weather conditions by at least some bats. Indiana bats tend to be philopatric, i.e. they return to the same roosting area year after year.

Suitable summer habitat in Iowa is considered to have the following characteristics within a ½ mile radius of the project site:

1) forest cover of 15% or greater;
2) permanent water;
3) one or more of the following tree species 9 inches diameter at breast height (dbh) or greater: shagbark and shellbark hickory that may be dead or alive, and dead bitternut hickory, American elm, slippery elm, eastern cottonwood, silver maple, white oak, red oak, post oak, and shingle oak with slabs or plates of loose bark;
4) at least 1 potential roost tree per 2.5 acres;
5) potential roost trees must have greater than 10% coverage of loose bark (by visual estimation of peeling bark on trunks and main limbs).

If the project site contains any habitat that fits the above description, it may be necessary to conduct a survey to determine whether the bat is present. If Indiana bats are known to be present, they must not be harmed, harassed, or disturbed when present. Indiana bat habitat may be altered (i.e trees cleared) only between the dates of October 1 and March 31.

The least tern (*Sterna antillarum*) is listed as endangered in Pottawattamie County, Iowa (along the Missouri River). It nests on bare alluvial or dredged spoil islands and sand/gravel bars in or adjacent to rivers, lakes, gravel pits and cooling ponds. It nests in colonies with other least terns and sometimes with the piping plover. There is no critical habitat designated for this species. It must not be harmed, harassed or disturbed when present.

The piping plover (*Charadrius melodus*) is listed as threatened in Iowa where it nests on sandy beaches, bare alluvial and dredged spoil islands adjacent to rivers, streams, lakes and gravel pits. It nests in colonies with other piping plovers and sometimes with least terns. Potential habitat can be found along the Missouri River in Pottawattamie County. No critical habitat has been designated. The birds must not be harmed, harassed or disturbed when present.

The endangered pallid sturgeon (*Scaphirhynchus albus*) is found in Iowa, it is known to occur in the Missouri River in Pottawattamie County. Little is known of its habitat preferences, however, it is suspected that sand/gravel bars may be utilized for spawning.

The prairie bush clover (*Lespedeza leptostachya*) is listed as threatened and it is considered to potentially occur statewide in Iowa based on historical habitat. It occupies dry to mesic prairies with gravelly soil. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious

regulations prohibit any commercial activity involving this species or the destruction, malicious damage or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law. This species should be searched for whenever prairie remnants are encountered.

The western prairie fringed orchid (*Platanthera praeclara*) is listed as threatened. It is considered to potentially occur statewide based on historical records and habitat distribution. It occupies wet grassland habitats. There is no critical habitat designated for this species. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage or removal of this species from Federal land or any other lands in knowing violation of State law or regulation, including State criminal trespass law. This species should be searched for whenever wet prairie remnants are encountered.

The project lies within the range of the eastern massasauga, a docile rattlesnake that is declining throughout its national range and is currently a Federal Candidate species. **The snake is listed as endangered by the State of Iowa and is believed to occur in Pottawattamie County.** Your proactive efforts to conserve this species now may help avoid the need to list the species under the Endangered Species Act in the future. Due to their reclusive nature, we encourage early project coordination to avoid potential impacts to massasaugas and their habitat. The massasauga is often found in or near wet areas, including wetlands, wet prairie, or nearby woodland or shrub edge habitat. This often includes dry goldenrod meadows with a mosaic of early successional woody species such as dogwood or multiflora rose. Wet habitat and nearby dry edges are utilized by the snakes, especially during the spring and fall. Dry upland areas up to 1.5 miles away are utilized during the summer, if available.

The Corps of Engineers is the Federal agency responsible for wetland determinations, and we recommend that you contact them for assistance in delineating any wetland types and acreages within the project boundary. Priority consideration should be given to avoid impacts to any wetland areas. Any future activities in the study area that would alter wetlands may require a Section 404 permit. Unavoidable impacts will require a mitigation plan to compensate for any losses of wetland functions and values. The U.S. Army Corps of Engineers, Clock Tower Building, P.O. Box 2004, Rock Island, Illinois, 61204-2004, should be contacted for information about the permit process.

These comments provide technical assistance only and do not constitute the report of the Secretary of the Interior on the project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under Section 7 of the Endangered Species Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement.

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

Sincerely,

Richard C. Nelson
Supervisor

G:\Office Users\Heidi\hdrpottawatt.doc

Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1798
Fax: 515-239-1726

July 12, 2004

Mr. Bruce L. McLaren
1222 Spruce Street
St. Louis, MO 63103-2832

Dear Mr. McLaren:

Thank you for your comments on the Preliminary DEIS for the Council Bluffs Interstate System Project. As you are aware, for this project a tiered EIS instead of a traditional EIS is being utilized. For Tier 1, the level environmental and engineering detail that is available is based on readily available information and not detailed field studies. The analysis at Tier 1 is for the entire project corridor. During Tier 2, the project will be broken up into individual project segments of independent utility and detailed field studies and engineering will be completed for these segments.

Per the USCG comments, navigational and bridge impact sections will be added to the Tier 1 EIS using the information available at Tier 1. However, as the detailed studies and additional engineering won't be completed until Tier 2, there may be some instances where the impact conclusions cannot be made until detailed field studies are complete. In those instances, impact conclusions will be made in the NEPA documentation for the Tier 2 segment instead of the Tier 1 EIS.

As a cooperating agency, under preparation of a traditional EIS, we would expect the EIS to satisfy your NEPA requirements as the decision document and as the basis for permit applications. With the preparation of the tiered EIS, we recognize some of the information used for permit applications will not be available until the Tier 2. Therefore, at the conclusion of the Tier 2 NEPA documentation, we would expect your NEPA requirements be satisfied and serve as the basis for permit applications.

We would anticipate your continued involvement as a cooperating agency through Tier 2 for the segment including the bridge over the Missouri River. We recognize that you may elect to discontinue your participation as a cooperating agency for the remaining Tier 2 segments that do not involve navigable waters. Please respond in writing at the time that your agency needs have been satisfied and the Coast Guard no longer needs to continue as a cooperating agency.

Sincerely,

James Rost

James Rost
Office of Location and Environment

JR:LLZ:jj
Cc: Lisa Rold, IA FHWA
John Snowdon, NE FHWA

Correspondence with State Agencies

Nebraska Game and Parks Commission
2200 N. 33rd St. / P.O. Box 30370 / Lincoln, NE 68503-0370
Phone: 402-471-0641 / Fax: 402-471-5528 / http://www.ngpc.state.ne.us/

15 March 2002

Mr. Matthew Tondl, P.E.
Project Manager
HDR Engineering, Inc.
8404 Indian Hills Drive
Omaha, NE 68114-4049

Dear Mr. Tondl:

Please make reference to **Iowa DOT Project No. IMN-29-3(62)54—13-78**, and your request for a threatened and endangered species review for the project. We have completed our review of the proposal under Neb. Rev. Stat. § 37-807 (3) of the Nongame and Endangered Species Conservation Act and offer these comments.

We did find records of state or federal threatened, endangered, candidate or proposed species in the vicinity of the site of the proposed project. We determined that there is habitat for such species at the proposed project site based on a review of the material you sent, aerial photos, and topographic maps. The following are state and federally list species we have identified as possible concerns.

The pallid sturgeon, lake sturgeon, sturgeon chub, bald eagle, ginseng, and western prairie fringed orchid have been observed, collected, or otherwise are likely to be found in Douglas County. The pallid sturgeon is state and federally endangered; the bald eagle, and western prairie fringed orchid are state and federally threatened; the lake sturgeon and ginseng are state threatened; and the sturgeon chub is state endangered.

Pallid Sturgeon—pallid sturgeon feed on small fish and invertebrates and can be found in association with riverine sandbars. Often, the fish is found near confluences, islands, and at the downstream margins of sandbars. It is believed that the fish spends some time in the Missouri River, and annually returns to the Platte River to spawn or possibly overwinter. Alterations to the natural hydrograph, river channelization, and flow depletions have caused the decline of this species.

Sturgeon chub—sturgeon chub are associated with fast flowing water and a gravel riverbed. The species has been collected in side chutes and backwaters—it is thought that these kinds of areas provide spawning habitat to the fish. Sturgeon chub feed on invertebrates. Similarly, to lake and pallid sturgeons, alterations to the natural hydrograph, depletions, and river channelization have caused the decline of the sturgeon chub.

Bald eagle—bald eagles nest along the Missouri River—nests may be present in the segment along Douglas County. The bald eagle is associated with the Missouri River during annual migrations and throughout the winter where open water is present.

Ginseng—ginseng, an understory forb, grows in good quality upland hardwood forest. Often the plant is associated with stands of mature bur oak. The plant flowers in June-July. In Nebraska, ginseng has been found on forested bluffs that extend along the Missouri River.

Western Prairie Fringed Orchid—the western prairie fringed orchid grows on mesic tallgrass prairies. Although the plant can be a colonizer species and grow on disturbed areas, it is found in greatest abundance on high quality prairie. The plant blooms in July.

Please note that this correspondence does not satisfy requirements of the Nongame and Endangered Species Conservation Act should the proposed relicensing require a discretionary state action. State agencies are required to ensure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of a threatened or endangered species or result in the destruction or modification of habitat of such species which is determined by the Commission to be critical (Neb. Rev. Stat. § 37-807 (3). This stature may become applicable to you should the proposed relicensing require a state permit, authorization, or funding. Please contact me if you need assistance with determining the potential of the action to affect listed species.

Species of Concern

Cliff swallows nest in large colonies on the surfaces of some bridge girders and panels, and large box culverts. The birds nest on bridges and culverts that span drainages, especially in wide, open areas. Bridge replacement, as proposed in this project, has the potential to impact nesting colonies of cliff swallows—as you know, cliff swallows are protected under provisions of the federal Migratory Bird Treaty Act. We recommend that you avoid impacts to nesting cliff swallows until after young are fledged. If this is not possible, I recommend that you contact Mr. John Cochnar (U.S. Fish and Wildlife Service) at 308-382-6468 (x20) for guidance.

Lake Sturgeon—it is believed that the lake sturgeon occupies similar habitats as the pallid sturgeon, but spends a greater proportion of its time in the Missouri than the Platte River. Lake sturgeon feed on invertebrates and small fish and can be found at the downstream margins of islands and river confluences. Alterations to the natural hydrograph, river channelization, and flow depletions also have caused the decline of this species.

Be advised that the above determination of affect does not apply to borrow sites potentially associated with this project. We acknowledge that locations and sizes for borrow sites are unknown at this time. However, once the borrow site(s) is located, please complete a Borrow Pit/Materials Pit Identification and Evaluation form and submit it to me for review and evaluation. We have records for and we are aware of suitable habitat for the state endangered ginseng along the forested bluffs that parallel the Missouri River. Ginseng is a broadleaf plant that is associated with relatively undisturbed upland hardwood timber. Thus, if borrow pits are required, we recommend that they only be created in areas that have been disturbed, and not created in upland hardwoods.

The project could impact wetlands given that the project location is on a stream course. We recommend that you or a representative from the County review the project in light of potential impacts to wetlands, if that has not been done already. Permits may be necessary, depending on the project. For information about the applicability of a Corps of Engineers permit for this project, please contact Mr. Mike Rabbe, Corps of Engineers, at 402-896-0896.

Please note that you will need to reinitiate consultation with me if the project plans are modified. If you have any questions or need additional information, please contact me at 402-471-5444 or email me at jgodberson@ngpc.state.ne.us

Sincerely,

Julie Godberson
Environmental Analyst
Nebraska Natural Heritage Program
jgodberson@ngpc.state.ne.us
402-471-5444

Attachment

Cc:
Mr. Wally Jobman, USFWS
Mr. John Cochnar, USFWS
Mr. Frank Albrecht, NGPC

Fields of Opportunities

STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

March 19, 2002

Mr. Mathew Tondl
HDR Engineering, Inc.
8404 Indian Hills Drive
Omaha, NE 68114-4049

RE: Council Bluffs Interstate System Improvements

Dear Mr. Tondl:

Thank you for inviting our comments on the impact of the above referenced project on protected species and rare natural communities.

We have searched our records of the project area and found no records of rare species or significant natural communities. However, our data are not the result of thorough field surveys. Based on the information provided, we do not think the project will affect protected species or rare natural communities. If listed species or rare communities are found during the planning or construction phases, additional studies and/or mitigation may be required.

Enclosed are two maps that show that the proposed routes pass along the edge of the Blackbird Marsh Wildlife Management Area.

This letter is a record of review for protected species and rare natural communities in the project area. It does not constitute a permit and before proceeding with the project, you may need to obtain permits from the DNR or other state and federal agencies.

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

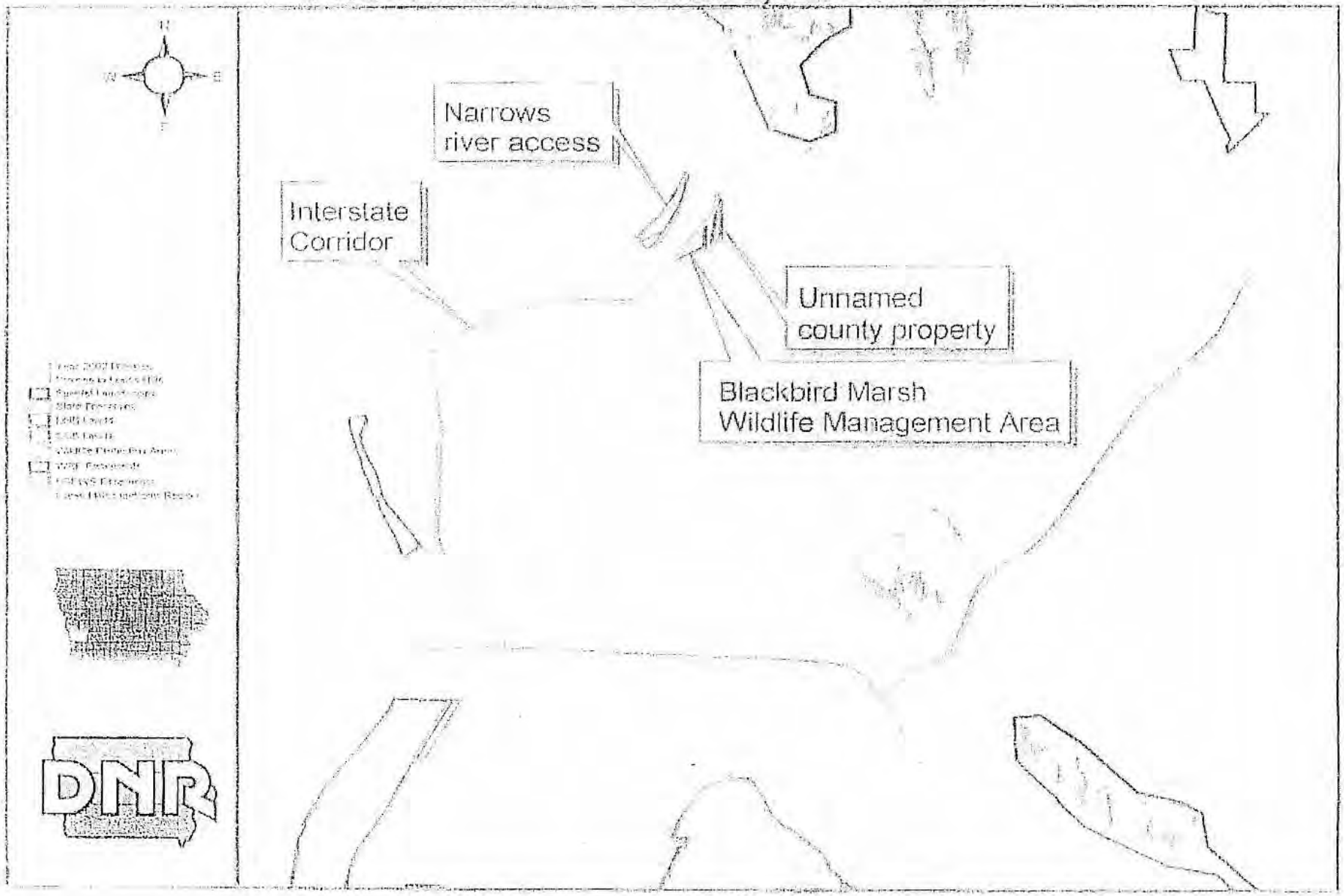
Sincerely,

for MIKE BRANDRUP
IOWA DEPARTMENT OF NATURAL RESOURCES

MB:kd

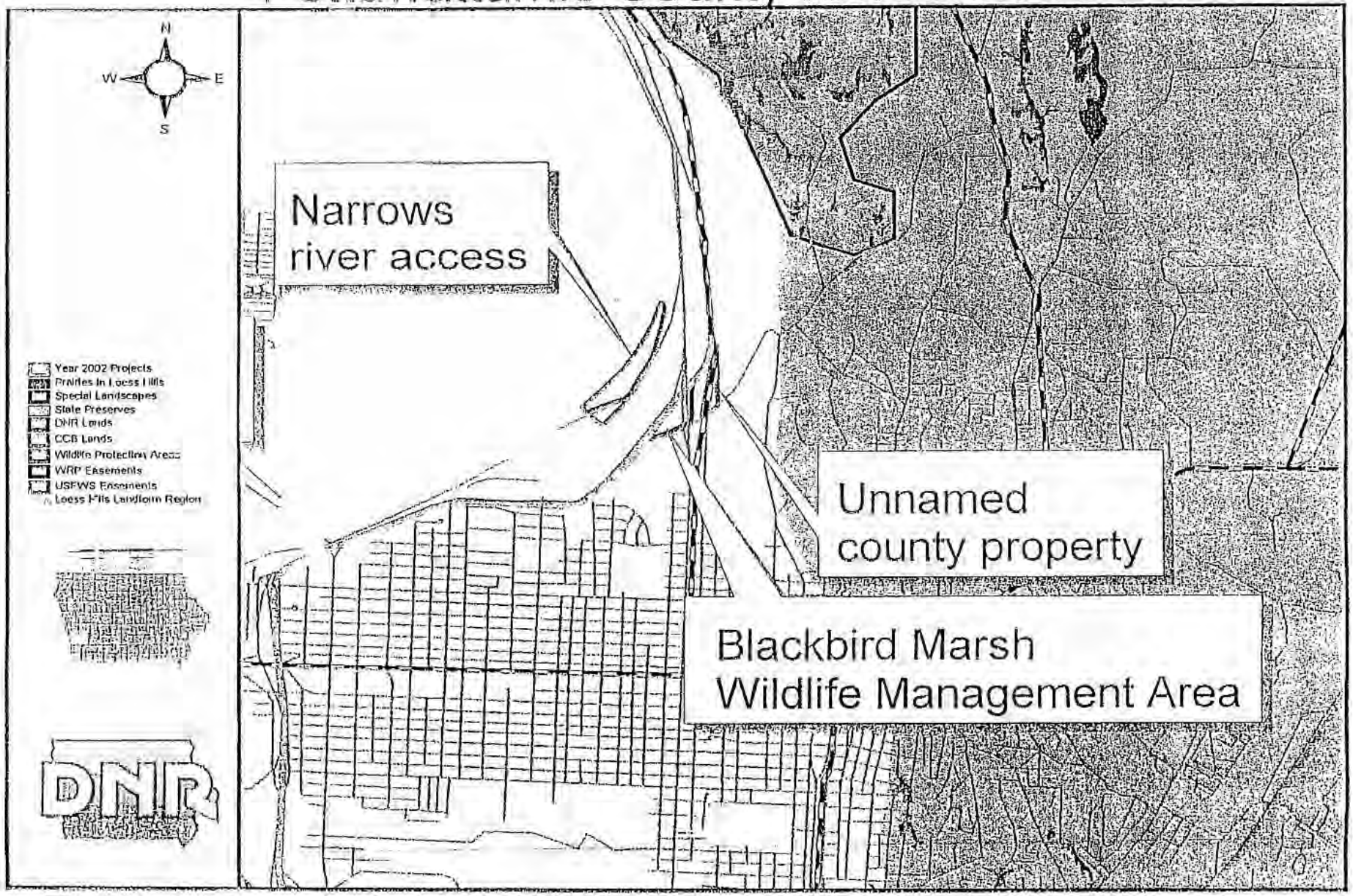
02-860L

Pottawattamie County Environmenal Review



prepared by Keith L. Dohrmann

Pottawattamie County Environmenal Review



IOWA
DEPARTMENT OF
ECONOMIC DEVELOPMENT

March 26, 2002

Mr. Bobby Blackmon
Division Administrator
Iowa Department of DOT
%HDR Engineering, Inc. / Attention Matthew Tondl
8404 Indian Hills Drive
Omaha, NE 68114-4049

RE: IA020308-110

Dear Mr. Blackmon:

The Iowa State Clearinghouse has performed the required review of your grant application for the Interstate System Improvements funding in accordance with the Iowa Intergovernmental Review System.

The review:

-- did not generate any comments from those who examined the file.
-- found no serious environmental problems which may result from the project or program.
-- indicated that the proposal conforms to pertinent planning to this area.
-- did not show that the proposal would result in duplicating any existing activity or project.

The Clearinghouse is pleased to recommend that the application be approved for funding. A copy of this letter must be sent to the federal agency as evidence that the review has been performed.

Sincerely,

Steven R. McCann

Steven McCann
Federal Funds Coordinator
515/242-4719

SRM:rao

From: Carl Priebe
To: jjoens
Date: 1/22/03 2:24PM
Subject: Council Bluffs DOT Highway Project

On page 4 of the Scoping Document it states that consideration should be given to impacts to unique habitats, including Blackbird Marsh and Narrows River Access. The map is not very clear to me, but it appears that the Off-System Improvement Alternatives could perhaps impact the wetland area at Big Lake City Park. It lies about 3/8 mile east of Blackbird Marsh.

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

January 22, 2003

James Rost, Director
Office of Location and Environment
Iowa DOT
800 Lincoln Way
Ames, IA 50010

Re: Corridor improvements to Omaha/Council Bluffs Interstate System
HP#0203-041-01

Dear Mr. Rost:

We are in receipt of the information submitted regarding public meetings and purpose and needs for the "Council Bluffs Interstate System Improvements Project." We appreciate the opportunity to comment on the project at this early stage in the planning process. These improvements will be considered an undertaking and shall be reviewed under Section 106 of the National Historic Preservation Act as amended, and implementing regulations at 36 CFR Part 800.

Although we will be unable to attend the scoping meeting scheduled for January or the public meetings scheduled for February, it remains important to consider historic properties throughout this project. Page 5 of the document submitted does include consideration of cultural resources, both archeological and standing structures. Please contact this office to discuss the Area of Potential Effect (APE) for this project to identify appropriate survey areas prior to commencing any fieldwork for the purpose of identifying historic properties.

Thank you again for the opportunity for early comment. If you have any questions do not hesitate to contact me in the future.

Sincerely,

Melissa A. Dirr
Program Associate
Project Review and Preservation Services

RECEIVED
JAN 30 2003
OFFICE OF LOCATION & ENVIRONMENT

Fields of Opportunities

STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES
JEFFREY R. VONK, DIRECTOR

January 28, 2003

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

RE Study Corridor for the interstate system in the Omaha/Council Bluffs metropolitan area

Dear Mr. Rost:

Thank you for inviting our comments on the impact of the above referenced project on protected species and rare natural communities.

Enclosed is a copy of a letter regarding this study corridor that we provided to HDR Engineering, Inc. dated March 19, 2002. Our only concern is the closeness of the corridor to the Blackbird Marsh Wildlife Management Area and an unnamed county property.

This letter is a record of review for protected species, rare natural communities, state lands and waters in the project area, including review by personnel representing state parks, preserves, recreation areas, wetlands, fisheries and wildlife. It does not constitute a permit and before proceeding with the project, you may need to obtain permits from the DNR or other state and federal agencies.

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

Sincerely

Kevin R. Szcodronski

KEVIN R. SZCODRONSKI
ASSISTANT ADMINISTRATOR
CONSERVATION AND RECREATION DIVISION

KS:kd

Attachment: Two maps showing the corridor and Blackbird Marsh
Letter sent to HDR Engineering

CC: Christine Schwake, Water Quality Bureau, Iowa DNR (by email)
03-1553L

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

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

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

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

SHPO Archaeologist

5/19/03

Date:

Comments

STATE OF NEBRASKA

Mike Johanns
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
web site : www.deq.state.ne.us

June 30, 2003

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

RE: Federal Highway Admin. & Iowa Dept. of Transportation has initiated a study to consider improvements to the interstate system in the Omaha/Council Bluffs metro area – 18 miles of interstate, 16 interchanges along I 80, I 29, I 480

Dear Mr Rost:

The Nebraska Department of Environmental Quality has reviewed the above referenced project. We have no comments regarding this project that would fall under the jurisdiction of our programs.

If you have questions, feel free to contact me at (402) 471-4231

Sincerely,

Jay D. Ringenberg
Deputy Director

JDR:nh
031203I8029480omnepafrm.doc

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-9270 Fax: (402) 471-9100 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

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

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

Correspondence with Other Organizations

Form 536002
10-01

Iowa Department of Transportation
TRIBAL NOTIFICATION

Date 1/24/03 | IA DOT contact Randy Faber

IADOT project # IMN-29-3(62)54—13-78 | Phone # 515-239-1215

Location Council Bluffs, Iowa | E-mail randall.faber@dot.state.ia.us

Description Interstate 80 - Omaha to NE Council Bluffs, Interstate 29 Council Bluffs, Interstate 380 - Missouri River to Interstate 29

Type of Project *(see map)*

- ☐ VERY SMALL - Disturb less than 12 inch depth *(plow zone)*
- ☐ SMALL - Grading on existing road, shouldering, ditching, etc.
- ☐ SMALL - Bridge or culvert replacement
- ☒ LARGE - Improve existing road from 4 lanes to 6 lanes
- ☐ LARGE - New alignment
- ☐ OTHER

Type of Coordination/Consultation Points

- ☒ 1--Early project notification *(project map and description)*
- ☐ 2--Notification of survey findings *(Phase I)*
- ☐ 2a--Notification of site evaluation *(Phase II)*
- ☐ 3--Consultation regarding site treatment
- ☐ 4--Final Data Recovery Report

Type of Findings

- ☐ No American Indian sites found --Section 106 Consultation Process ends *
- ☐ No significant American Indian sites eligible for National Register listing found--Section 106 Consultation Process ends *
- ☐ Avoided American Indian sites eligible for National Register listing *(see map and list of sites)* --Section 106 Consultation Process may or may not end
- ☐ Potentially significant American Indian sites found Phase II evaluation conducted *(see map and list of sites)*
- ☐ American Indian sites eligible for National Register listing cannot be avoided *(see map)*
- ☐ Burial site found

* *in the event of a late discovery consultation will be reopened*

_____ # of non-significant prehistoric sites
_____ # of potentially significant prehistoric sites
_____ # of National Register eligible prehistoric sites

Affected National Register Properties

- ☐ Investigating avoidance or minimizing harm options
- ☐ Avoided
- ☐ Protected
- ☐ Data Recovery/MOA

Please Respond

Who should we contact for site/project related discussions?

DAVID LEE SMITH (Name) | Box 250 LPTC (Street Address) | WINNEBAGO NE 68071 (City, Zip Code)

402-878-3313 (Phone) | DSMITH@LPTC.BIA.EDU (E-mail)

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid *(please describe)*? NO

- ☒ Thank you for the information; however, we do not need to consult on this particular project.
- ☐ We do not have a comment at this time but request continued notification on this project.
- ☐ Please send a copy of the archaeology report.
- ☒ Thank you for the information. We are satisfied with the planned site treatment.
- ☐ We have concerns and wish to consult.
- ☐ We wish to participate in the Memorandum of Agreement for this project.

Comments The Winnebago Tribe never lived in this area

David Lee Smith (Name) | Winnebago Tribe of Nebraska (Tribal Name) | 2-24-03 (Date)

(Comments continued on back)

Form 536002
10-01

Iowa Department of Transportation
TRIBAL NOTIFICATION

Date 1/27/03

IA DOT contact Randy Faber

IADOT project # IMN-29-3(62)54—13-78

Phone # 515-239-1215

Location Council Bluffs, Iowa

E-mail randall.faber@dot.state.ia.us

Description Interstate 80 – Omaha to NE Council Bluffs, Interstate 29 Council Bluffs, Interstate 380 – Missouri River to Interstate 29

Type of Project *(see map)*

- ☐ VERY SMALL - Disturb less than 12 inch depth *(plow zone)*
- ☐ SMALL - Grading on existing road, shouldering, ditching, etc.
- ☐ SMALL - Bridge or culvert replacement
- ☒ LARGE - Improve existing road from 2-lanes to 4-lanes
- ☐ LARGE - New alignment
- ☐ OTHER

Type of Coordination/Consultation Points

- ☒ 1--Early project notification *(project map and description)*
- ☐ 2--Notification of survey findings *(Phase I)*
- ☐ 2a--Notification of site evaluation *(Phase II)*
- ☐ 3--Consultation regarding site treatment
- ☐ 4--Final Data Recovery Report

Type of Findings

- ☐ No American Indian sites found --Section 106 Consultation Process ends *
- ☐ No significant American Indian sites eligible for National Register listing found--Section 106 Consultation Process ends *
- ☐ Avoided American Indian sites eligible for National Register listing *(see map and list of sites)* --Section 106 Consultation Process may or may not end

* *in the event of a late discovery consultation will be reopened*

- ☐ Potentially significant American Indian sites found. Phase II evaluation conducted *(see map and list of sites)*
- ☐ American Indian sites eligible for National Register listing cannot be avoided *(see map)*
- ☐ Burial site found
- _____ # of non-significant prehistoric sites
- _____ # of potentially significant prehistoric sites
- _____ # of National Register eligible prehistoric sites

Affected National Register Properties

- ☐ Investigating avoidance or minimizing harm options
- ☐ Avoided
- ☐ Protected
- ☐ Data Recovery/MOA

Please Respond

Who should we contact for site/project related discussions?

Name _____ Street Address _____ City, Zip Code _____

Phone _____ E-mail _____

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid *(please describe)*? _____

- ☐ Thank you for the information; however, we do not need to consult on this particular project.
- ☐ We do not have a comment at this time but request continued notification on this project.
- ☐ Please send a copy of the archaeology report.
- ☐ Thank you for the information. We are satisfied with the planned site treatment.
- ☐ We have concerns and wish to consult.
- ☐ We wish to participate in the Memorandum of Agreement for this project.

Comments: It is known that the Iowa Tribe maintained a village near what is known as Council Bluffs although its precise location is not known. Will want to review all archaeological reports/studies

Jacqueline Ky — Name

Iowa Tribe of OK — Tribal Name

2-3-03 — Date

(Comments continued on back)

Omaha
Tribe of Nebraska

Environmental Protection Department
P.O. Box 368
Macy, Nebraska 68039
(402) 837-5291
FAX (402) 837-5223

January 30, 2003

Iowa Dept. of Transportation
800 Lincoln Way
Ames, Iowa 50010

RE: Ref. No IMN-29-3(62)54-13-78
Potawattamie County, Iowa
Douglas County, Nebraska

To Whom It May Concern:

I am writing this letter in response to the Public Notice sent to this office. It is in regards to getting comments of this proposed project from the Omaha Tribe of Nebraska and Iowa. With, National Policies set fourth by Congress. Such as NEPA, NAGPRA, and NHPA ensuring the Cultural, Spiritual, and Sacredness of known/unknown Native American Sites throughout the United States are well protected. It is documented throughout our history that the Omaha occupied the area in question one time or another. With saying that, it is the consensus of the Omaha Tribe of Nebraska and Iowa that the proposed construction of said project has no immediate concerns of discovering any evidence of our occupation. However, you or any other person(s) discover any such evidence. You will immediately contact our office so that we may take proper steps in handling such discoveries. If you have any other questions, please feel free to contact me at your convenience.
Thank you for your time and attention.

Sincerely,

Antoine A. Provost
Executive Director

RECEIVED
FEB 0 6 2003
OFFICE OF LOCAL ENVIRONMENT

Concur: Donald F. Grant, Chairman
Omaha Tribal Council
XC: Council(6), CTO, Ass't CTO, file

RECYCLED PAPER

Form 536002
10-01

Iowa Department of Transportation
TRIBAL NOTIFICATION

Date 1/27/03

IA DOT contact Randy Faber

IADOT project # IMN-29-3(62)54—13-78

Phone # 515-239-1215

Location Council Bluffs, Iowa

E-mail randall.faber@dot.state.ia.us

Description Interstate 80 - Omaha to NE Council Bluffs, Interstate 29 Council Bluffs, Interstate 380 - Missouri River to Interstate 29

Type of Project *(see map)*

- ☐ VERY SMALL - Disturb less than 12 inch depth *(plow zone)*
- ☐ SMALL - Grading on existing road, shouldering, ditching, etc.
- ☐ SMALL - Bridge or culvert replacement
- ☒ LARGE - Improve existing road from 2-lanes to 4-lanes
- ☐ LARGE - New alignment
- ☐ OTHER

Type of Coordination/Consultation Points

- ☒ 1--Early project notification *(project map and description)*
- ☐ 2--Notification of survey findings *(Phase I)*
- ☐ 2a--Notification of site evaluation *(Phase II)*
- ☐ 3--Consultation regarding site treatment
- ☐ 4--Final Data Recovery Report

Type of Findings

- ☐ No American Indian sites found --Section 106 Consultation Process ends *
- ☐ No significant American Indian sites eligible for National Register listing found--Section 106 Consultation Process ends *
- ☐ Avoided American Indian sites eligible for National Register listing *(see map and list of sites)* --Section 106 Consultation Process may or may not end

* *in the event of a late discovery consultation will be reopened*

- ☐ Potentially significant American Indian sites found Phase II evaluation conducted *(see map and list of sites)*
- ☐ American Indian sites eligible for National Register listing cannot be avoided *(see map)*
- ☐ Burial site found

_____ # of non-significant prehistoric sites
_____ # of potentially significant prehistoric sites
_____ # of National Register eligible prehistoric sites

Affected National Register Properties

- ☐ Investigating avoidance or minimizing harm options
- ☐ Avoided
- ☐ Protected
- ☐ Data Recovery/MOA

Please Respond

Who should we contact for site/project related discussions?

Name _____ Street Address _____ City, Zip Code _____

Phone _____ E-mail _____

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid *(please describe)*? _____

- ☐ Thank you for the information; however, we do not need to consult on this particular project.
- ☒ We do not have a comment at this time but request continued notification on this project.
- ☒ Please send a copy of the archaeology report.
- ☒ Thank you for the information. We are satisfied with the planned site treatment.
- ☐ We have concerns and wish to consult.
- ☐ We wish to participate in the Memorandum of Agreement for this project.

Comments _____

Kenneth Ross — Name
Omaha — Tribal Name
Feb 4 03 — Date

(Comments continued on back

SAC AND FOX NAGPRA CONFEDERACY

"MESKWAKI"
Sac and Fox of the
Mississippi in Iowa
349 Meskwaki Rd
Tama, IA 52339-9629
641-484-4678
Fax: 641-484-5424
Contact:
Johnathan L. Buffalo

Sac and Fox Nation
of Missouri
in Kansas and Nebraska
305 N Main
Reserve, KS 66434
785-742-7471
Fax: 785-742-2979
Contact: Deanne Bahr

Sac and Fox Nation of
Oklahoma
Rt. 2 Box 246
Stroud, OK 74079
918-968-2353
Fax: 918-968-2353
Contact: Sandra Massey

February 6, 2003

Randall B. Faber
Office of Location & Environment
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010-6993

Dear Mr. Faber:

Thank you for your letter, which is in compliance with Section 106 of the National Historic Preservation Act, and Section 110.

The main contact group of the Sac and Fox in issues that result in inadvertent finds of human remains or funerary objects pertaining to following project:

IMN-29-3(69)54—13-78
Pottawattamie County, Iowa
Douglas County, Nebraska

will be Johnathan Buffalo of the Sac and Fox Tribe of Mississippi in Iowa. Mr. Buffalo's address is listed on this letterhead.

Sincerely,

Deanne Bahr
Sac and Fox Nation of Missouri
NAGPRA Contact Representative

TRIBAL NOTIFICATION

Date May 13, 2003
IADOT project # IMN-29-3(62)5-13-78
Location Council Bluffs, Iowa
Description Road Improvements to Interstates 29 & 80.

IA DOT contact Matt Donovan
Phone # 515-239-1097
E-mail matt.donovan@dot.state.ia.us

Type of Project *(see map)*

- ☐ VERY SMALL - Disturb less than 12 inch depth *(plow zone)*
- ☐ SMALL - Grading on existing road, shouldering, ditching, etc.
- ☐ SMALL - Bridge or culvert replacement
- ☑ LARGE - Improve existing road from 2-lanes to 4-lanes
- ☐ LARGE - New alignment
- ☐ OTHER

Type of Coordination/Consultation Points

- ☑ 1--Early project notification *(project map and description)*
- ☑ 2--Notification of survey findings *(Phase I)* Archaeological Assessments
- ☐ 2a--Notification of site evaluation *(Phase II)*
- ☐ 3--Consultation regarding site treatment
- ☐ 4--Final Data Recovery Report

Type of Findings – Archaeological Assessment – Phase I Archaeological Surveys recommende

- ☐ No American Indian sites found
  –Section 106 Consultation Process ends *
- ☐ No significant American Indian sites eligible for National Register listing found–Section 106 Consultation Process ends *
- ☐ Avoided American Indian sites eligible for National Register listing *(see map and list of sites)*
  –Section 106 Consultation Process may or may not end

* *in the event of a late discovery consultation will be reopened*

- ☐ Potentially significant American Indian sites found
  Phase II evaluation conducted *(see map and list of sites)*
- ☐ American Indian sites eligible for National Register listing cannot be avoided *(see map)*
- ☐ Burial site found

_____ # of non-significant prehistoric sites
_____ # of potentially significant prehistoric sites
_____ # of National Register eligible prehistoric sites

Affected National Register Properties

- ☐ Investigating avoidance or minimizing harm options
- ☐ Avoided
- ☐ Protected
- ☐ Data Recovery/MOA

Please Respond

Who should we contact for site/project related discussions?

Mildred Hudson (Name) 612 S. 9th St. (Street Address) Pauls Valley, Okla. 74601 (City, Zip Code)

580-765-2205 (Phone) _____ (E-mail)

Do you know of any sensitive areas within or near the project the FHWA/DOT should avoid *(please describe)*? _____

- ☐ Thank you for the information; however, we do not need to consult on this particular project.
- ☐ We do not have a comment at this time but request continued notification on this project.
- ☒ Please send a copy of the archaeology report.
- ☐ Thank you for the information. We are satisfied with the planned site treatment.
- ☐ We have concerns and wish to consult.
- ☐ We wish to participate in the Memorandum of Agreement for this project.

Comments _____

Mildred Hudson, NAGPRA Coord. (Name) Otoe-Missouria Tribe (Tribal Name) 5/16/03 (Date)

(Comments continued on back

Appendix B
List of Preparers

APPENDIX B

List of Preparers

Name	Title
Iowa Department of Transportation	
Tracy Roberts, P.E.	Project Manager
Donna Matulac, P.E.	Project Engineer
Stephen Larson	NEPA Compliance Manager
Mike Heller	Environmental Specialist
Nebraska Department of Roads	
Len Sand	Environmental Section - Planning & Project Development
Cindy Veys	Environmental Section - Planning & Project Development
Federal Highway Administration – Iowa Division Office	
Michael LaPietra	Environment and Realty Manager
Rebecca Hiatt, P.E.	Operations Engineer
Lisa Rold, P.E.	Transportation Engineer
Federal Highway Administration – Nebraska Division Office	
Edward Kasola	Realty/Environmental Officer
John Snowdon	Transportation Engineer
CH2M HILL	
Libby Braband	Environmental Lead
Carla Mykytiuk	Environmental Planner
Larry Martin	Senior Environmental Review
Sirpa Hall, P.E.	Project Manager
Nicole Farrington	Geographic Information Systems
Jeffrey Barnett, P.E.	Geographic Information Systems
Athreya Sreenivasan	Geographic Information Systems
Brett Weiland	Field Review
Dan Smith	Engineering
Dan Dupies	Document Quality Assurance
HDR Engineering, Inc.	
Brian Goss	Environmental Lead
Matt Tondl, P.E.	Project Manager
Will Sharp, P.E.	Engineering
Stacey Froscheiser	Special Studies

Appendix C
References

APPENDIX C

References

American Association of State Highway and Transportation Officials. 2001. *A Policy on Geometric Design of Highways and Streets*.

Anderson, W. 1983. *Geology of Iowa – Over Two Billion Years of Change*. Iowa State University Press, Ames, Iowa.

Beaugard, Priscilla. 2003. Neighborhood Center for Greater Omaha. Personal Communication Regarding Neighborhood Associations.

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

Burchett, R. R. 1970. *Guidebook to the Geology Along the Missouri River Bluffs or Southern Nebraska and Adjacent Areas*. University of Nebraska, Conservation and Survey Division, Lincoln, Nebraska.

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Appendix D
Draft EIS Distribution List

APPENDIX D

Draft EIS Distribution List

Federal Agencies

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

State Agencies

Iowa
Iowa Department of Natural Resources
State Historical Society of Iowa

Nebraska
Nebraska Department of Environmental Quality
Nebraska Game and Parks Commission
Nebraska Natural Heritage Program
Nebraska Historical Society
Nebraska State Historical Preservation Office
Nebraska Department of Health and Human Services
Nebraska Department of Natural Resources
Nebraska Commission on Indian Affairs
Nebraska Department of Aeronautics

Local/Regional Units of Government

City of Council Bluffs, Iowa
City of Omaha, Nebraska
Douglas County Board of Commissioners
Douglas County Engineer

Pottawattamie County Board of Supervisors
Pottawattamie County Conservation Board
Pottawattamie County Engineer
Metropolitan Area Planning Agency
Papio-Missouri River Natural Resources District
Metro Area Transit
Nebraska Trucking Association

Tribes

Ponca Tribe of Nebraska
Iowa Tribe of Oklahoma
Omaha Tribal Council of Nebraska
Sac & Fox Nation
Otoe Missouria Tribe

Public Libraries/Other

Omaha Public Library
Council Bluffs Public Library