

**BROADWAY VIADUCT IMPROVEMENT STUDY  
CITY OF COUNCIL BLUFFS,  
POTTAWATTAMIE COUNTY, IOWA**

Iowa DOT Project Number  
NHSX-6-1(109)-3H-78

**ENVIRONMENTAL ASSESSMENT  
AND PROGRAMMATIC SECTION 4(f) EVALUATION**

Submitted Pursuant to 42 USC 4332(2)(c)

By the

**U.S. Department of Transportation  
Federal Highway Administration**

and

**IOWA DEPARTMENT OF TRANSPORTATION  
Highway Division  
Office of Location & Environment**

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Date of Approval



For Iowa Department of Transportation



For Federal Highway Administration

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The purpose of this Project is to maintain a safe and efficient flow of traffic over the Broadway Viaduct by providing a facility that meets Iowa DOT's current design standards for a principal arterial highway. The Broadway Viaduct is part of U.S. 6 connecting Council Bluffs, Iowa, and Omaha, Nebraska, and needs to be replaced to maintain the connectivity between the two cities. The Project is located within the City of Council Bluffs in Pottawattamie County, Iowa. This Environmental Assessment evaluates alternatives for improvements to the existing viaduct and replacing the viaduct, with viaduct replacement identified as the preferred alternative.

The first column with a check means the resource is in the project area. The second column with a check means the impact to the resource warrants more discussion in this document. Resources without a check in the first and/or second column have been reviewed and are included in the summary (see the following page.)

SOCIOECONOMIC		NATURAL ENVIRONMENT	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Land Use	<input type="checkbox"/>	<input type="checkbox"/> Wetlands
<input type="checkbox"/>	<input type="checkbox"/> Community Cohesion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Water Resources
<input type="checkbox"/>	<input type="checkbox"/> Relocation Potential	<input type="checkbox"/>	<input type="checkbox"/> Wild and Scenic Rivers
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Churches and Schools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Floodplain
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Railroads and Utilities	<input type="checkbox"/>	<input type="checkbox"/> Wildlife and Habitat
<input type="checkbox"/>	<input type="checkbox"/> Energy	<input type="checkbox"/>	<input type="checkbox"/> Farmlands
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Public Services	<input type="checkbox"/>	<input type="checkbox"/> Threatened and Endangered Species
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Environmental Justice	<input checked="" type="checkbox"/>	<input type="checkbox"/> Vegetation
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Transportation	<input type="checkbox"/>	<input type="checkbox"/> Ecosystem
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Right-of-Way	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Construction	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Pedestrians and Bicyclists		
<input type="checkbox"/>	<input type="checkbox"/>		
CULTURAL		PHYSICAL	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Archaeological Sites	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Noise
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Historic Sites or Districts	<input type="checkbox"/>	<input type="checkbox"/> Air Quality
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Recreation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Regulated Materials
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Section 4(f) Properties	<input checked="" type="checkbox"/>	<input type="checkbox"/> Visual Resources and Aesthetics
<input checked="" type="checkbox"/>	<b>CONTROVERSY POTENTIAL Closure of viaduct versus maintaining two lanes during construction.</b>		
<input checked="" type="checkbox"/>	<b>Section 4(f): Specify details : The viaduct is considered eligible for the NRHP and would be affected by any construction alternative. Other NRHP eligible resources potentially affected include Indian Creek Channel and building currently hosting Kelley's Carpet. Another 4(f) property potentially affected is the Skateboard Park.</b>		

# TABLE OF CONTENTS

**ACRONYMS, ABBREVIATIONS, AND SHORT FORMS..... vi**

**SECTION 1 DESCRIPTION OF THE PROPOSED ACTION..... 1-1**

1.1 Proposed Action..... 1-1

1.2 Study Area ..... 1-1

**SECTION 2 PROJECT HISTORY ..... 2-1**

2.1 Broadway Viaduct Project Background..... 2-1

2.2 Other Projects Near the Study Area..... 2-3

    2.2.1 Avenue G Viaduct Project Background..... 2-3

    2.2.2 Other Projects ..... 2-4

**SECTION 3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION ..... 3-1**

3.1 Purpose of the Proposed Action ..... 3-1

3.2 Need for the Proposed Action..... 3-1

    3.2.1 Substandard Viaduct..... 3-1

    3.2.2 System Linkage..... 3-3

3.3 Summary of the Purpose of and Need for the Proposed Action ..... 3-4

**SECTION 4 ALTERNATIVES..... 4-1**

4.1 Alternatives Development ..... 4-1

4.2 Initial Range of Alternatives Considered ..... 4-1

    4.2.1 No-Build Option..... 4-1

    4.2.2 Build Options..... 4-2

4.3 Alternatives Screening ..... 4-4

4.4 Alternatives Retained for Detailed Study ..... 4-4

    4.4.1 No-Build Alternative ..... 4-4

    4.4.2 Build Alternative ..... 4-5

4.5 Preferred Alternative ..... 4-6

**SECTION 5 IMPACTS ..... 5-1**

5.1 Land Use..... 5-2

    5.1.1 Existing Conditions..... 5-2

    5.1.2 No-Build Alternative ..... 5-3

    5.1.3 Build Alternative ..... 5-4

    5.1.4 Joint Development ..... 5-4

    5.1.5 Avoidance, Minimization, and Mitigation ..... 5-4

5.2	Churches and Schools.....	5-4
5.2.1	Existing Conditions.....	5-5
5.2.2	No-Build Alternative .....	5-5
5.2.3	Build Alternative .....	5-5
5.3	Railroads and Utilities .....	5-5
5.3.1	Existing Conditions.....	5-6
5.3.2	No-Build Alternative .....	5-7
5.3.3	Build Alternative .....	5-7
5.3.4	Avoidance, Minimization, and Mitigation.....	5-7
5.4	Public Services .....	5-8
5.4.1	Existing Conditions.....	5-8
5.4.2	No-Build Alternative .....	5-8
5.4.3	Build Alternative .....	5-8
5.4.4	Avoidance, Minimization, and Mitigation.....	5-9
5.5	Environmental Justice .....	5-9
5.5.1	Existing Conditions.....	5-10
5.5.2	No-Build Alternative .....	5-10
5.5.3	Build Alternative .....	5-10
5.6	Transportation.....	5-10
5.6.1	Existing Conditions.....	5-11
5.6.2	No-Build Alternative .....	5-11
5.6.3	Build Alternative .....	5-12
5.6.4	Avoidance, Minimization, and Mitigation.....	5-14
5.7	Right-of-Way .....	5-14
5.7.1	Existing Conditions.....	5-14
5.7.2	No-Build Alternative .....	5-15
5.7.3	Build Alternative .....	5-15
5.7.4	Avoidance, Minimization, and Mitigation.....	5-15
5.8	Construction.....	5-16
5.8.1	Existing Conditions.....	5-16
5.8.2	No-Build Alternative .....	5-16
5.8.3	Build Alternative .....	5-16
5.8.4	Avoidance, Minimization, and Mitigation.....	5-21
5.9	Pedestrians and Bicyclists .....	5-22
5.9.1	Existing Conditions.....	5-22
5.9.2	No-Build Alternative .....	5-23
5.9.3	Build Alternative .....	5-23

5.10	Archaeological Sites .....	5-23
5.10.1	Existing Conditions.....	5-23
5.10.2	No-Build Alternative .....	5-24
5.10.3	Build Alternative .....	5-24
5.11	Historic Sites or Districts .....	5-24
5.11.1	Existing Conditions.....	5-24
5.11.2	No-Build Alternative .....	5-25
5.11.3	Build Alternative .....	5-25
5.11.4	Avoidance, Minimization, and Mitigation.....	5-26
5.12	Recreation.....	5-26
5.12.1	Existing Conditions.....	5-26
5.12.2	No-Build Alternative .....	5-27
5.12.3	Build Alternative .....	5-27
5.13	Section 4(f) Properties .....	5-27
5.13.1	Existing Conditions.....	5-29
5.13.2	No-Build Alternative .....	5-29
5.13.3	Build Alternative .....	5-29
5.13.4	Avoidance, Minimization, and Mitigation.....	5-31
5.14	Water Resources .....	5-31
5.14.1	Existing Conditions.....	5-32
5.14.2	No-Build Alternative .....	5-32
5.14.3	Build Alternative .....	5-32
5.14.4	Avoidance, Minimization, and Mitigation.....	5-33
5.15	Floodplain .....	5-33
5.15.1	Existing Conditions.....	5-34
5.15.2	No-Build Alternative .....	5-34
5.15.3	Build Alternative .....	5-34
5.15.4	Avoidance, Minimization, and Mitigation.....	5-35
5.16	Vegetation.....	5-35
5.16.1	Existing Conditions.....	5-35
5.16.2	No-Build Alternative .....	5-35
5.16.3	Build Alternative .....	5-35
5.16.4	Avoidance, Minimization, and Mitigation.....	5-36
5.17	Noise.....	5-36
5.17.1	Existing Conditions.....	5-36
5.17.2	No-Build Alternative .....	5-37
5.17.3	Build Alternative .....	5-37
5.18	Regulated Materials .....	5-38
5.18.1	Existing Conditions.....	5-38
5.18.2	No-Build Alternative .....	5-40

5.18.3 Build Alternative .....5-41

5.18.4 Avoidance, Minimization, and Mitigation .....5-41

5.19 Visual Resources and Aesthetics..... 5-42

5.19.1 Existing Conditions.....5-42

5.19.2 No-Build Alternative .....5-42

5.19.3 Build Alternative .....5-42

5.20 Cumulative Impacts ..... 5-43

5.20.1 Existing Conditions.....5-44

5.20.2 No-Build Alternative .....5-45

5.20.3 Build Alternative .....5-45

5.20.4 Avoidance, Minimization, and Mitigation .....5-46

5.21 Streamlined Resource Summary ..... 5-47

**SECTION 6 DISPOSITION ..... 6-1**

6.1 Federal Agencies ..... 6-1

6.2 State Agencies ..... 6-1

6.3 Local/Regional Units of Government ..... 6-1

6.4 Other ..... 6-2

6.5 Locations Where This Document is Available for Public Review ..... 6-2

**SECTION 7 COMMENTS AND COORDINATION..... 7-1**

7.1 Agency Coordination..... 7-1

7.2 NEPA/404 Merge Coordination..... 7-3

7.3 Public Involvement..... 7-4

7.3.1 Public Meetings..... 7-4

7.3.2 Correspondence..... 7-6

7.3.3 Project Newsletter ..... 7-6

7.3.4 Future Public Involvement..... 7-6

7.4 Tribal Coordination..... 7-6

**SECTION 8 CONCLUSION AND RECOMMENDATION..... 8-1**

**SECTION 9 REFERENCES..... 9-1**

**LIST OF TABLES**

Table 2-1 Projects Near the Study Area ..... 2-4

Table 4-1 Approximate Timelines for Construction Scenarios ..... 4-5

Table 5-1 2005 Businesses on Broadway in the Study Area ..... 5-3

Table 5-2 Historic/Architectural Properties Protected by Section 4(f) ..... 5-30

Table 5-3 Typical Sound Levels Measured in the Environment ..... 5-37

Table 5-4	Sites with RECs or Potential RECs.....	5-38
Table 8-1	Summary of Potential Impacts .....	8-1

## LIST OF FIGURES

Figure 1-1	General Project Area .....	1-2
Figure 1-2	Study Area .....	1-3
Figure 2-1	No-Build Projects .....	2-5
Figure 3-1	Existing Broadway Viaduct, Plan and Elevation.....	3-6
Figure 3-2	Existing Broadway Viaduct, Structural and Functional Issues .....	3-7
Figure 3-3	Existing Broadway Viaduct, Cross Section of Travel Lanes .....	3-8
Figure 4-1	Broadway Viaduct Cross-Section Options .....	4-7
Figure 4-2	Broadway Viaduct Alignment Options.....	4-8
Figure 4-3	Preliminary Horizontal Alignment and Footprint for the Build Alternative.....	4-9
Figure 5-1	Human Environment .....	5-48
Figure 5-2	Local Businesses in or Near the Study Area.....	5-49
Figure 5-3	Existing Average Daily Traffic for Broadway Viaduct Area.....	5-50
Figure 5-4	2030 Forecasted Average Daily Traffic for Broadway Viaduct Area .....	5-51
Figure 5-5	2010 Forecasted Average Daily Traffic for Broadway Viaduct Area with Staged Construction .....	5-52
Figure 5-6	2010 Forecasted Average Daily Traffic for Broadway Viaduct Area with Unstaged Construction .....	5-53
Figure 5-7	Potential Detour Routes.....	5-54
Figure 5-8	Recreation Areas .....	5-55
Figure 5-9	Historic Structures.....	5-56
Figure 5-10	Broadway Skate Park and Preliminary Horizontal Alignment for the Build Alternative .....	5-57
Figure 5-11	Surface Water and Floodplains.....	5-58
Figure 5-12	Sites with Potential Contamination .....	5-59

## LIST OF APPENDICES

Appendix A	Streamlined Resource Checklist and Justification
Appendix B	Agency Correspondence and Comment Letters
Appendix C	Programmatic Section 4(f) Evaluation
Appendix D	Section 106 Memorandum of Agreement

## ACRONYMS, ABBREVIATIONS, AND SHORT FORMS

ADT	average daily traffic
APE	Area of Potential Effect
C&NW	Chicago and North Western Railway
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIN	Commercial and Industrial Network
the City	the City of Council Bluffs
CN	Canadian National Railway Company
CRC	Community Resource Committee
dB	decibel(s)
dBA	A-weighted decibel(s)
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Environmental Site Assessment
et seq.	<i>et sequentia</i> (and the following)
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
HHS	U.S. Department of Health and Human Services

I-29	Interstate 29
I-80	Interstate 80
ILRP	Iowa Land Recycling Program
Iowa DNR	Iowa Department of Natural Resources
Iowa DOT	Iowa Department of Transportation
Iowa SHPO	Iowa State Historic Preservation Office
ITS	Intelligent Transportation System
$L_{eq}$	energy-equivalent sound level
LOS	level of service
L RTP	Long Range Transportation Plan
MAPA	Metropolitan Area Planning Agency
MAT	Metro Area Transit
MEV	million entering vehicles
MOA	Memorandum of Agreement
MSE	mechanically stabilized earth
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PCB	polychlorinated biphenyl
PIM	public information meeting
ppm	parts per million
the Project	alternatives to maintain, improve, or replace the Broadway Viaduct located in the City of Council Bluffs in Pottawattamie County, Iowa

REC	recognized environmental condition
ROD	Record of Decision
ROW	right-of-way
the Study Area	the area of investigation for siting of the Project, which is generally bounded by 16 <sup>th</sup> Street on the west, 8 <sup>th</sup> Street on the east, Avenue A on the north, and 1 <sup>st</sup> Avenue on the south
TCM	Transportation Control Measure
TEA-21	Transportation Equity Act for the 21 <sup>st</sup> Century
Title VI	Title VI of the Civil Rights Act of 1964
TSM	Transportation System Management
U.S. 6	U.S. Highway 6
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish & Wildlife Service
UST	underground storage tank
vpd	vehicles per day

**SECTION 1**

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**DESCRIPTION OF THE PROPOSED ACTION**

## SECTION 1

# DESCRIPTION OF THE PROPOSED ACTION

This Environmental Assessment (EA) is being prepared in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA). This EA informs the public and interested agencies of the proposed action and alternatives to the proposed action in order to gather feedback on the improvements under consideration.

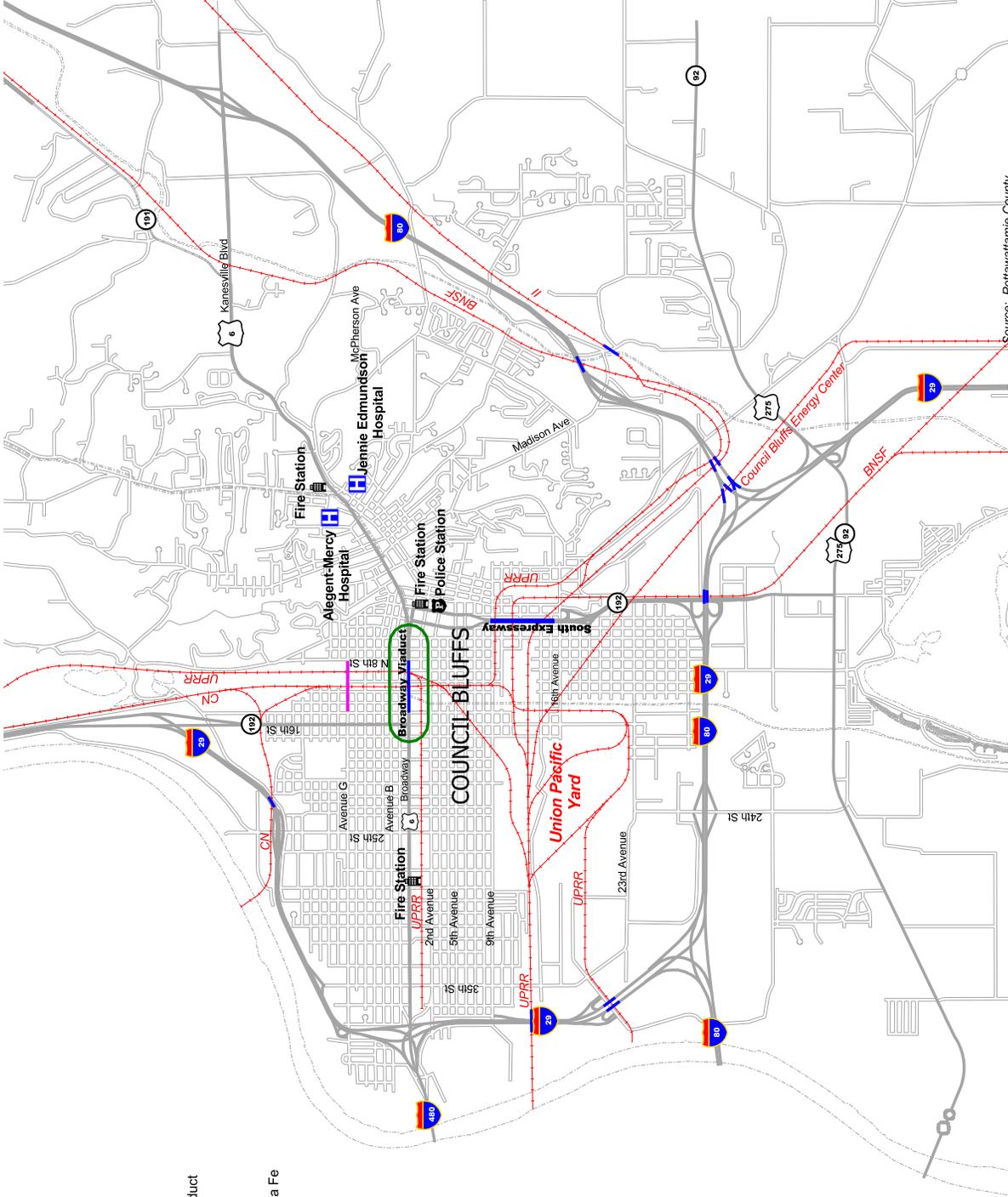
This section describes the proposed action and the study area. Section 2 of this EA summarizes the history of the Broadway Viaduct project and other projects in or near the study area. Section 3 identifies the purpose of and need for the proposed action. Section 4 discusses the initial range of alternatives considered and the process of screening for a reasonable range of alternatives. It also identifies and describes the reasonable build alternative and the preferred alternative. Section 5 discusses the existing condition of potentially affected resources in the study area and the potential impacts resulting from implementing the No-Build or Build Alternative (including two construction scenarios). Section 6 notes the disposition of the document, and Section 7 summarizes the coordination that occurred to prepare the document and identifies document comments and their resolution.

### 1.1 Proposed Action

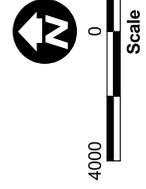
The Iowa Department of Transportation (Iowa DOT) and the Federal Highway Administration (FHWA) are evaluating potential alternatives to maintain, improve, or replace the Broadway Viaduct located in the City of Council Bluffs (the City) in Pottawattamie County, Iowa (the Project). Additionally, the Project would improve the viaduct approaches to the intersections at 16<sup>th</sup> Street and Broadway and at 8<sup>th</sup> Street and Broadway; the intersections would not be improved for this proposed action. Figure 1-1 outlines the general location of the proposed Project.

### 1.2 Study Area

The area of investigation for siting of the Project is generally bounded by 16<sup>th</sup> Street on the west, 8<sup>th</sup> Street on the east, Avenue A on the north, and 1<sup>st</sup> Avenue on the south (the Study Area). The Study Area boundaries were established to allow the development of a wide range of alternatives that could address the Broadway Viaduct's functional and structural issues. The 16<sup>th</sup> and 8<sup>th</sup> Street intersections are logical termini for the Study Area because they are the first north-south arterials that intersect Broadway west and east of the viaduct, respectively. U.S. Highway 6 (U.S. 6) is Broadway in the Study Area and extends west through Omaha, Nebraska, and east through Council Bluffs. The Study Area is larger than the area proposed for construction activities for the Project. However, some impacts, such as traffic, extend beyond the Study Area; where this occurs will be noted and addressed in Section 5, Impacts. Figure 1-2 outlines the Study Area of the proposed action.



- Legend**
- General Project Area
  - Proposed Avenue G Viaduct
  - Grade Separation
  - Rail Line
- Railroad Companies**
- BNSF
  - CN
  - II
  - UPRR
  - Burlington Northern Santa Fe
  - Canadian National
  - Iowa Interstate
  - Union Pacific Railroad

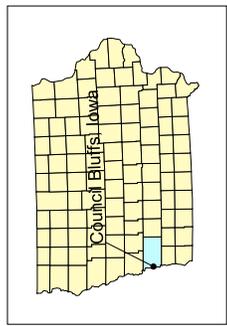


Sources: Pottawattamie County



**General Project Area**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment

DATE: Dec 2005  
 FIGURE: 1-1



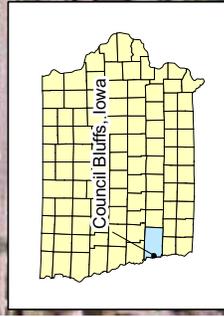
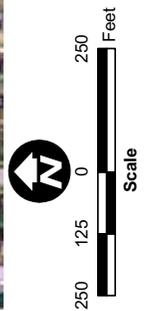


DATE Dec 2005  
 FIGURE 1-2

**Study Area**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment



**Legend**  
 Study Area  
 --- Railroad



## **SECTION 2**

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### **PROJECT HISTORY**

## SECTION 2 PROJECT HISTORY

This section describes the history of the Broadway Viaduct, including the events leading up to the proposed action. This section also discusses other projects in or near the Study Area. In particular, the Avenue G Viaduct project is discussed because of its importance in creating an alternative to Broadway as an east-west grade-separated crossing of the City's north-south railroad corridor.

### 2.1 Broadway Viaduct Project Background

Broadway, which is an important east-west route through the City, was established in the mid-1800s. At that time, the development of Council Bluffs as a railroad center resulted in many roads, including Broadway, crossing railroad tracks at grade. Recognizing that grade-separated crossings for busy thoroughfares were important for continued development and improved safety, the City began planning to construct a viaduct on Broadway in the 1930s. Although the planning process was delayed by World War II, the viaduct was eventually constructed from 1953 to 1955. When it was constructed, the Broadway Viaduct was the second longest viaduct in Iowa (Iowa DOT, July 2002a).

Since its construction, various rehabilitation and maintenance activities have been performed on the Broadway Viaduct. Past activities include overlaying the bridge deck in 1972 and transversely grooving it in 1990; adding a drainage trough system, performing deck joint repair, and patching and sealing piers in 1985; widening the deck over the east cellular abutment<sup>1</sup> to provide a south turn lane at 8<sup>th</sup> Street in 1996; and repairing concrete on the abutments, pier 3, pier 11, and pier 15, along with removing three stairways in 2002 (Iowa DOT, July 2002a). The bridge was last painted in 1977 with a zinc silicate paint, which involved removing the existing paint to bare steel. Spot painting was conducted in 1986 (Iowa DOT, March 24, 2003).

Based on the findings of a bridge inspection on November 16, 2000, Iowa DOT conducted a feasibility study to identify structural and functional concerns with the Broadway Viaduct and to develop design alternatives for rehabilitation or replacement of the viaduct that would meet Iowa DOT's current design standards for a principal arterial highway (Iowa DOT, July 2002a). In the feasibility study, a No-Build Option and five build options were identified and evaluated. Additional background information on this feasibility study regarding consideration of the options for this study is discussed in Section 4, Alternatives.

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<sup>1</sup> Cellular abutments, also known as vaulted abutments, are closed ends of a bridge that are made of reinforced concrete boxes in which the space between the wingwalls, the breast wall, the approach slab, and the footings is hollow.

The most recent bridge inspection, performed on October 14, 2004, indicated that the existing structure has a sufficiency rating of 32<sup>2</sup> (Iowa DOT, March 22, 2005). This indicates that the existing Broadway Viaduct is approaching the end of its useful life and does not meet current functional design standards for a principal arterial highway (see Section 3 for details on the purpose of and need for the project).

Because the feasibility study and the 2004 bridge inspection indicated that the Broadway Viaduct no longer meets structural and functional requirements, the Broadway Viaduct Improvement Study was initiated. FHWA and Iowa DOT determined that an EA was the appropriate document to fulfill the NEPA compliance requirement for this proposed action, where the anticipated transportation solution would involve repair or replacement of the existing viaduct. This determination was based on the limited potential for significant impacts, such as socioeconomic, relocation, noise, environmental justice, and historic property impacts.

FHWA and Iowa DOT also determined that because the viaduct is adjacent to the Broadway Skate Park (which could be impacted by the Project) and the viaduct itself is a historic property, Section 4(f) of the U.S. Department of Transportation Act of 1966 would be invoked. Section 4(f) stipulates that no highway project requiring the use of parks, public recreation areas, wildlife and waterfowl refuges, or significant historic properties can be approved unless there are no feasible and prudent alternatives to such use and all possible planning is included to minimize harm. Significant historic properties are those that are eligible for listing on the National Register of Historic Places (NRHP). Other potential Section 4(f) properties in the Study Area include, but are not limited to, historic properties such as the Indian Creek Channel and the building housing Kelly's Carpet and Furniture. Consequently, a Section 4(f) evaluation was determined to be required in conjunction with preparation of an EA.

The current Broadway Viaduct Improvement Study, which includes the EA, related studies, and preliminary design of the eventually selected alternative, commenced in May 2004. A public meeting was held on December 7, 2004, at the Council Bluffs Public Library to present the study schedule and discuss how the public can become involved in the study, describe the condition of the Broadway Viaduct and address issues concerning its continued use, and obtain input on the preliminary range of alternatives and environmental constraints in the Study Area.

Subsequent to completion of the EA and preliminary design, final design would be performed, right-of-way (ROW) would be acquired, and construction would occur. The Broadway Viaduct project is in Iowa DOT's 2006-2010 Transportation Improvement Program, with construction planned to commence in 2009 (Iowa DOT, November 1, 2005).

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<sup>2</sup> Sufficiency ratings are based on a formula that accounts for structural adequacy and safety, serviceability and functional obsolescence, essentiality for public use, and special reductions. These ratings are scaled from 0 to 100. Sufficiency ratings of less than 50 denote that a bridge is eligible for Federal bridge replacement funding.

## 2.2 Other Projects Near the Study Area

In addition to the proposed action addressed in this EA, there are several other projects in close proximity to this proposed action. These projects, especially the Avenue G Viaduct project, are major undertakings that will affect traffic flow in the area of the Broadway Viaduct. Therefore, these projects are discussed below.

### 2.2.1 Avenue G Viaduct Project Background

During the 1990s, traffic congestion increased on Broadway and the Broadway Viaduct. This congestion was accompanied by an increase in crashes and emergency response times. The City recognized that, in addition to the Broadway Viaduct, another east-west grade-separated crossing of the north-south railroad corridor in Council Bluffs was necessary. In 1998, the City secured financial assistance through the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) to alleviate these problems by constructing a viaduct at Avenue G (FHWA and Iowa DOT, January 2003). This transportation improvement was also included in the Metropolitan Area Planning Agency (MAPA) 2025 Long Range Transportation Plan (LRTP) (MAPA et al., September 2000).

The Avenue G Viaduct and Corridor Project began on December 28, 1999, when a Notice of Intent was published in the *Federal Register* as a formal announcement that FHWA, together with Iowa DOT and the City, was preparing an Environmental Impact Statement (EIS) for the project. Following one agency scoping meeting, three meetings with the Community Resource Committee (CRC), and three public meetings, the Draft EIS was prepared and circulated in July 2002. Upon completion of public and agency comment on the Draft EIS, the Final EIS was approved by FHWA and Iowa DOT on January 30, 2003. The Record of Decision (ROD) was signed on April 17, 2003.

The Avenue G Viaduct and Roadway Improvements project involves the construction of a four-lane viaduct along Avenue G from North 8<sup>th</sup> to North 16<sup>th</sup> Street, including an improved roadway connection from the viaduct's eastern terminus (North 8<sup>th</sup> Street and Avenue G) to Kaneshville Boulevard. North 6<sup>th</sup> Street would be one-way northbound, and North 7<sup>th</sup> Street would be one-way southbound. The structure would have a travel width of 50 feet and a 10-foot sidewalk/trail separated from the travel lanes with a concrete barrier. The viaduct would have a total length of 1,550 feet and would span from North 10<sup>th</sup> to North 13<sup>th</sup> Street (FHWA and Iowa DOT, January 2003). The sidewalk/trail would extend westward to 16<sup>th</sup> Street and along the west side of 7<sup>th</sup> Street and eastward to where 7<sup>th</sup> and 6<sup>th</sup> Streets diverge (between Avenue F and E) (Council Bluffs Department of Parks, Recreation, and Public Property, March 23, 2005). This project is planned to be completed by 2007, before construction of the Broadway Viaduct Project would commence. This will allow the Avenue G Viaduct and Roadway Improvements project, which will be the closest east-west grade-separated crossing of the railroad, to serve as a potential detour route during improvement or reconstruction of the Broadway Viaduct.

**2.2.2 Other Projects**

Other projects near the Study Area are at various stages of study and/or implementation. Table 2-1 identifies these projects and provides the lead agency for, a description of, and the current status of these projects. Figure 2-1 shows the locations of the Avenue G project, the projects noted in the table, and other potential Council Bluffs transportation system improvements.

**Table 2-1  
Projects Near the Study Area**

<b>Project</b>	<b>Lead Agency</b>	<b>Project Description</b>	<b>Status</b>
North Broadway	City of Council Bluffs/Iowa DOT	Improvement of North Broadway from two to three lanes from Kanesville Boulevard north to Mud Hollow Road	Listed in the MAPA 2025 LRTP. This project would potentially start construction by 2010.
Madison Avenue	City of Council Bluffs/Iowa DOT	Improvement of Madison Avenue from two to four lanes from Broadway south to Bennett Avenue	Listed in the MAPA 2025 LRTP. This project would potentially start construction by 2010 for three-lane improvement from Bennett Avenue to Palmer Avenue. The remainder of the project would potentially start by 2015.
Council Bluffs Interstate System	Iowa DOT	Long-term, broad-based transportation improvements along I-80, I-29, and I-480, including 18 mainline miles of interstate and 14 interchanges (three system, 11 service)	Listed in the MAPA 2025 LRTP. This project would be constructed in segments starting in the next 10 years and would be completed in the next 30 years subject to funding availability.



**SECTION 3**

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**PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

## SECTION 3

### PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This section describes the purpose of and need for the proposed action based on the transportation system problems that currently exist in the Study Area. This section details the substandard nature of the existing Broadway Viaduct both structurally and functionally and explains the importance of Broadway as the principal arterial in the City.

#### 3.1 Purpose of the Proposed Action

The purpose of the proposed action is to maintain a safe and efficient flow of traffic over the north-south railroad corridor beneath the Broadway Viaduct by providing a facility that meets Iowa DOT's current design standards for a principal arterial highway.

#### 3.2 Need for the Proposed Action

The need for the proposed action is based on a combination of factors, as follows:

- The existing Broadway Viaduct is approaching the end of its useful life and does not meet current functional design standards for a principal arterial highway.
- The Broadway Viaduct is a critical link along the principal arterial connecting east Council Bluffs to downtown Omaha and is currently the only grade-separated crossing of the north-south railroad corridor in Council Bluffs.

The substandard nature of the viaduct and the viaduct's importance as a critical component of a transportation link between Council Bluffs and Omaha are discussed in more detail below.

##### 3.2.1 Substandard Viaduct

###### ***Structural Issues***

The existing viaduct is a continuous-steel-beam bridge with a concrete deck that was constructed from 1953 to 1955. It is a four-lane divided bridge that is 2,114 feet in length, including a 320-foot-long cellular abutment on the west end and a 400-foot-long cellular abutment on the east end. Figure 3-1 illustrates a plan and cross-section view of the viaduct. As discussed in Section 2.1, Broadway Viaduct Project Background, rehabilitation and maintenance work has been performed on the viaduct since its construction.

As explained in Section 2.1, the viaduct's sufficiency rating is 32. Sufficiency ratings are derived from a formula that is composed of four separate factors that are combined to calculate the bridge's sufficiency to remain in service. The four factors are the following:

1. Structural Adequacy and Safety: 55 percent of total rating
2. Serviceability and Functional Obsolescence: 30 percent of total rating
3. Essentiality for Public Use: 15 percent of total rating
4. Special Reductions: -13 percent<sup>1</sup> of total rating

The overlay on the deck is near the end of its useful life. The cellular abutments are deteriorating, as are several of the piers. Pictures of some structural issues are shown in Figure 3-2. An evaluation of the fatigue life of the structure also indicated that it is near the end of its useful life. However, due to the redundancy of the multiple beam structure, piers, and bearing devices, the current stability of the structure is not jeopardized. Further deterioration of the structure will likely result in problematic fatigue cracks, which would require periodic and more detailed inspection and possibly result in lane closures depending on the extent of the required repairs. Consequently, the frequency and cost of maintenance would continue to increase.

### **Functional Issues**

The Broadway Viaduct spans several City streets and two railroad corridors (see Figure 3-1). The existing cross section consists of 26-foot-wide roadways (two 13-foot-wide travel lanes) in each direction separated by a double-sided guardrail on top of a raised 4-foot-wide median (Iowa DOT, July 2002a). A 6-foot-wide sidewalk with a 5-foot-wide walking surface is on the north side of the viaduct and is separated from the westbound traffic lane by a 1-foot-high steel rail. A cross section of the viaduct illustrating the travel lanes, median, and sidewalk is provided in Figure 3-3. The eastbound roadway widens to 40 feet near the east end of the viaduct. A cross section of the viaduct indicates that design criteria are not met for shoulder width (the viaduct lacks shoulders, and 6 feet is the standard), curb offset (the viaduct has a 1-foot offset compared to a 2-foot standard), and pedestrian protection (CH2M HILL, April 21, 2005).

When an accident occurs on the Broadway Viaduct, emergency vehicles have trouble accessing the accident because of the queue that forms as vehicles move around the crash; sometimes the viaduct must be bypassed on nearby surface roads to reach the accident site. For example, an accident in the eastbound lanes of the viaduct could require an emergency vehicle responding from west of the viaduct to proceed south to 2<sup>nd</sup> Avenue, north on 8<sup>th</sup> Street, and west on the viaduct onto the blocked eastbound lanes. Consequently, one or both lanes of traffic in a given direction may need to be closed because there are no shoulders or median available for disabled or emergency vehicles.

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<sup>1</sup> The negative percentage associated with “Special Reductions” indicates that there are certain characteristics of the bridge that can have a negative impact on its sufficiency, including the length of any required detours, main structure type, and traffic safety features on the structure.

Existing traffic along the viaduct is approximately 33,300 vehicles per day and is projected to remain at the same magnitude in the design year 2030 (32,000 vehicles per day) (CH2M HILL, April 26, 2005). Improvements to Avenue G, creating another grade-separated crossing of the north-south railroad corridor, and the Council Bluffs Interstate System would slightly reduce traffic demand for the Broadway Viaduct. Consequently, the new viaduct could adequately handle traffic with four lanes.

The viaduct has a steel rail (approximately 4 feet high) on the outside of the structure but lacks a pedestrian fence designed to protect pedestrians and bicyclists from falling over the viaduct. The viaduct also has a steel rail (approximately 1 foot high) for a physical protection barrier between vehicular and non-vehicular traffic. The steel rails do not meet current physical protection criteria.

There are three crossing locations where the Broadway Viaduct does not meet vertical clearance design criteria: the Canadian National Railway Company (CN) railroad (1.8 feet less than design criteria), 10<sup>th</sup> Street (1.2 feet less than design criteria), and 13<sup>th</sup> Street (0.8 foot less than design criteria) (CH2M HILL, April 21, 2005). Inadequate clearance could result in accidents for vehicles traveling beneath the viaduct.

Figure 3-2 shows photographs of the low vertical clearance at 10<sup>th</sup> Street, the lack of shoulders, and the current barriers (a median and the two aforementioned steel barriers) on the viaduct.

### **3.2.2 System Linkage**

#### ***Principal Arterial***

Broadway is a principal arterial and the most important roadway within the City, as evidenced by its high volume (more than 30,000 vehicles per day), highway designation, and grade-separation status. U.S. 6 (Broadway and Kaneshville Boulevard) is a key commuting route as it is the only east-west corridor that connects east Council Bluffs and downtown Omaha. It is also the only current grade-separated crossing of the City's north-south railroad corridor. U.S. 6 is part of the Commercial and Industrial Network (CIN) in Iowa. The CIN, established in 1989, is a network of primary highways to "improve the flow of commerce; make travel more convenient, safe and efficient; and better connect Iowa with regional, national and international markets" (Iowa DOT, 1999). Roadways on these systems serve as corridors that provide vital links for services and movement of raw materials and consumer goods.

#### ***Grade-Separated Crossing***

Other east-west arterials cross the railroad corridor at grade, resulting in lengthy travel delays while vehicle traffic waits for train traffic to clear. The railroad corridor in the general project area handles approximately 30 trains per day; that number is projected to increase to 50 trains per day within the next 15 years. Coal traffic accounts for more than half of the mainline movements in this area. Coal trains typically require a gate-down time of almost 6 minutes (FHWA and Iowa DOT, January 2003).

The north-south railroad corridor splits the downtown service area for emergency responders. Figure 1-1 shows the north-south railroad corridor in relation to the City's police station, fire stations (which include ambulance and paramedic services), and two local hospitals. Fire and ambulance service is provided from multiple fire stations, as follows:

- The main station, located downtown on South 4<sup>th</sup> Street, is responsible for the area east of 16<sup>th</sup> Street.
- Smaller stations are located at 27<sup>th</sup> Street and Broadway on the west end of town and on East Broadway on the east end of town. The former is responsible for the area west of 16<sup>th</sup> Street.

According to City officials, a fire of any significance requires support from the downtown station, which requires fire engines to cross the railroad corridor. In addition, law enforcement vehicles have to cross the railroad corridor on a routine basis (FHWA and Iowa DOT, January 2003).

Both hospitals in the City are on the east side of town, about 1.25 miles east of the Broadway Viaduct. To avoid the risk of delay by train traffic, emergency vehicles traveling from the west side of town to the hospitals nearly always use the Broadway Viaduct. A consensus among the City's emergency service providers that response times would improve with a second viaduct was a key need identified for the Avenue G Viaduct project (FHWA and Iowa DOT, January 2003). The Avenue G Viaduct and associated roadway improvements are undergoing final design, with an expectation that construction would start in 2007 and be completed in 2009. The Broadway Viaduct Project would not start until the Avenue G Viaduct and roadway improvements are completed.

### **3.3 Summary of the Purpose of and Need for the Proposed Action**

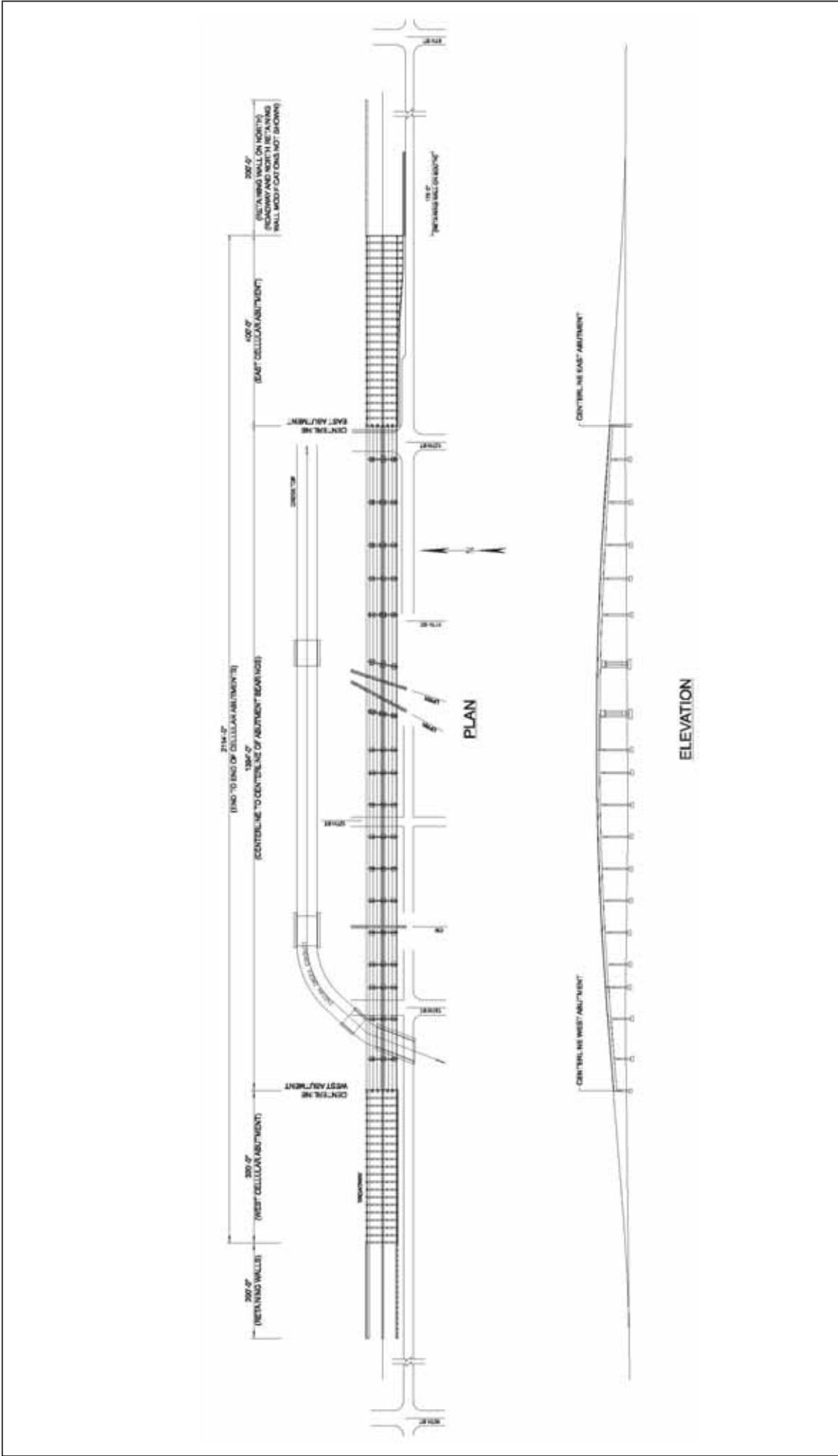
The proposed action is necessary to maintain a safe and efficient flow of traffic over the north-south railroad corridor beneath the Broadway Viaduct by providing a facility that meets Iowa DOT's current design standards for a principal arterial highway.

The need for the proposed action is based on a combination of factors, as follows:

- The existing Broadway Viaduct is approaching the end of its useful life and does not meet current functional design standards for a principal arterial highway.
- The Broadway Viaduct is a critical link along the principal arterial connecting east Council Bluffs to downtown Omaha and is currently the only grade-separated crossing of the north-south railroad corridor in Council Bluffs.

Reaching the end of its useful life may lead to problematic fatigue cracks, which would require periodic and more detailed inspection and possibly result in lane closures. Beyond structural concerns, the existing viaduct does not meet Iowa DOT design criteria for shoulder width (the viaduct lacks a shoulder), curb offset, pedestrian protection, and vertical clearance.

The Broadway Viaduct is part U.S. 6 connecting Council Bluffs and Omaha and needs to be replaced to maintain the connectivity between the two cities. It is a critical emergency route because emergency responders depend on the structure to provide efficient, grade-separated access to areas east and west of the north-south railroad corridor in Council Bluffs.



**Existing Broadway Viaduct  
Plan and Elevation**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment

Date: December 2005  
 Figure: 3-1

**Figure 3-2  
Existing Broadway Viaduct, Structural and Functional Issues**



**Photo 1. Deck is in poor condition**



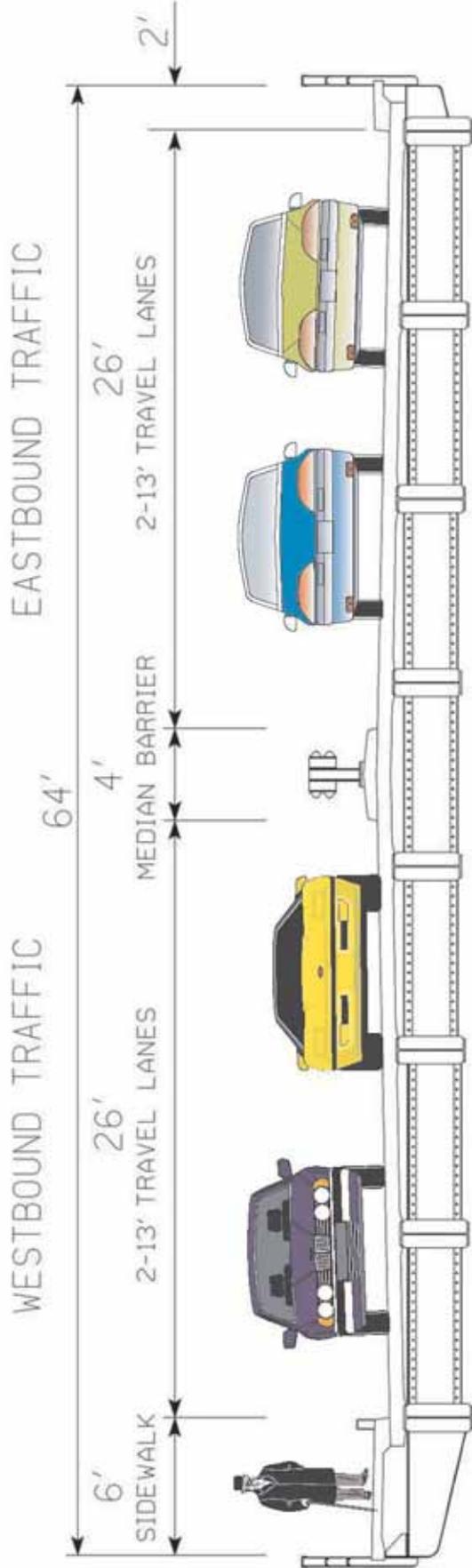
**Photo 2. Bridge supports and beams are also in poor condition**



**Photo 3. Bridge lacks established vertical clearance over 10<sup>th</sup> Street**



**Photo 4. Bridge lacks standard shoulders**



**Existing Broadway Viaduct  
Cross Section of Travel Lanes**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment

Date: December 2005

Figure: 3-3

**SECTION 4**

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**ALTERNATIVES**

## SECTION 4 ALTERNATIVES

This section describes the range of alternatives developed to correct the existing and future problems on the Broadway Viaduct identified in Section 3, Purpose of and Need for the Proposed Action. The focus of Section 4 is to present the initial broad range of alternatives considered, the screening process for narrowing the initial range of alternatives and the rationale for eliminating some alternatives, the reasonable alternatives retained for detailed study, and the Project's preferred alternative. For the purpose of this study and to agree with terminology in the 2002 Broadway Street Viaduct Feasibility Study conducted by Iowa DOT (Iowa DOT, July 2002a), the viaduct concepts developed are identified as "options," and those retained for detailed study are identified as "alternatives." The following addresses the alternatives development and screening process in compliance with NEPA, although the concepts are identified as "options."

### 4.1 Alternatives Development

As discussed in Section 2, Project History, this Broadway Viaduct Improvement Study is a follow-up to the 2002 feasibility study (Iowa DOT, July 2002a), which examined a No-Build Option and five build options, ranging from partial build/rehabilitation options to full build options. Three of the five options were located along the same alignment as the existing viaduct. That is, the centerline of the proposed median was located along the centerline of the existing median. The two remaining options were located on new alignment north and south of the existing viaduct.

All build options discussed in the feasibility study assumed a 92-foot-wide typical cross section for the viaduct. This cross section included four 12-foot-wide lanes (two lanes in each direction); 10-foot-wide outside shoulders; a 10-foot-wide median; a 10-foot-wide pedestrian trail on the north side of the viaduct (with pedestrian protection barriers); and a vehicular barrier on the south side of the viaduct.

### 4.2 Initial Range of Alternatives Considered

The following summarizes the range of options considered based on the 2002 feasibility study and this evaluation.

#### 4.2.1 No-Build Option

Under the No-Build Option, there would be no improvements other than normal pavement and substructure maintenance and minor safety improvements as necessary. This option would provide an uncertain length of service and would require periodic, detailed inspection. Depending on the extent of future repairs, it could also result in lane closures. In addition, the roadway width would not meet current design standards for a principal arterial highway.

### 4.2.2 Build Options

The build options focus on long-term improvements to the Broadway Viaduct that would address the following key need factors identified in Section 3:

- Structural issues
- Functional issues

The preliminary range of build options was developed in view of local transportation and land use plans, public input, and coordination with local officials and review agencies. The preliminary build options, described below, include the options developed during the feasibility study and the options developed during this study.

#### **2002 Broadway Viaduct Feasibility Study Options**

As noted previously, five build options were developed during the feasibility study, three along the existing Broadway Viaduct alignment and two on new alignment (one north and one south of the existing structure) (Iowa DOT, July 2002a). For the five build options, a 92-foot-wide typical section was assumed. These build options were considered during the commencement of the 2004 Broadway Viaduct Improvement Study, and variations of three of the options (discussed below) were evaluated because a narrower section was desired to limit impacts.

#### **2004 Broadway Viaduct Improvement Study Options**

The range of build options developed during this study represent refinements of the options developed during the feasibility study. Options 1 and 2 from the 2002 feasibility study (both options would involve repairing portions of the existing viaduct) were not considered for the 2004 study because they would not fully address the viaduct's structural issues. The 2004 options used a narrower typical section (approximately 80 feet wide) than the 2002 options (92 feet wide). The rationale for narrowing the sections was based on minimizing impacts on adjacent properties (such as frontage roads parallel and adjacent to the viaduct) and reducing the cost of the viaduct. A westbound frontage road is adjacent to and north of the existing viaduct from 13<sup>th</sup> to 15<sup>th</sup> Streets. A discontinuous frontage road is adjacent to and south of the existing viaduct from 8<sup>th</sup> to 15<sup>th</sup> Streets.

Figure 4-1 shows the selected cross section option for the proposed viaduct based on the evaluation of several cross section options. The options were screened to three presented at a public information meeting on December 7, 2004. Based on interaction with the public and the City, several features of the different options were preferred and a new cross section (shown in Figure 4-1) was developed. The proposed cross section is 79 feet 8 inches wide with a raised median, two 12-foot-wide travel lanes in each direction, 8-foot-wide outside shoulders, and a 6-foot-wide sidewalk (with proper pedestrian protection) on the north side of the structure.

As part of the Highways for LIFE Program,<sup>1</sup> Iowa DOT is seeking pilot projects to adopt innovative practices and technologies to reduce construction durations, attain higher quality, and improve safety. Therefore, innovative construction techniques were considered in addition to standard techniques for all the 2004 options described below.

Option 3A is similar to Option 3 in the feasibility study but would involve demolishing the existing structure (requiring complete closure during construction) and constructing the new viaduct in the same location as the existing structure. During construction, Broadway Viaduct traffic would be guided along a marked detour route or routes to be determined through consultation between Iowa DOT and the City. Some traffic diversion to adjacent streets that are not part of the marked detour is possible.

Option 4A is similar to Option 4 in the feasibility study. The centerline of Option 4A is located approximately 44 feet north of the centerline of the existing viaduct's median. Although this option is partially within the footprint of the existing viaduct, it would allow four lanes of traffic to be maintained on Broadway during construction. Minor reconstruction on the east leg and west leg of the 16<sup>th</sup> and 8<sup>th</sup> Street intersections would be required. This option would require removal of the frontage road north of the existing viaduct along the Broadway Skate Park.

Option 4B is similar to Option 4 in the feasibility study and Option 4A except that it would use dual structures, one structure for eastbound traffic and one for westbound traffic. The centerline of Option 4B is located approximately 39 feet north of the centerline of the existing viaduct's median. Although this option is partially within the footprint of the existing viaduct, it would allow four lanes of traffic to be maintained on Broadway during construction. Minor reconstruction on the east leg and west leg of the 16<sup>th</sup> and 8<sup>th</sup> Street intersections would be required. This option also would require removal of the frontage road north of the existing viaduct along the Broadway Skate Park.

Option 5A is similar to Option 5 in the feasibility study. The centerline of Option 5A is shifted approximately 50 feet south of the centerline of the existing viaduct's median. Although this option is partially within the footprint of the existing viaduct, it would allow four lanes of traffic to be maintained on Broadway during construction. Minor reconstruction would be required on the east leg of the 16<sup>th</sup> Street intersection and realignment of the east and west legs of the 8<sup>th</sup> Street intersection. This option would require removal of the entire frontage road south of the existing viaduct.

Option 5B is similar to Option 5 in the feasibility study and Option 5A except that it would use dual structures, one structure for eastbound traffic and one for westbound traffic. Option 5B would maintain four lanes of traffic during construction. The centerline of Option 5A is shifted approximately 47 feet south of the centerline of the existing viaduct's

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<sup>1</sup> The Highways for LIFE Program was initiated by the U.S. Department of Transportation in 2003 to facilitate rapid transportation improvements. LIFE is an acronym for Long Lasting, Innovative, Fast Construction, and Efficient and safe bridges and roadways.

median. Although this option is partially within the footprint of the existing viaduct, it would allow four lanes of traffic to be maintained on Broadway during construction. Minor reconstruction on the east leg of the 16<sup>th</sup> Street intersection and realignment of the east and west legs of the 8<sup>th</sup> Street intersection would be required. This option also would require removal of the entire frontage road south of the existing viaduct.

Figure 4-2 shows the centerline locations of these on- and off-alignment options.

### 4.3 Alternatives Screening

Subsequent to the identification of the range of options considered for the Broadway Viaduct Improvement Study, a screening process was applied to eliminate build options based on their inability to meet the Project purpose and need or on unacceptable environmental, geotechnical, or engineering design or other circumstances that would prevent them from being constructed. The following describes the rationale for eliminating several build options from detailed analysis.

Options 4A and 4B, which would locate the new viaduct north of its current location, were eliminated from further consideration for impact reasons. These options address the Broadway Viaduct's functional and structural issues; however, impacts on the north side of the existing viaduct would include the total acquisition of the former American Roofing facility and strip acquisitions at Jeffery W. Waters Memorial Park, Broadway Skate Park, Aquila (formerly People's Natural Gas Company), and Bucky's Amoco. In addition, the City's storm sewer pumping station located next to the Broadway Skate Park could be affected.

Options 5A and 5B, which would locate the new viaduct south of its current location, were also eliminated from further consideration for impact reasons. These options address the Broadway Viaduct's functional and structural issues; however, impacts on the south side of the existing viaduct would include the total acquisition of Kelly's Carpet and Furniture, Viaduct Storage, Jerry's Prop and Marine, an equipment maintenance garage, and Bob's Towing and Garage. In addition, there would be strip acquisitions at the Drug Town Store, Golden Plaza West, Hill Valley Plaza, and Burger King. Though not within the footprint of this alternative, Russ's Auto Upholstery would likely be displaced due to loss of access by the removal of the south frontage road.

### 4.4 Alternatives Retained for Detailed Study

#### 4.4.1 No-Build Alternative

Although the No-Build Alternative would include normal pavement and substructure maintenance and minor safety improvements as necessary, such improvements would not address the Broadway Viaduct's structural and functional issues discussed in Section 3, Purpose of and Need for the Proposed Action. The No-Build Alternative would fail to address the Project purpose and need and therefore is not considered a reasonable course of action. However, its consideration is required by NEPA, as implemented through 40 Code of

Federal Regulations (CFR) 1502.14, and was therefore retained for consideration and to serve as a baseline for comparison with any other alternatives carried forward for detailed analysis.

**4.4.2 Build Alternative**

Option 3A would be approximately 80 feet wide and constructed along the existing centerline. Because the existing viaduct is 64 feet wide, the widening would occur approximately 9 feet to the north and 7 feet to the south. Option 3A has two construction scenarios. One option would maintain two lanes of traffic during construction, resulting in multiple construction phases (staged). The other option would close the existing viaduct to traffic between 16<sup>th</sup> and 8<sup>th</sup> Streets and construct the new viaduct in a single construction phase (unstaged). Option 3A is considered as the Build Alternative in the remainder of this document. As noted, the Build Alternative includes two implementation scenarios: staged construction and unstaged construction. Both construction scenarios were presented at the public information meeting in Council Bluffs on December 7, 2004, and both are evaluated in Section 5, Impacts, for potential environmental impacts. One of the key differences between the construction scenarios is the amount of time required to complete construction activities. Table 4-1 summarizes the construction timelines.

**Table 4-1  
 Approximate Timelines for Construction Scenarios**

<b>Construction Scenario</b>	<b>Innovative Design, Materials, and Techniques</b>	<b>Conventional Design, Materials, and Techniques</b>
Unstaged	8 months	14 months
Staged	15 months	21 months

With both construction scenarios, traffic diversion from Broadway to other arterials and local roadways is expected in and adjacent to the Study Area. A traffic diversion model was developed for Iowa DOT in cooperation with MAPA to estimate the traffic diversion patterns with the two construction scenarios in 2010, the assumed first year of Broadway construction. The model assumed that the Avenue G Viaduct would be open to traffic prior to construction along Broadway and would be able to accept a portion of the diverted Broadway traffic. The model showed that approximately 13,200 vehicles per day (of the 29,300 vehicles expected to use the viaduct per day in 2010) would divert from Broadway to other roadways with staged construction. Closing the viaduct to all traffic with unstaged construction would divert all 29,300 vehicles to other roadways. To safely accommodate the diverted traffic from either alternative, minor improvements (for example, resurfacing or intersection widening) and/or temporary improvements (for example, temporary signals, two-way to one-way pair conversions, removal of parking, or Intelligent Transportation System [ITS] strategies) to other arterials and local roadways would be required. Innovative construction techniques for both the staged construction and the unstaged construction scenarios are being considered to shorten the duration of construction. Impacts related to the two construction scenarios are addressed by environmental resource in Section 5.

Figure 4-3 depicts the preliminary horizontal alignment and footprint (which includes the area used to facilitate construction) for the Build Alternative. The north and south frontage roads shown parallel to Broadway Viaduct are discontinuous. The horizontal alignment is developed with the wider of the two typical cross-section options still being considered, as discussed previously. The centerline of the new viaduct would be located along the existing viaduct centerline. However, the new viaduct would be wider on both sides than the existing viaduct to accommodate the 8-foot-wide outside shoulders. Additional width would also be added to the north side of the viaduct for a wider sidewalk and proper pedestrian protection. The width of the frontage roads would be decreased.

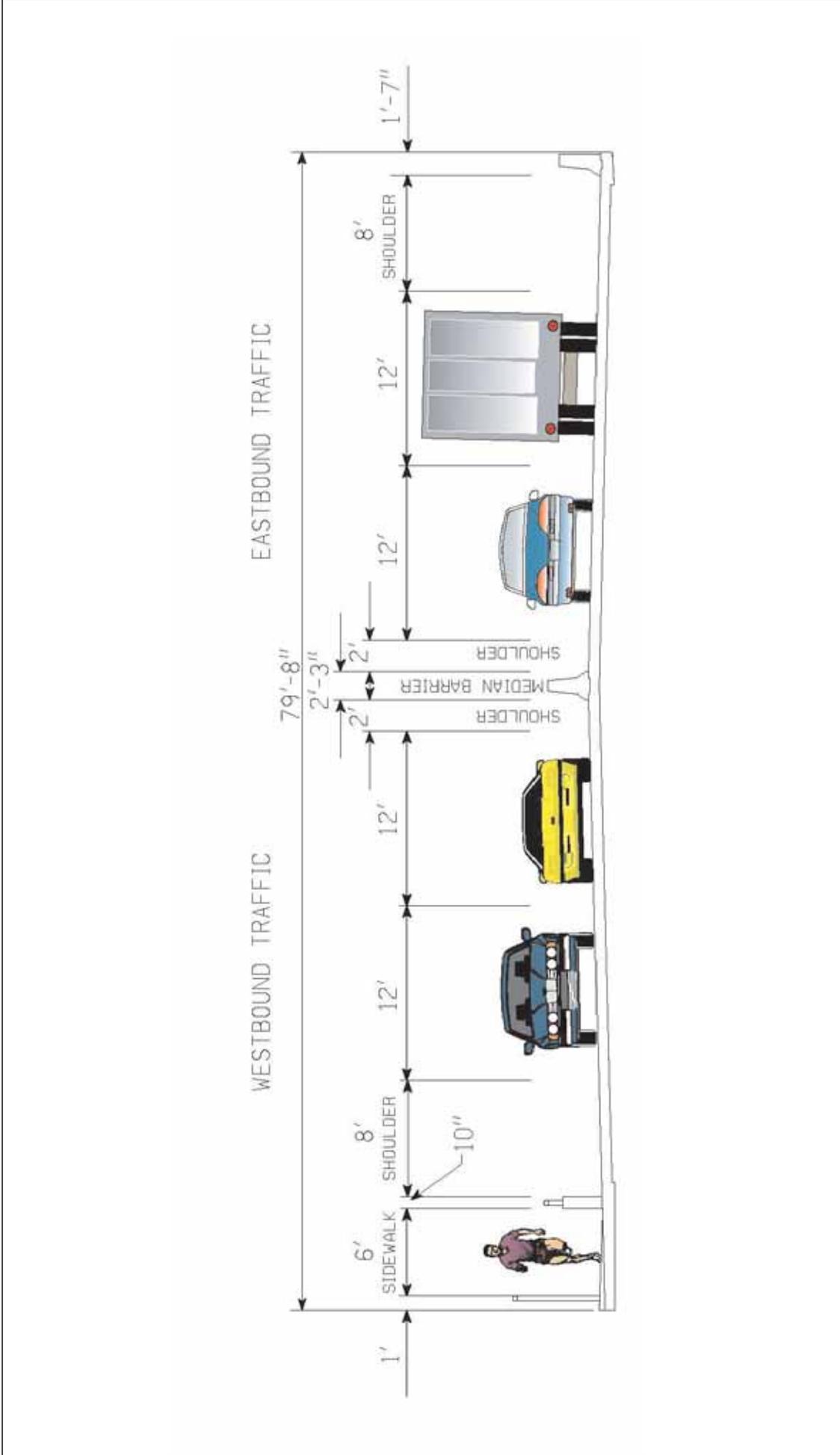
The abutment locations for a new viaduct have been assumed to be the same as for the existing viaduct. The City and Iowa DOT are conducting a study to consider the possibility of narrowing of some railroad corridors and eliminating others throughout Council Bluffs. The conclusions of the railroad study are not anticipated prior to the conclusion of this Project. In addition, the conceptual design is based on the assumption that all side roads beneath the current viaduct must remain open to traffic and function as they do today. If the railroad corridors beneath the viaduct are narrowed and/or it is determined that certain side roads can be relocated or closed in the future, the abutments can be relocated to decrease the structure length.

Based on the horizontal and vertical alignments developed to date, it appears that the reconstruction of the viaduct can be tied to the existing approaches east of the 16<sup>th</sup> Street and west of the 8<sup>th</sup> Street intersection. No improvements or reconstruction of these two signalized intersections is assumed for this Project. A minor grade change at the 15<sup>th</sup> Street intersection is possible. The usable width of the frontage roads parallel to the existing viaduct may be affected and will be considered in the design of the viaduct. The proposed viaduct will be designed to meet current Iowa DOT design standards.

#### **4.5 Preferred Alternative**

After reviewing the reasonable alternatives under consideration, Iowa DOT has identified the Build Alternative (reconstructing the Broadway Viaduct on its existing alignment) as the preferred alternative. This alternative is preferred because it meets the Project purpose and need while minimizing overall impacts. This alternative consists of removing and replacing the existing viaduct in either a staged or an unstaged construction scenario. Iowa DOT is meeting with the City to identify a preferred construction scenario.

Final selection of an alternative, including a construction scenario, will not occur until FHWA and Iowa DOT evaluate all comments received as a result of their review of this document and the public hearing on the Broadway Viaduct Improvement Study. Following public and agency review of this EA, FHWA and Iowa DOT will determine if an EIS is required. If one is not required, the selected alternative will be identified in the Finding of No Significant Impact (FONSI) document. If an EIS is required, then a preferred alternative would be selected through that process.

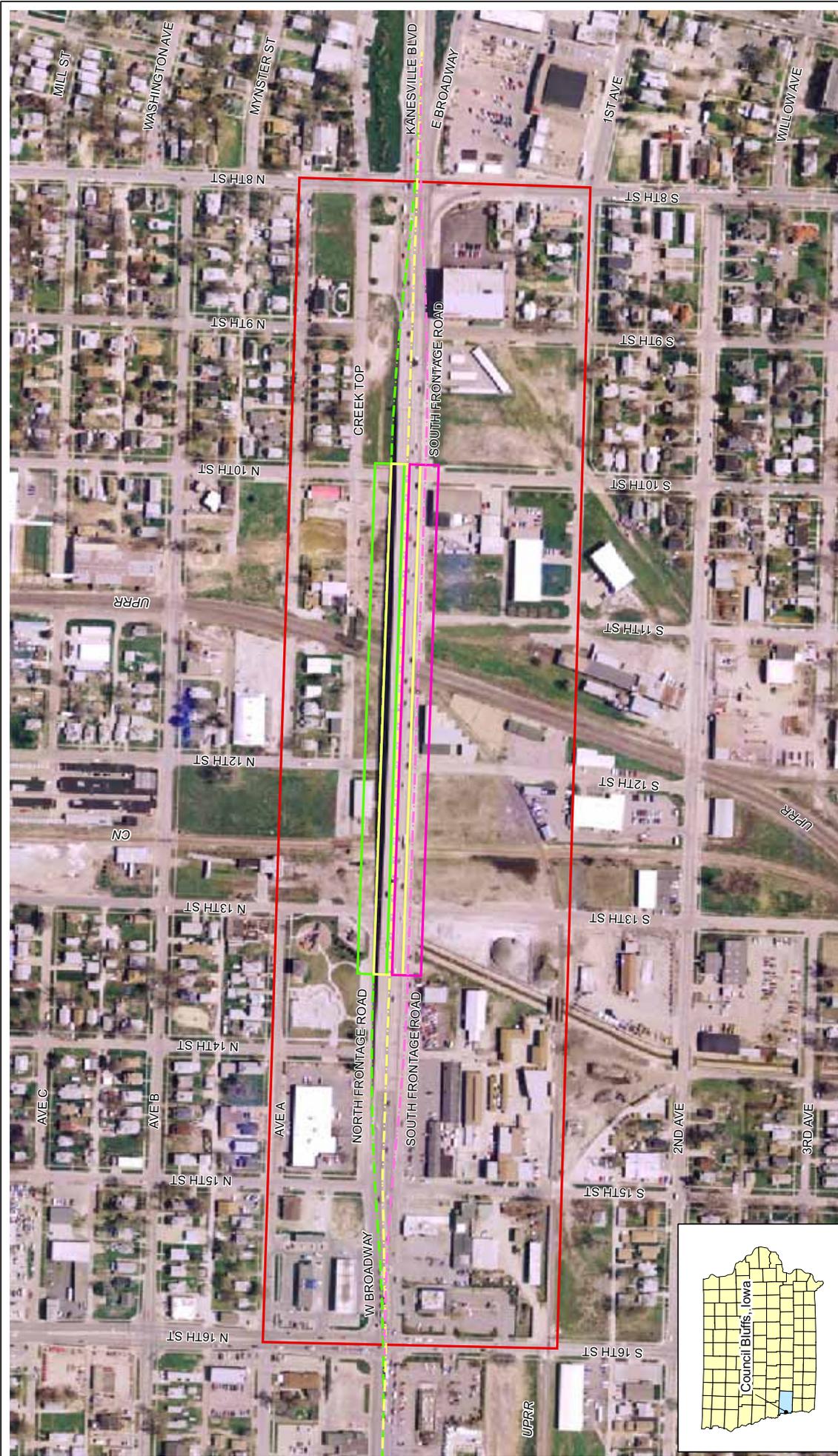


**Broadway Viaduct Cross-Section**

Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment

Date: December 2005

Figure: 4-1

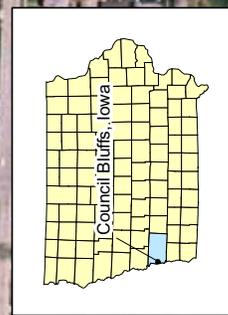
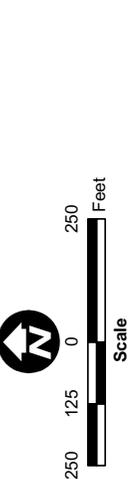


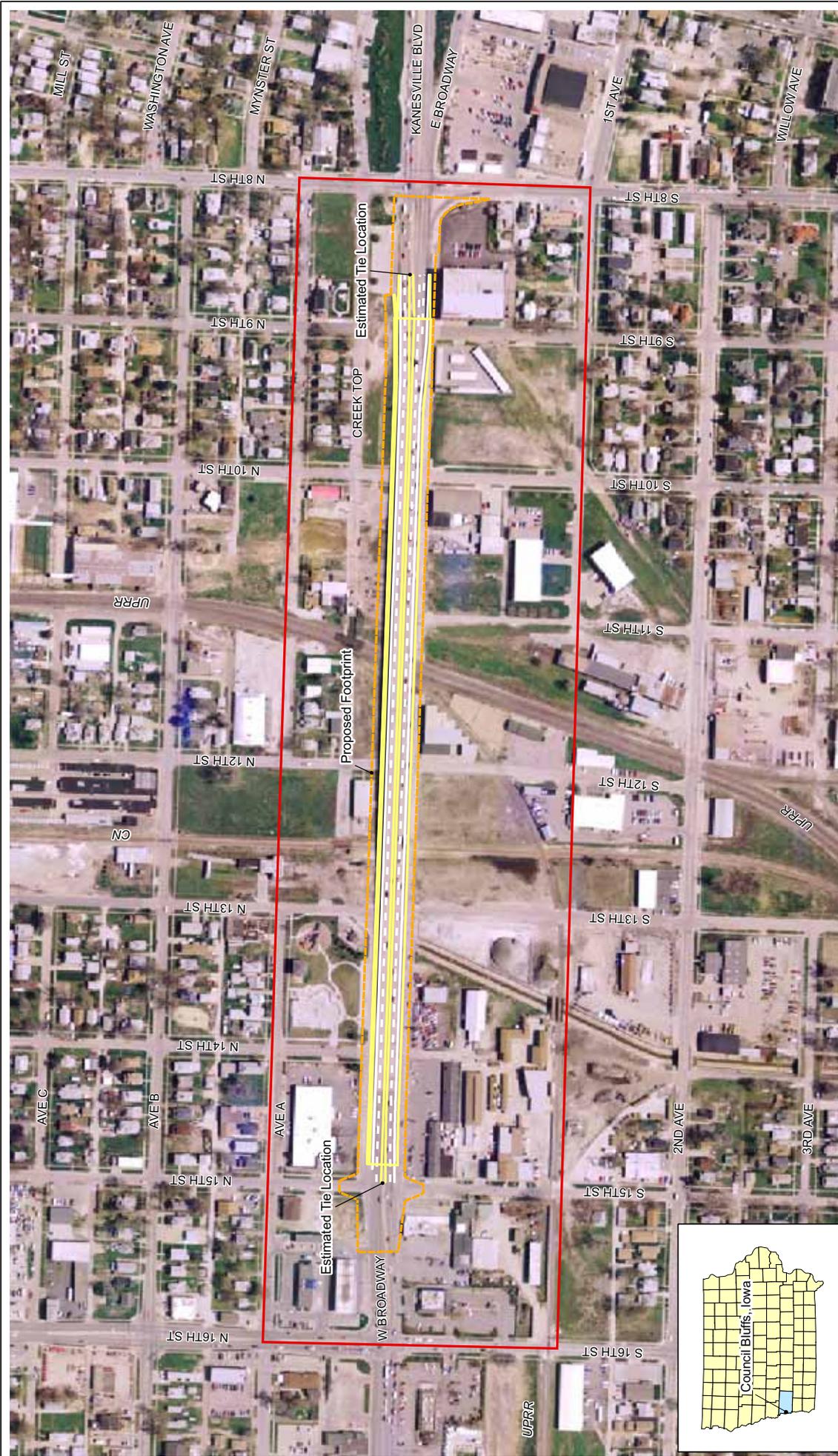
DATE Dec 2005  
 FIGURE 4-2

**Broadway Viaduct Options**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment



- Legend**
- Study Area
  - Off Alignment Alternative North Shift
  - On Alignment Alternative
  - Off Alignment Alternative South Shift



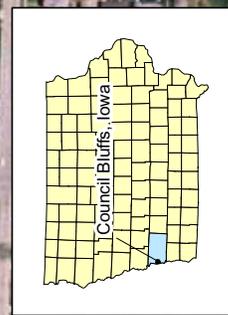
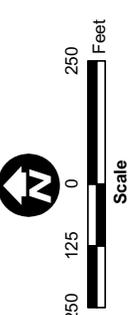


DATE Dec 2005  
 FIGURE 4-3

**Preliminary Horizontal Alignment and Footprint for the Build Alternative**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment



- Legend**
- Study Area
  - On Alignment Build Alternative
  - Proposed Footprint



**SECTION 5**

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**IMPACTS**

## SECTION 5 IMPACTS

This section describes the existing conditions and potential impacts for each resource potentially affected by the Project. Both direct effects<sup>1</sup> and indirect effects<sup>2</sup> are included in the description of impacts. The organization essentially follows FHWA's Guidance for Preparing and Processing Environmental and Section 4(f) Documents (Technical Advisory T 6640.8A) (FHWA, October 30, 1987), with some exceptions to facilitate the flow of information on this Project. The following resources listed in Technical Advisory T 6640.8A do not exist within the Study Area and are not included in this section: wild and scenic rivers, coastal barriers, and coastal zones. A streamlining process was implemented to reduce the description and evaluation of resources that would not be affected by the Project. These resources are addressed in Section 5.21, Streamlined Resource Summary, and the checklist used for the process is reproduced on the back of the front cover and in Appendix A.

Each section includes an analysis of the impacts of the two alternatives carried forward for detailed study: the No-Build Alternative and the Build Alternative. Under the Build Alternative, both the staged and unstaged construction scenarios were considered for impacts. However, the impacts would essentially be the same for most resources. As noted in Section 4.4.2, Build Alternative, one of the key differences between the construction scenarios is the amount of time required to complete construction activities. A separate section for discussion of impacts under the two construction scenarios was used only when there was a discernable difference between the scenarios. In addition, when warranted, each resource was evaluated for measures to avoid, minimize, or mitigate adverse impacts, and a section was added as applicable.

As described in Section 2.2, Other Projects Near the Study Area, projects within the MAPA 2025 LRTP (MAPA et al., September 2000) could occur, and were assumed to occur, regardless of this Project. Impacts of the MAPA 2025 LRTP projects and other reasonably foreseeable projects are considered in Section 5.20, Cumulative Impacts.

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<sup>1</sup> Direct effects are those that “are caused by the action and occur at the same time and place” (40 CFR 1508.8).

<sup>2</sup> Indirect effects are those that “are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable” (40 CFR 1508.8). Indirect impacts “may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems...” (40 CFR 1508.8).

## 5.1 Land Use

Evaluating the impacts that transportation projects have on land use involves determining the project's direct and indirect effects on existing land uses as well as consistency with City of Council Bluffs development and land use planning.

Direct effects on existing land uses occur through acquisition of new ROW for roadway construction. A specific discussion on ROW and acquisition impacts is provided in Section 5.7, Right-of-Way. The affected area within the Project ROW was determined by identifying land uses through aerial photograph review and windshield survey and comparing results to local land use plans. Indirect effects were evaluated by studying access restrictions and their impact in causing out-of-distance travel. Changes in land use as a result of future development were considered, and the alternatives were also reviewed for consistency with the City's future land use plans.

### 5.1.1 Existing Conditions

The topography of the Study Area is representative of the low relief landscape characteristic of the Missouri River valley floor. Land use in the Study Area is a mix of industrial, commercial, residential, and park/open space, as shown in a 2004 aerial photograph (see Figure 5-1). Industrial and commercial uses are the predominant land uses in the Study Area. Based on the parcel and land use data for the Study Area, there are approximately 31 acres of industrial land use, 20 acres of commercial land use, 6 acres of residential land use (2 acres of multi-family and 4 acres of single-family), and 3 acres of park/open space. As of August 2005, the City owned approximately 7.5 acres of undeveloped industrial and commercial land adjacent to the Broadway Viaduct (Pottawattamie County Parcel Database, October 2004; City of Council Bluffs, August 12, 2005).

The western portion of the Study Area, from 16<sup>th</sup> to 14<sup>th</sup> Streets, is predominantly commercial both north and south of the Broadway Viaduct. Businesses in this area include fast food/dining, convenience stores, and retail stores. From 14<sup>th</sup> to 12<sup>th</sup> Streets, the land use is a mix of industrial and commercial properties. Table 5-1 lists local businesses, and Figure 5-2 shows their locations. This area also includes railroad tracks and several vacant lots. The Broadway Skate Park and a limited number of residences are also located on the north side of the viaduct in this area. From 12<sup>th</sup> to 8<sup>th</sup> Streets north of the viaduct, the area consists of a few industrial uses (between 12<sup>th</sup> and 10<sup>th</sup> Streets) and residences north of Creek Top Street. The Jeffrey W. Waters Memorial Park is also located north of the viaduct in this area. South of the viaduct in this location is a mix of industrial and commercial uses. A residential area is also located south of Broadway between 8<sup>th</sup> and 9<sup>th</sup> Streets, directly south of Kelly's Carpet and Furniture.

**Table 5-1  
2005 Businesses on Broadway in the Study Area**

South Side of Broadway	North Side of Broadway
Burger King	Bucky's Amoco Station
Hill Valley Plaza (formerly Duncan's on Broadway [restaurant])	Vino's Lounge (formerly Ginger's Rock Inn)
Paulson Construction and Equipment	Aquila (formerly People's Natural Gas)
Red Wheel Fundraising	Everest Metals
Krueger Construction and Contracting	American Roofing
Golden Plaza West	Learning Journey Daycare
All City Glass	Broadway Auto Body
Cohoe Business Center	Mohm's Place
Russ's Auto Upholstery	Catherine's Catering
Bob's Towing and Garage	
Building owned by John Hauschild Trust	
Railway Inn	
Jerry's Prop and Marine	
Media Printing	
WMC Distributing	
Viaduct Storage	
Kelly's Carpet and Furniture	
Max I Walker Cleaners and Laundry	

Source: HDR, July 15, 2005b.

West Broadway has been the subject of several land use studies. The West Broadway Corridor Redevelopment Plan (Iowa West Foundation, January 2001) included the Broadway Viaduct and the surrounding area. This plan included recommendations for improving the economic vitality and aesthetic appeal of the corridor. Subsequent to the West Broadway Corridor Redevelopment Plan, the City authored the Mid City Corridor Urban Renewal Plan, which was adopted by the Council Bluffs City Council in May 2004 (City of Council Bluffs, May 2004). The Mid City project area is 36 blocks, encompassed by Avenue G on the north, 5<sup>th</sup> Avenue on the south, Indian Creek and 13<sup>th</sup> Street on the west, and 10<sup>th</sup> Street on the east; the central portion of the Mid City project area is in the Study Area for this Project. The purpose of the Mid City Corridor Urban Renewal Plan is to address the deteriorated condition and conflicting land uses of the Mid City area. The West Broadway Corridor Redevelopment Plan and the Mid City Corridor Urban Renewal Plan both recommend rehabilitation of the area, with an emphasis on open space and recreational-type land uses.

**5.1.2 No-Build Alternative**

The No-Build Alternative would maintain the existing roadway network along West Broadway and would not affect the overall land use within the Study Area. However, the West Broadway Corridor Redevelopment Plan and the Mid City Corridor Urban Renewal Plan both indicate that the existing Broadway Viaduct would be replaced. Consequently, the No-Build Alternative is inconsistent with future City plans.

### 5.1.3 Build Alternative

A new viaduct structure would provide the same traffic capacity as the existing viaduct as well as the same access to the surrounding roadway network and local businesses. As a result, no direct or indirect impacts on existing land uses are expected with the Project under either the staged or unstaged construction scenario. In addition, a new viaduct would not displace any residential or commercial properties or affect the City's plan to acquire and consolidate parcels. Construction of a new viaduct structure would not be inconsistent with either the West Broadway Corridor Redevelopment Plan or the Mid City Corridor Urban Renewal Plan. The Mid City Corridor Urban Renewal Plan also includes the creation of green space around Indian Creek and the redevelopment of vacant land adjacent to Broadway.

### 5.1.4 Joint Development

Joint development would allow the proposed roadway ROW to be a shared, multifunction facility that not only serves as a basic transportation route but also provides alternative uses of public land. The purpose of joint development is to restore or enhance the affected area's social, economic, environmental, and visual values. Examples of alternative uses include parking facilities over or under roadways for access to bicycle trails and denotation of historic or landmark features along trails that are unique to the area.

There are potential joint development options in the Study Area. The City was given the option to fund an expansion of the Broadway Viaduct's proposed 6-foot-wide sidewalk to an 8-foot-wide trail. Other discussions with the City have focused on the potential for reducing the length of the viaduct by closing some streets and realigning some rail lines. The City has proposed a trail system following the Indian Creek channel through the Study Area. Another joint development option could be to include a historic marker along the trail providing information on Indian Creek and the original Broadway Viaduct. Final joint development options would be evaluated in consultation with Iowa DOT, the City, and various Iowa state and local authorities, such as the Iowa West Foundation, during latter phases of Project development. Funding for joint development projects would not necessarily be part of this Project. Joint development would result in beneficial impacts from maximizing the functionality of land use along a transportation corridor.

### 5.1.5 Avoidance, Minimization, and Mitigation

As detailed design plans are developed for the preferred alternative, Iowa DOT will continue to coordinate with the City. Both of the construction scenarios are consistent with future land use plans in the Study Area; therefore, no additional mitigation with respect to land use would be required.

## 5.2 Churches and Schools

Churches and schools are uses in the Study Area that can contribute to a community's sense of identity. Therefore, the impacts of the Project on neighborhoods in the Study Area and on

community cohesion<sup>3</sup> relate, in part, to impacts on churches and schools. Churches and schools were identified through database searches and reconnaissance of the Study Area.

### 5.2.1 Existing Conditions

No churches or schools are located in the Study Area. The only church that was in the Study Area, a former Scandinavian church located at 829 Avenue A, has been converted to a business. The Tabernacle Baptist Church is located immediately north of the Study Area at 1400 Avenue A. An additional 13 churches are within 0.5 mile of the Study Area. While no schools are located in the Study Area, four schools were identified within a 0.75-mile radius of the Study Area. Kanessville Alternative High School and Roosevelt Elementary School are located to the north of the Study Area, and Washington Elementary School and Bloomer Elementary School are located to the east of the Study Area (see Figure 5-1).

The existing viaduct is not a barrier to community cohesion because there is north-south street access beneath the viaduct, which allows interaction of neighborhoods and access to businesses and other uses north and south of the viaduct. Also, students from north and south of the viaduct attend the same junior high schools (Woodrow Wilson or Kirn) and high schools (Thomas Jefferson or Abraham Lincoln), which maintains interaction between students and parents residing on either side of the viaduct.

### 5.2.2 No-Build Alternative

The No-Build Alternative would not result in any impacts on area churches or schools and would not affect community cohesion for the reason described above.

### 5.2.3 Build Alternative

As noted, there are no churches or schools in the Study Area. For those churches or schools near the Study Area, no permanent changes in access or parking facilities would occur as a result of the Project. During construction, with either the staged or unstaged scenario, there may be temporary changes in the way churches or schools are accessed. The changes in access would be limited to the construction period and are expected to be minor. Traffic would also increase near certain schools and churches during construction due to detours around Broadway; the affect would vary based on the selected detour route or routes. See Section 5.8, Construction, Traffic Detours, for more information.

## 5.3 Railroads and Utilities

Railroads and utilities are within the Study Area and may be affected by the Project. These effects were evaluated with respect to railroads and major utilities crossed by or located

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<sup>3</sup> Community cohesion is the sense and strength of neighborhood identity felt by residents for the people and facilities of the surrounding community.

within the ROW for the Build Alternative. The railroads and utilities were identified through data review and discussions with City officials.

### 5.3.1 Existing Conditions

CN and Union Pacific Railroad (UPRR) have rail lines within the Study Area beneath the Broadway Viaduct (see Figure 5-1). The CN line is between 12<sup>th</sup> and 13<sup>th</sup> Streets and is perpendicular to the viaduct, and the UPRR line consists of dual tracks trending north-northwest just west of 11<sup>th</sup> Street. The railroad corridor in the general area of the Project handles approximately 30 trains per day; that number is projected to increase to 50 trains per day within the next 15 years. Coal traffic accounts for more than half of the mainline movements in this area, and coal trains typically require a gate-down time of almost 6 minutes (FHWA and Iowa DOT, January 2003).

There are several utilities within the Study Area. Utility providers include the City of Council Bluffs Water Works, Aquila (natural gas), MidAmerican Energy, Qwest, and Cox Communications. No utilities are attached to the existing Broadway Viaduct, but several are located beneath the viaduct, as follows:

- City of Council Bluffs Water Works – Existing water lines are currently located along most east-west and north-south roadways within the Study Area. A 20-inch line currently runs along Broadway from west of 16<sup>th</sup> Street to approximately 12<sup>th</sup> Street. At 12<sup>th</sup> Street, this line splits, with a 20-inch line to the south and a 12-inch line to the north. Currently, 20-, 16-, and 8-inch water lines are located in the vicinity of the 8<sup>th</sup> Street intersection with Broadway, while 8- and 6-inch lines are located at the 16<sup>th</sup> Street intersection with Broadway. In addition, 6-inch lines run north-south beneath the existing viaduct along 14<sup>th</sup> and 12<sup>th</sup> Streets.
- Aquila – Existing natural gas lines operated by Aquila (formerly known as People’s Natural Gas) are located throughout the Study Area. Of particular note is a 2-inch line that runs parallel to the existing viaduct on the south side of the south frontage road. Connections from this line to north-south lines are located at most north-south roadways south of the existing viaduct. No lines are located north of the viaduct until Avenue A. No north-south lines are located beneath the viaduct.
- MidAmerican Energy – MidAmerican Energy has an extensive network of utilities within the Study Area along most east-west and north-south roadways. A set of high-voltage overhead power lines maintained by MidAmerican crosses the viaduct in the vicinity of 13<sup>th</sup> Street, while a second MidAmerican line crosses the existing viaduct at 14<sup>th</sup> Street.
- Qwest – Qwest has utility lines in the Study Area, with crossings of Broadway occurring at 15<sup>th</sup> and 8<sup>th</sup> Streets and beneath the viaduct at 12<sup>th</sup> Street.
- Cox Communications – Cox Communications maintains a line that runs north-south along 10<sup>th</sup> Street through the Study Area.

A stormwater pumping station is located on the north side of the viaduct and immediately west of Indian Creek, in the southeast corner of the block that includes the Broadway Skate Park.

### **5.3.2 No-Build Alternative**

The No-Build Alternative would not result in any impacts on utilities within the Study Area.

### **5.3.3 Build Alternative**

Although the pier locations of the new viaduct may be slightly different than those of the existing viaduct depending on the structure type selected, neither the CN nor the UPRR rail line that extends beneath the viaduct would be impacted. The vertical clearance of the new viaduct in the vicinity of both the CN and UPRR rail lines would be increased. Only short-term disruptions in rail operations during demolition of the existing viaduct and installation of beams for the new viaduct are expected. Depending on the detour route or routes selected, the at-grade rail crossings for both the CN and UPRR rail lines at Avenue B and 2<sup>nd</sup> Avenue may need to be improved to accommodate the increased traffic expected during construction.

The Build Alternative may require the relocation or replacement of overhead and buried utilities (water, gas, electric, and telephone) that would be in conflict with the viaduct reconstruction depending on the placement of piers and expanded widths of the east and west abutments. The abutments are planned to remain in the same location but would be wider because of the increased width of the viaduct cross section. Reconstructing the viaduct in its existing location minimizes the likelihood of conflicts with utilities. No subsurface work aside from that necessary for the placement of piers and the west abutment would be required. No relocation of the stormwater pumping station on 13<sup>th</sup> Street or the high-voltage overhead power lines that cross the viaduct in the vicinity of 13<sup>th</sup> and 14<sup>th</sup> Streets is anticipated. The extent of utility relocations would be determined based on more detailed design during a future engineering phase.

The Project's potential impacts on utilities would be the same regardless of whether the staged or unstaged construction scenario were implemented.

### **5.3.4 Avoidance, Minimization, and Mitigation**

As detailed design plans are developed for the preferred alternative, construction activities would be coordinated with the public utilities to avoid potential conflicts and minimize planned interruptions of service. When service interruptions are unavoidable, an effort would be made to limit their duration. Iowa DOT would closely coordinate with CN and UPRR prior to and during bridge demolition and construction to avoid or minimize impacts on railroad operations. No ROW would be required from the railroad companies.

## 5.4 Public Services

Public services include hospitals, emergency response providers, fire departments, law enforcement facilities, City maintenance facilities, and public transit service. Transportation projects such as the Broadway Viaduct reconstruction have the potential to impact public services and access to the community by those public services during and after construction. Key public services within or traversing the Study Area were identified through review of databases and discussions with City officials.

### 5.4.1 Existing Conditions

There are no hospitals or emergency service providers in the Study Area. Mercy Hospital and Jennie Edmundson Hospital are approximately 1.25 miles east of the Study Area. The nearest fire department is located at 200 South 4<sup>th</sup> Street, approximately 0.40 mile southeast of the Study Area. The fire department also offers ambulance services. The Council Bluffs Police Department is located at 227 South 6<sup>th</sup> Street, approximately 0.25 mile southeast of the Study Area. Currently, emergency response vehicles use the Broadway Viaduct, although traffic congestion during peak hours often forces the use of adjacent side roads, including Avenue G. The viaduct is a critical route because emergency responders depend on the structure to provide efficient, grade-separated access to areas east and west of the north-south railroad corridor in the City.

The City has a fleet maintenance facility located at 12<sup>th</sup> Street and 2<sup>nd</sup> Avenue, street/sewer facilities at 1301 2<sup>nd</sup> Avenue, and a crushed rock storage facility immediately south of the viaduct and west of Indian Creek.

Public transit service in the Study Area is provided by Metro Area Transit (MAT), which uses a conventional local-route bus system. The primary types of MAT bus routes are local and express. MAT Routes 41, 42, and 45 run along Broadway, providing connections between downtown Council Bluffs and downtown Omaha.

### 5.4.2 No-Build Alternative

The only public service facilities in the Study Area are the City maintenance facilities. The No-Build Alternative would not affect access to and from the City maintenance facilities or the routes public service providers use in passing through the Study Area. However, the anticipated need for more frequent repairs on the Broadway Viaduct with the No-Build Alternative could affect the efficiency in which public service providers (and all users) cross the viaduct.

### 5.4.3 Build Alternative

The Build Alternative would not affect public service facilities, including access to and from City maintenance facilities. Access along 13<sup>th</sup> Street south of the viaduct and along 2<sup>nd</sup> Avenue would continue during and subsequent to construction. However, construction would affect the routes used by public service providers that normally use the Broadway Viaduct. See Section 5.8, Construction, for more information.

**Staged Construction – Maintain Two Lanes of Traffic**

The potential congestion associated with the staged construction scenario may require emergency providers to use Avenue G. MAT indicated that bus routes would be altered slightly and shifted to local roads to account for the closure of two lanes of the viaduct during construction but that service would be maintained to all areas that are currently serviced by MAT (MAT, June 2005).

**Unstaged Construction – Close All Lanes of Traffic**

With the unstaged construction scenario, it is anticipated that emergency response vehicles would use Avenue G to avoid delays at train crossings. MAT indicated that bus routes would be altered slightly and shifted to local roads to account for the closure of the viaduct during construction but that service would be maintained to all areas that are currently serviced by MAT (MAT, June 2005).

**5.4.4 Avoidance, Minimization, and Mitigation**

Iowa DOT would coordinate closely with the City and emergency service providers to establish detour routes during construction in the Study Area that would minimize the Project's impact on emergency response times. Coordination would also be conducted with the City and MAT to note the timeframe of the construction and to determine temporary route changes.

**5.5 Environmental Justice**

For all Federally funded programs and activities, the issue of equality must be addressed in compliance with Title VI of the Civil Rights Act of 1964 (Title VI) (42 United States Code [USC] 2000d et seq.) and Executive Order (EO) 12898, Federal Actions To Address Environmental Justice in Minority and Low-Income Populations (59 FR 7629). 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. For the purpose of this analysis, census tracts, block groups, and blocks were analyzed to determine the population and racial characteristics in the Study Area. Because the U.S. Census Bureau must protect the privacy of individuals, only a limited amount of socioeconomic information is available at the block level due to confidentiality.

### 5.5.1 Existing Conditions

According to Census 2000, the population of Council Bluffs was 58,268. Also according to Census 2000, nearly 95 percent of persons in the City were White/Caucasian, with slightly over 92 percent White/Caucasian in the block groups in the Study Area. Minority groups made up only 4 percent of the total population of the City, and 6 percent of the Study Area. Black/African Americans made up the largest number of minorities, approximately 1 percent of the total population in the City and nearly 1.5 percent of the Study Area, followed by American Indian/Alaska Native and Asian (U.S. Census Bureau, 2000).

The 2005 Poverty Guidelines set by the Department of Health and Human Services (HHS) indicate that the poverty level for a household of four is below \$19,350 in the 48 contiguous United States (HHS, 2005). According to Census 2000, the median income in the City was \$36,221 (U.S. Census Bureau, 2000). The average median income for the block groups in the Study Area was \$30,850.

### 5.5.2 No-Build Alternative

The No-Build Alternative would not have a disproportionate adverse effect on low-income or minority populations protected by EO 12898.

### 5.5.3 Build Alternative

Because the Broadway Viaduct improvements would not displace any residences or businesses or have any other notable impact on the Project's built environment, the Project would not disproportionately adversely affect any populations protected by EO 12898.

## 5.6 Transportation

Transportation resources are defined as the infrastructure and equipment used for the movement of people and materials. The transportation resources in the Study Area include the viaduct and road network, traffic signals, and lighting. If the number of vehicles per hour on a road segment is compared to the capacity of the road, the quality of traffic flow can be assessed.

Level of service (LOS) measures the quality of transportation routes based on the operational conditions of the road. The LOS describes the conditions of the route in terms of speed, travel time, traffic interruptions, maneuverability, safety, convenience, and operating costs. The LOS has six designations, A through F, which are provided under particular traffic conditions, with A being the best and F being the worst. LOS A through C are generally considered acceptable, LOS D and E are congested, while LOS F is unacceptable.

Traffic is also addressed in the transportation section of this EA. Current traffic routes and alternative routes or detours are addressed in this study. The roadway system was reviewed, and discussions between Iowa DOT and the City identified potential detour routes. Because traffic affects commerce, an economic evaluation of local businesses was performed.

Analysis of the different routes was conducted to evaluate traffic impacts on businesses during construction of the Project.

Accident rates exceeding statewide averages are considered in transportation system design of new projects to meet safety criteria. The rates were analyzed and the LOS evaluated to consider impacts on the transportation system in the Study Area.

### 5.6.1 Existing Conditions

Broadway serves as a portion of U.S. 6 and is an important east-west arterial through the City. Broadway is currently the only east-west arterial through eastern Council Bluffs that is grade-separated from the two major north-south rail corridors, CN and UPRR, in the City. However, by the time the Project is scheduled to occur, the Avenue G Viaduct, which will provide a second east-west roadway that is grade-separated from the two major north-south rail corridors, will be constructed and open to traffic. The primary alternative roadways for Broadway are Avenue G, 9<sup>th</sup> Avenue, 16<sup>th</sup> Avenue, and the interstate system, which includes Interstate 80 (I-80) and Interstate 29 (I-29) (CH2M HILL, June 16, 2005) (see Section 1, Figure 1-1). Frontage roads are present in some locations adjacent to the viaduct (see Section 4.2.4, Build Options, for the particular locations of the roads).

Iowa DOT performed ground counts of traffic in and around the Study Area during 2004 and determined a traffic volume on the Broadway Viaduct of 34,600 vehicles per day (vpd), which was estimated to correlate to LOS C (CH2M HILL, June 16, 2005). Figures 5-3 and 5-4 show the traffic volume estimates for 2005 and 2030, respectively.

There are many businesses located near Broadway in the Study Area (see Table 5-1 and Figure 5-2). These businesses were evaluated for potential access and traffic impacts (HDR, July 15, 2005b).

The Broadway Viaduct corridor was also analyzed to identify any safety issues present within the current transportation system (CH2M HILL, September 29, 2004). The analysis found that the corridor was below the 5-year statewide average crash rates and therefore did not show major safety concerns. The one exception is the westbound left-hand turn movement onto 8<sup>th</sup> Street at the intersection of Broadway and 8<sup>th</sup> Street. This intersection has a crash rate of 1.4 crashes per million entering vehicles (MEV) compared to the 5-year statewide average of 1.0 crash per MEV.

### 5.6.2 No-Build Alternative

Under the No-Build Alternative, periodic repairs of the viaduct would be required. The Broadway Viaduct would continue to deteriorate, and the Project purpose and need would not be met. The transportation pattern along Broadway would be affected during rehabilitation and maintenance. Traffic flows and LOS would usually remain the same as predicted in the traffic forecasts, no detours would be required, and no businesses would be affected. The rate of future accidents would likely be similar to existing levels. Table 5-1 identified current businesses in the Study Area. However, when extended maintenance of the viaduct would be needed, detours may be required and businesses could be adversely affected.

### 5.6.3 Build Alternative

Future traffic along Broadway and over the Broadway Viaduct was modeled to estimate the LOS to ensure that four travel lanes would be sufficient to meet travel demand. Traffic modeling results for forecast years 2010, 2020, and 2030 were 29,300, 30,700, and 32,000 vpd, respectively (CH2M HILL, June 16, 2005). The numbers are lower than current ground counts because of model assumptions concerning the Council Bluffs Interstate System and its future expanded capacity. Based on the modeling results, LOS C was determined for the Broadway Viaduct with four travel lanes.

Replacement of the existing viaduct with a new viaduct would not degrade the existing safety conditions affecting vehicles traveling through the Study Area. The addition of shoulders, a wider sidewalk, and sturdier barriers between vehicles and the edge of the viaduct could improve vehicle, pedestrian, and bicycle safety.

The north and south frontage roads adjacent to the viaduct would decrease in width due to the wider viaduct but could still function as one-way roads. Although on-street parking would no longer be available along the frontage roads, parking could still occur along adjacent north-south streets.

Under the Build Alternative, many vehicles would seek alternative roadways during construction in an attempt to minimize travel times. The number of vehicles seeking alternative roadways varies based on the construction scenario (staged or unstaged) selected. Designated detour routes would be necessary to adequately control traffic. Section 5.8.3 discusses traffic issues caused by construction and the consequent detours.

In addition to detours to accommodate traffic volumes, it would be necessary to maintain access to the businesses listed in Table 5-1 during construction. The majority of the businesses in the Study Area are destination businesses, which are specialized businesses with regular customers who are intent on stopping there, and should be minimally affected by construction. However, three of the businesses are traffic-dependent, providing a type of service or product offered at one or more alternative sites, so accessibility is especially important for customers to stop at these particular businesses rather than going elsewhere. The three traffic-dependent businesses in the Study Area are Burger King, Hill Valley Plaza (formerly Duncan's on Broadway), and Bucky's Amoco Station (HDR, July 15, 2005b). Another traffic-dependent business nearby is McDonalds on the southwest corner of 16<sup>th</sup> Street and Broadway. These four businesses would likely be affected more than the others by the construction of the Broadway Viaduct because they may lose customers who normally drive on Broadway but take the detours instead. In addition, customers may be less likely to stop at these businesses if access is difficult due to construction.

The following sections describe the differences in traffic patterns based on the construction scenario.

**Staged Construction – Maintain Two Lanes of Traffic**

Under the staged construction scenario, two lanes of traffic would be maintained throughout the construction process. Based on the findings of a technical memorandum entitled *Broadway Viaduct Traffic Forecast Methodology and Analysis Results*, it is anticipated that approximately 45 percent of traffic (13,200 vehicles, measured in average daily traffic [ADT]) currently using Broadway would be diverted during construction (CH2M HILL, June 16, 2005). Figure 5-5 shows the estimated vehicles per day that would be diverted from Broadway. Other east-west roadways within the project area will likely accept the majority of this diverted traffic including Avenue G, Avenue B, 2<sup>nd</sup> Avenue, 9<sup>th</sup> Avenue, and 16<sup>th</sup> Avenue. The traffic congestion on these alternate routes would increase during the construction of the Broadway Viaduct. A designated detour route or routes would assist in reducing traffic impacts; see Section 5.8, Construction, Traffic Detours, for additional information.

While the businesses listed in Table 5-1 would likely be affected by reduced access resulting from the closure of two lanes of Broadway, these effects would be minimal, especially for destination businesses. The traffic-dependent businesses would have reduced traffic volumes passing by their businesses on a daily basis. Traffic along Broadway would be reduced by approximately 45 percent, but levels of traffic on 16<sup>th</sup> Street would increase to handle about 1/3 of the traffic diverted off Broadway. Because three of the traffic-dependent businesses are also adjacent to 16<sup>th</sup> Street (the exception being Hill Valley Plaza between 15<sup>th</sup> and 16<sup>th</sup> Street on Broadway) which will remain open and fully functioning, access will not be restricted by the Project. Access would also be available to Hill Valley Plaza off Broadway. Visitation to these destination businesses would be less than normal, but greater than if traffic were restricted. The maintenance of two lanes would ease access to the destination businesses as well because two lanes of Broadway would be available for use to provide continued access for right-in and right-out turns. After construction, sales at all of these businesses are expected to return to pre-construction levels.

**Unstaged Construction – Close All Lanes of Traffic**

Under the unstaged construction scenario, all four lanes of traffic would be closed throughout the construction process, and all of the traffic (29,300 ADT) that currently uses the Broadway Viaduct would have to be detoured. Figure 5-6 shows the estimated vehicles per day that would be diverted from Broadway. An estimated 22 percent of the Broadway traffic diverted will use roadways outside the study area, primarily the interstate system. The remaining traffic has been estimated to divert to other east-west roadways within the project area including Avenue G, Avenue B, 2<sup>nd</sup> Avenue, 9<sup>th</sup> Avenue, and 16<sup>th</sup> Avenue. Traffic congestion on these alternate routes would increase during the construction of the Broadway Viaduct. A designated detour route or routes would assist in reducing traffic impacts; see Section 5.8, Construction, Traffic Detours, for additional information.

The destination businesses would not be adversely affected by construction because access would be maintained on frontage roads, but there would be periods when a particular segment of a frontage road may be closed for adjacent construction. If the south frontage road is

closed at any time during construction, three destination businesses—Golden West Plaza (which includes New Horizon’s Auto Center), Russ’s Auto Upholstery, and Bob’s Towing and Garage—could be adversely affected because the only public access to these businesses is via the south frontage road. However, there is possible access along 15<sup>th</sup> Street through the Golden Plaza West parking lot.

The traffic-dependent businesses would have limited access along Broadway between 16<sup>th</sup> and 15<sup>th</sup> Streets, as well as alternate access points along 16<sup>th</sup> and 15<sup>th</sup> Streets. Approximately 60 percent of the traffic diverted from Broadway is projected to lead to an increase of traffic on 16<sup>th</sup> Street. Access would still be maintained off 16<sup>th</sup> Street and along Broadway up to 15<sup>th</sup> Street. Although adverse impacts could occur, the timeframe would be approximately seven months less than the staged construction scenario (assuming comparable design, materials, and techniques). After construction, sales at all of these businesses are expected to return to pre-construction levels. Compared to the staged construction scenario, a greater reduction in business is projected but during a shorter timeframe (assuming comparable design, construction techniques, and materials); this impact would likely be considered as more adverse than for staged construction.

#### **5.6.4 Avoidance, Minimization, and Mitigation**

Modification of the transportation system cannot be avoided, but impacts can be minimized through the establishment of one or more dedicated detour routes. Iowa DOT would coordinate with the City regarding designated detours, and they would work together to address City concerns for student access to Roosevelt Elementary School at the corner of 16<sup>th</sup> Street and Avenue E. Iowa DOT would also coordinate with businesses near the construction and detour areas to assist in minimizing access disruptions. Evaluation of signal timing to facilitate designated detour routes would be performed. The need for ITS to provide timing information of train traffic would be evaluated, as would the need for additional railroad gates at road/rail at-grade crossings.

### **5.7 Right-of-Way**

To assess the potential impacts associated with the alternatives, ROW acquisition and property relocations were evaluated based on existing ROW, private and public property boundaries, and future ROW needs.

#### **5.7.1 Existing Conditions**

The Study Area is in an urban setting with flat land. ROW for urban environments varies depending on the space needed for construction of roadways and sidewalks as well as design elements such as grading and drainage. Frequently, ROW ends at the edge of the sidewalk, and easements are acquired for grading and drainage areas. Multiple property owners exist in the Study Area, including private individuals, companies, and the City. The Broadway Viaduct resides on Iowa DOT ROW, and the frontage roads immediately north and south of the viaduct are also owned primarily by Iowa DOT. There are two properties (Kelly’s Carpet

and Furniture at 825 West Broadway and property owned by Hauschild at 102 South 12<sup>th</sup> Street) where parcel data indicate that they own a portion of the frontage road.

### **5.7.2 No-Build Alternative**

The No-Build Alternative would not require acquisition of any ROW along the Broadway Viaduct.

### **5.7.3 Build Alternative**

The Project would be constructed primarily within existing ROW. Publicly owned frontage roads are adjacent to the viaduct, with two small segments of the frontage roads privately owned. The viaduct would be above the privately owned frontage road at 102 South 12<sup>th</sup> Street, so no ROW would be needed. However, the privately owned frontage road north of Kelly's Carpet and Furniture is adjacent to a mechanically stabilized earth (MSE) wall. This MSE wall would be replaced with another wall that would extend southward approximately 6 feet more than the existing wall in the area of northwest corner of the building. Consequently, this portion of the frontage road could become unusable, and less than 0.1 acre may need to be acquired. Temporary easements would need to be acquired for construction activities within the footprint adjacent to the structure (see Figure 4-3).

The existing piers were installed on acquired ROW, with the exception of railroad land. Permanent easements were acquired for the construction and maintenance of the piers. The same process would occur for the proposed viaduct if pier placement on railroad property is required.

#### ***Staged Construction – Maintain Two Lanes of Traffic***

Although there would be no difference in ROW needed for the Project under the staged or unstaged construction scenario, more area under temporary easements would need to be acquired for staged construction. Access to areas where two lanes would be maintained during staged construction would require more maneuvering room than would be needed for unstaged construction; consequently, a larger area would be covered under a temporary easement.

#### ***Unstaged Construction – Close All Lanes of Traffic***

A smaller area of temporary easements would be needed for unstaged construction due to the capability of working primarily in an area where the existing viaduct has been removed.

### **5.7.4 Avoidance, Minimization, and Mitigation**

During concept design, many constraints were considered, including property boundaries and locations of structures, in avoidance and minimization of impacts. Consequently, the preferred alignment was selected based on avoiding the acquisition of any residence or business structures. ROW acquisition with Federal funding could commence after completion of the environmental review process (that is, after the decision document is

signed). ROW acquisition would be based on fair market value of the portion of property acquired.

## **5.8 Construction**

The impacts of construction would be temporary as they would be limited to the period of construction. The major impacts during construction would be related to economic factors, pedestrians and bicyclists, recreation, air quality, noise, contamination, traffic detours, and Section 4(f) properties. Because detailed discussion of construction impacts is not feasible until final design has been completed for the Project, this section discusses general impacts of construction.

### **5.8.1 Existing Conditions**

In the Study Area, construction is ongoing at Hill Valley Plaza (1507 West Broadway), where the former Duncan's on Broadway restaurant was demolished during spring 2005. Other than a new Broadway Viaduct, future construction in the Study Area would primarily be attributed to activities proposed under the Mid City Corridor Urban Renewal Plan. The Study Area and surrounding environment experiences temporary impacts such as traffic delays, traffic noise, and air emissions.

### **5.8.2 No-Build Alternative**

The periodic repairs to the viaduct that would be required with the No-Build Alternative could affect residences and businesses adjacent to the structure. Because it is not possible to anticipate the nature and timing of the repairs that might be necessary, it is not possible to speculate on the specific impacts on Study Area residents. It is reasonable to assume, however, that the repair impacts of the No-Build Alternative would be incrementally less extensive and shorter in duration than the reconstruction impacts of the Build Alternative.

The maintenance activities would temporarily generate traffic to and from the work site as well as generate increased air emissions and noise. It is possible that a detour for eastbound, westbound, or both directions of traffic would be necessary to perform the maintenance activities. These maintenance activities would occur sporadically and would impact the Study Area and surrounding environment.

### **5.8.3 Build Alternative**

Removal of the existing bridge structure may be accomplished in one of two ways, depending on the use of staged or unstaged construction. The first scenario, staged construction, involves supporting the existing structure by building additional bracing and then removing one piece of the bridge at a time. The second scenario, unstaged construction, involves dropping the existing structure in place, either using low-level charges or cutting off pieces. The viaduct could then be dismantled and removed. The method for removal of the existing bridge would be determined during final design. The presence and abatement of paint that contains heavy metals; the close proximity to Kelly's Carpet and Furniture, the Broadway

Skate Park, and the Indian Creek channel; and the associated costs for each method of removal would be among the considerations evaluated when selecting the method of removal. A demolition plan would be prepared in conjunction with the final design plans.

### ***Economic Factors***

The impact of roadway construction on local businesses is dependent on individual customer's decisions to shop at businesses near construction sites. These decisions are made based on the availability of substitute products and locations; the convenience of access during construction; the duration of the project; environmental factors such as visibility, dust, and noise; and a range of other factors that can vary by customer. Section 5.6, Transportation, addresses impacts on businesses from construction.

The regional economic benefits from construction funding would likely be greater under the staged construction scenario because construction would take longer and consequently be more expensive than for the unstaged construction scenario.

### ***Pedestrians and Bicyclists***

Construction would impact the route taken by pedestrians and bicyclists on the walkway across the viaduct. The staged construction scenario would allow two lanes of vehicular traffic, but pedestrian and bicycle traffic along Broadway would be prohibited for approximately 15 to 21 months because the north section (including the walkway) would be demolished before the south section. The unstaged construction scenario would involve demolition of the structure, which would prohibit vehicle, pedestrian, and bicycle traffic along Broadway until the construction is completed (approximately 8 to 14 months). Under both scenarios, roadways that facilitate pedestrian and bicycle traffic beneath the viaduct (10<sup>th</sup>, 12<sup>th</sup>, and 13<sup>th</sup> Streets) would also undergo closure at their intersection with Broadway during demolition and construction activities.

### ***Recreation***

The Broadway Skate Park and three sand volleyball courts at the Railway Inn, a bar and grill located within the Study Area at 115 South 12<sup>th</sup> Street, are the only recreational facilities within the Study Area. Activities at the Broadway Skate Park and Railway Inn could continue through either construction scenario, but use of the facilities might diminish due to increased noise and dust when construction is occurring nearby. Access to parking to the south of the Broadway Skate Park would likely be temporarily restricted during construction.

### ***Air Quality***

Short-term air quality impacts during construction would occur for the following reasons:

- Construction vehicles and related equipment would increase exhaust emissions.
- Disruption of ground cover and demolition activities would generate dust.

Emissions from construction vehicles and equipment and activities generating dust during either construction scenario are not expected to change the attainment air quality status of the area.

### **Noise**

During the construction phase of the Project, noise from on-site construction equipment and construction activities, including the driving or drilling of piles, would add to the noise environment in the immediate Study Area. The driving and operation of construction equipment (including driving or drilling of piles) would also generate ground vibrations. The vibrations are not projected to be of a sufficient magnitude to affect normal activities of occupants or visitors in the Study Area.

Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours and potentially outside of normal working hours if an accelerated schedule is preferred. Noise would also be generated during the construction phase by increased truck traffic on area roadways associated with transport of heavy materials and equipment. The noise increase and vibrations from construction activities would be of short duration.

Equipment operating at the Project site would conform to contractual specifications requiring the contractor to comply with all local noise control rules, regulations, and ordinances. Section 5.8.4, Avoidance, Minimization, and Mitigation, provides some measures to minimize noise impacts.

### **Contamination**

Due to the presence of heavy metals in the paint used on the viaduct in the past, paint removal during demolition would have to be handled properly to minimize the potential for contamination of soils. Recycling painted steel is possible, but some paint would need to be removed prior to any cutting with a torch due to paint vaporization concerns. The paint should be sampled to confirm heavy metal concentrations, particularly hexavalent chromium. A detailed discussion of contamination issues within the Study Area is presented in Section 5.18, Regulated Materials.

### **Traffic Detours**

With either staged or unstaged construction, traffic would be diverted from Broadway to the adjacent street network. In an attempt to control the diversion, the need for detour routes is likely, even with the staged construction scenario.

It is assumed that the Avenue G Viaduct would be constructed and open to traffic prior to any construction activities on the Broadway Viaduct. The Avenue G Viaduct would be the only other grade-separated railroad crossing in this portion of the City. Because of this, Avenue G was identified as a viable detour route and a route that would be desirable to traffic diverting from Broadway because any possible delays encountered by train traffic would be averted. It was assumed that traffic diverting from Broadway would use 16<sup>th</sup> Street, 8<sup>th</sup> Street, and the

6<sup>th</sup> Street/7<sup>th</sup> Street one-way pair to access Avenue G. Figure 5-7 shows the potential Avenue G detour route. This detour route may require improvements to local roadways, including 8<sup>th</sup> Street and the 6<sup>th</sup> Street/7<sup>th</sup> Street one-way pair. On-street parking may be limited, restricted, and/or temporarily removed from these routes. Temporary traffic signals may be required at various local road intersections to maintain an acceptable level of traffic flow. Impacts on residences and businesses along these routes may occur from the added level of congestion, traffic noise, and parking limitations. Daily traffic volumes are estimated to increase to a level of two to ten times the daily volume currently along the detour route under an unstaged construction scenario and by one to seven times under a staged construction scenario.

The main advantage of the Avenue G detour route is that a grade-separated railroad crossing would be used. This would not only provide a safety benefit but would also limit the additional congestion that would occur while the railroad tracks are in use. The main disadvantage of this detour route is its distance from the Broadway Viaduct. Traffic traveling along Broadway would add approximately 1.5 miles to each round trip by following the Avenue G detour route. While the detour would result in induced out-of-distance travel time, it would not be affected by potential delays at at-grade railroad crossings. Due to the additional travel time, depending on the origin or destination of a particular trip, some diverted traffic may choose to use a different route. These routes may include Avenue B and 2<sup>nd</sup> Avenue, located near the Broadway Viaduct, as well as 9<sup>th</sup> Avenue and 16<sup>th</sup> Avenue, located further south of the viaduct. Figure 1-1 shows the location of 9<sup>th</sup> Avenue and 16<sup>th</sup> Avenue south of the Study Area. This may result in added traffic congestion along these routes as well as along 16<sup>th</sup> and 8<sup>th</sup> Streets, particularly when the railroad tracks are in use, and would increase the geographical area impacted by diverted traffic. In addition to possible local road improvements mentioned earlier, local road improvements may also be needed on 9<sup>th</sup> and 16<sup>th</sup> Avenues.

The Avenue G detour route passes through areas that are primarily residential in the eastern portion, industrial in the middle portion, and mixed commercial and residential in the western portion. In particular, the detour route would bring more traffic past the Salvation Army Church, Roosevelt Elementary School, Kanesville Alternative High School, and Children's Square USA (a non-profit, non-denominational organization that provides an extensive range of care, education, and treatment services for children). The increased traffic would increase noise levels along the detour route during construction of the viaduct.

The second possible detour route identified to date is a one-way pair alternative that would use Avenue B and 2<sup>nd</sup> Avenue; this detour route is also shown in Figure 5-7. Under this scenario, Avenue B and 2<sup>nd</sup> Avenue would be temporarily converted to one-way streets, with traffic flow in the westbound and eastbound directions, respectively. Traffic traveling along Broadway would add approximately 0.5 mile to each round trip by following this detour route. Under this detour route, more traffic would occur near Bloomer Elementary School and Tabernacle Baptist church than under current conditions (see Figure 5-7). To improve intersection operations, 16<sup>th</sup> and 8<sup>th</sup> Streets would also be temporarily converted into one-way streets between Avenue B and 2<sup>nd</sup> Avenue, with traffic flow in the southbound and northbound directions, respectively. Daily traffic volumes have been estimated to increase by

1.5 to 7 times the existing daily traffic along this detour route (as well as along Avenue G) under an unstaged construction scenario and by one to six times under a staged construction scenario. Avenue G is included to account for possible diversion from the one-way pair detour route to the Avenue G viaduct while trains are blocking Avenue B and 2<sup>nd</sup> Avenue. As with the Avenue G detour, some diversion to other roadways including 9<sup>th</sup> Avenue and 16<sup>th</sup> Avenue will likely happen.

The main advantage of this second route is that the signed detour route would be in the vicinity of the Broadway Viaduct, which would minimize the out-of-distance travel incurred by a driver. Because of this, it is possible that a larger percentage of diverted Broadway traffic would use the marked detour, centralizing the impacts resulting from traffic diversion. The main disadvantage of this option is the number of at-grade railroad crossings that are encountered. These railroad crossings can have operational as well as safety consequences. The time of travel for vehicles delayed at train crossing locations along this detour route would likely be greater than for vehicles traveling along the Avenue G detour. ITS strategies may be implemented to minimize these consequences by alerting drivers that the railroad tracks are in use and directing them to Avenue G. Because of these additional delays and any implementation of ITS strategies, Avenue G may still receive a significant volume of the diverted traffic, particularly during peak periods. This detour option may require local road improvements to Avenue B and 2<sup>nd</sup> Avenue and improvements at the 8<sup>th</sup> and 16<sup>th</sup> Street intersections. The use of temporary traffic signals at key local road intersections would also be likely. Impacts on residences and businesses along the temporary one-way pairs may occur due to the added congestion (causing delays for ingress and egress) and traffic noise along these roadways as well as the additional travel time caused by the removal of two-way traffic operations. Conversion of Avenue B and 2<sup>nd</sup> Avenue to one-way pairs between 8<sup>th</sup> and 16<sup>th</sup> Streets may also lead to safety concerns for drivers used to traveling east or west.

#### **Section 4(f) Properties**

Although potential use of Section 4(f) properties is addressed under Section 5.13, construction issues are summarized here. Either construction scenario would affect the existing viaduct, a historic property determined eligible for listing on the NRHP. However, construction under either scenario is not projected to cause a direct or constructive use of any other Section 4(f) property. Although there may be a temporary nuisance of dust and noise during demolition and construction activities near the Broadway Skate Park, this would not cause a substantial impairment of the Broadway Skate Park that would result in a constructive use.

#### **Staged Construction – Maintain Two Lanes of Traffic**

Staged construction for the Broadway Viaduct would include two lanes of traffic, one lane in each direction. When converting from four lanes to two lanes, it is reasonably assumed that 40 to 50 percent of the traffic would divert from Broadway. Based on travel models, it was assumed that Avenue B, 2<sup>nd</sup> Avenue, and 5<sup>th</sup> Avenue each would receive 1,000 ADT of the diverted traffic, with 16<sup>th</sup> Street receiving 500 ADT. The remaining 9,700 ADT was split between Avenue G (60 percent) and 9<sup>th</sup> Avenue (40 percent), with Avenue G receiving

5,800 ADT and 9<sup>th</sup> Avenue receiving 3,900 ADT. These ADT values are in addition to existing projected traffic and are predicted from modeling without a designated detour. The construction impacts discussed above would occur over an approximate 15- to 21-month timeline for this scenario.

### **Unstaged Construction – Close All Lanes of Traffic**

A full closure of the viaduct would displace 29,300 vehicles (forecasted for 2010) per day from Broadway onto the adjacent street network described above. The construction impacts discussed above would occur over an approximate 8- to 14-month timeline for this scenario.

#### **5.8.4 Avoidance, Minimization, and Mitigation**

A primary impact resulting from construction would be excess dust that is generated by wind and traffic. The amount of excess dust generated would vary depending on factors such as the extent of construction activity, silt content, soil moisture, and wind speed. Excess dust and particulates would be a nuisance to nearby areas; however, this exposure would only be limited to the construction period. To minimize impacts of dust blowing from the construction area, water can be applied to the surface. Watering the entire surface twice a day could reduce dust emissions by up to 50 percent.

Although construction noise impacts would be temporary, the following standard measures are recommended to minimize such impacts:

- Whenever possible, limit operation of heavy equipment and other noisy procedures to non-sleeping hours.
- Install and maintain effective mufflers on equipment.
- Locate equipment and vehicle staging areas as far from residential areas as possible.
- Limit unnecessary idling of equipment.

Vibrations could be minimized by selecting a foundation solution that does not require pile driving.

Designation of a detour route or routes would help minimize adverse traffic impacts. ITS strategies (such as motion sensors with feedback reportable to electronic signs) may also be implemented to alert and direct traffic to the Avenue G Viaduct when the railroad tracks are in use. There are five at-grade intersections with railroad tracks (three UPRR and two CN crossings) along the Avenue B and 2<sup>nd</sup> Avenue one-way pair detour route. Due to projected increases in traffic, a crossing signal with gates may be needed at the two at-grade, CN railroad crossings currently lacking a gate along Avenue B and 2<sup>nd</sup> Avenue between 8<sup>th</sup> and 16<sup>th</sup> Streets. The crossing sign on Avenue B includes a flashing light, but the crossing on 2<sup>nd</sup> Avenue is only denoted by a crossing sign. An at-grade UPRR crossing along 16<sup>th</sup> Street south of Broadway has a sign and lights but lacks a gate and may also need to be upgraded. The UPRR at-grade intersections at 2<sup>nd</sup> Avenue and Avenue B have gates to accommodate two-way traffic; if these roads are converted to one-way traffic during construction, these gates may also need to be modified. The need for gates and other improvements associated

with railroad crossings would be determined through interaction between the railroad companies, the City, and Iowa DOT.

A crossing light at N. 16<sup>th</sup> Street between Avenues E and F serves to facilitate pedestrian access to and egress from Roosevelt Elementary School. Given a projected increase in traffic along N. 16<sup>th</sup> Street, a traffic signal at Avenue E or F may also be warranted to help manage pedestrian and vehicular traffic near the school.

## 5.9 Pedestrians and Bicyclists

The Project alternatives were investigated in relation to pedestrian and bicycle traffic as well as existing and planned trails.

### 5.9.1 Existing Conditions

An existing 6-foot-wide sidewalk with a 5-foot-wide walking surface<sup>4</sup> is located on the north side of the Broadway Viaduct between 16<sup>th</sup> and 8<sup>th</sup> Streets. A barrier is currently in place between the sidewalk and westbound traffic. The barrier consists of a 12-inch rail located on top of an 8-inch curb section and extends the length of the viaduct. The only access points for the sidewalk are located at 16<sup>th</sup> and 8<sup>th</sup> Streets. The sidewalk extends westward from the 8<sup>th</sup> Street and Broadway intersection, passes through the southern perimeter of Jeffrey W. Waters Memorial Park, and extends onto the viaduct at 9<sup>th</sup> Street. There are no designated bicycle trails in the Study Area, but pedestrians and bicyclists use sidewalks, including the one on the Broadway Viaduct, throughout the Study Area. A sidewalk is located along both sides of 10<sup>th</sup> Street and extends beneath and to the north and south of the viaduct. No other sidewalks are located below the viaduct.

The following resources were reviewed to identify planned trails in the Study Area:

- Metro Area Trails: Paths of Discovery (Omaha Parks and Recreation Department, 2005)
- Council Bluffs Recreation Trails Master Plan (Council Bluffs Department of Parks, Recreation, and Public Property, 2004)
- Mid City Corridor Urban Renewal Plan (City of Council Bluffs, May 2004)

Additionally, the Council Bluffs Department of Parks and Recreation was contacted to determine the latest status on trails (City of Council Bluffs, March 16 and March 23, 2005). Figure 5-8 shows a composite of future trails planned that pass near or through the Study Area. The trail that will be constructed first is along Avenue G; final design is ongoing and construction will start in 2006. Other trails are dependent on redevelopment initiatives involving Indian Creek and railroad ROW.

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<sup>4</sup> Although the sidewalk dimensions include 6 feet of pavement, the steel barriers to the north and south of the sidewalk limit the effective width to 5 feet.

### 5.9.2 No-Build Alternative

The No-Build Alternative would not affect the sidewalk on the Broadway Viaduct or proposals to extend pedestrian and bicycle facilities through the Study Area. Pedestrians and bicyclists could use the Avenue G Trail. If City redevelopment occurs and results in trail construction, the Indian Creek Trail could extend beneath the Broadway Viaduct, and other trails could also be developed.

### 5.9.3 Build Alternative

Under the Build Alternative, the existing 5-foot-wide sidewalk that is currently located on the north side of the Broadway Viaduct would be replaced with a 6-foot-wide sidewalk on the north side of the new viaduct, separated from the westbound traffic with a 10-inch-wide barrier. The 6-foot width of the sidewalk on the viaduct is exclusive of barriers and would be sufficient to allow pedestrians and bicyclists to share the path during two-way traffic. The sidewalk on both sides of 10<sup>th</sup> Street (north and south of the viaduct) is assumed to remain in place to allow pedestrian access beneath the viaduct. The Build Alternative would not preclude other proposed trails through the Study Area. The Indian Creek Trail, which is planned to traverse beneath the viaduct, would not likely be constructed until after the new viaduct is built. The City is acquiring property with the long-term plans for redevelopment but would plan the redevelopment in conjunction with the new viaduct project.

As noted in Section 5.8, Construction, under either the staged or unstaged scenario, pedestrian and bicycle access along Broadway between 8<sup>th</sup> and 15<sup>th</sup> Streets would be discontinued during construction. 10<sup>th</sup> Street (and its associated sidewalks), 12<sup>th</sup> Street, and 13<sup>th</sup> Street would be closed to pedestrian and bicycle traffic at their intersection with Broadway during demolition and construction activities.

## 5.10 Archaeological Sites

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to determine whether their undertakings will have adverse impacts on historic properties, including archaeological sites, that are listed on or are eligible for listing on the NRHP. A review of known sites and an investigation of new sites were conducted to determine whether Project construction within the ROW would impact any sites. For this Project, the Area of Potential Effect (APE) for archaeological sites included the Study Area.

### 5.10.1 Existing Conditions

A Phase I archaeological investigation and report was completed for the Study Area in summer and fall 2004 (Tallgrass Historians, L.C., January 2005b). No existing sites eligible for listing on the NRHP have been identified within the Study Area. Four new archaeological sites were identified during the Phase I investigation, including the impacted remains of a commercial site (13PW171), residential dwellings (13PW170), and two sites associated with the railroad (13PW169 and 13PW172). The location of the sites is not shown to minimize the potential of unauthorized recovery of archaeological artifacts. The Phase I report indicated that the four sites lacked sufficient integrity to be eligible for listing on the NRHP.

The Iowa State Historic Preservation Office (Iowa SHPO) concurred with that finding on April 22, 2005 (Iowa DOT, March 14, 2005). No further archaeological investigation for this Project is recommended.

### **5.10.2 No-Build Alternative**

Because no archaeological sites eligible for listing on the NRHP were identified, the No-Build Alternative would not result in any impacts on archaeological resources in the Study Area.

### **5.10.3 Build Alternative**

Because no archaeological sites eligible for listing on the NRHP were identified within the Study Area, neither construction scenario under the Build Alternative would result in any impacts on archaeological resources.

## **5.11 Historic Sites or Districts**

Section 106 of the NHPA requires Federal agencies to determine whether their undertakings will have adverse impacts on historic properties, including historic sites or districts, that are listed on, or are eligible for listing on, the NRHP. A review of known sites and an investigation of new sites were conducted to determine if Project construction would impact any sites. The proximity of a site to the Project ROW and a site's eligibility for listing on the NRHP were considered for the determination of impacts. For this Project, the APE for historic sites and districts included the Study Area.

### **5.11.1 Existing Conditions**

An intensive level historic and architectural survey and report was completed for the general Project area (which included the Study Area and some adjacent properties) in fall 2004 to determine the presence of properties eligible for listing on the NRHP (Tallgrass Historians, L.C., January 2005a). A total of 59 architectural properties were identified within the general Project area. Of those, 47 were determined to be ineligible for listing on the NRHP due to the lack of sufficient integrity and/or significance or due to the modern age of the structures. The remaining 12 properties within the Study Area were determined to be eligible for listing on the NRHP. A concurrence letter on the findings of the survey was submitted to Iowa SHPO by Iowa DOT on March 4, 2005, and is reproduced in Appendix B. Based on no response provided within 30 days, Iowa SHPO is assumed to concur with the eligibility findings of the report. The eligible properties as identified in the report (several are currently being used for a different purpose) are listed below and shown in Figure 5-9.

- Our Savior's Scandinavian Evangelical Lutheran Church, 829 Avenue A (78-00472)
- Omaha & Council Bluffs Street Railway Substation, 1311 Avenue A (78-01758)
- Groneweg & Schoentgen Co. Wholesale Grocers Warehouse, 825 West Broadway (78-01755)

- Double-House, 16 South 8<sup>th</sup> Street (78-01754)
- House, 816 1<sup>st</sup> Avenue (78-00240)
- Chicago & North Western Railroad Freight Depot, 1104 2<sup>nd</sup> Avenue (78-01746)
- Indian Creek Channel District, Council Lane to 16<sup>th</sup> Avenue (78-01739), including bridges at the 1<sup>st</sup> Avenue and Creek Top Street crossing of this channel (78-01740, 78-01742, 78-01742, and 78-01771)
- Broadway Viaduct, West Broadway between 8<sup>th</sup> and 15<sup>th</sup> Streets (78-01737)

### 5.11.2 No-Build Alternative

The No-Build Alternative would not affect any of the historic properties eligible for listing on the NRHP listed above.

### 5.11.3 Build Alternative

Of the 12 properties determined to be eligible for listing on the NRHP, only the Broadway Viaduct (78-01737) would be directly impacted under the Build Alternative. A no effect determination is applicable to five properties (78-00472, 78-01758, 78-01754, 78-00240, and 78-01746) located a minimum of 200 feet away from the Project ROW. The Groneweg & Schoentgen Co. Wholesale Grocers Warehouse (78-01755) is adjacent to the existing viaduct, and a portion of the Indian Creek Channel District (78-01739) passes beneath the viaduct; these properties were analyzed for potential effects of the Project. Four bridges contributing to the Indian Creek Channel District are outside the Project ROW (the two closest bridges are approximately 70 feet away) and would not be directly impacted by the Build Alternative, but were evaluated as part of the Indian Creek Channel District.

Removal of the Broadway Viaduct would result in the destruction of this historic property under either of the construction scenarios. No reasonable alternative was identified that could result in the maintenance of the existing bridge beyond its useful lifespan for vehicular traffic. Therefore, the Build Alternative would have an adverse effect on the NRHP-eligible Broadway Viaduct.

The frontage road adjacent to the north side of the Groneweg & Schoentgen Co. Wholesale Grocers Warehouse (78-01755), which is eligible for listing on the NRHP, would likely be closed due to the wider cross section of the new viaduct. No direct impacts on the building are expected to occur under either construction scenario, which results in a finding of no effect for this property.

With either the staged or unstaged construction scenario, Iowa DOT would ensure that the design of pier locations would not affect the integrity of the underground conduit. Iowa DOT would also take measures to prevent rubble from the demolition of the viaduct from entering Indian Creek and affect the appearance of the Indian Creek Channel District. The four bridges identified as contributing to the Indian Creek Channel District's eligibility are outside the Project ROW and currently exist in close proximity to a viaduct. Consequently,

accounting for the pier locations relative to the underground conduit and the bridges located outside the Project ROW, there would be no effect on the Indian Creek Channel District.

#### **5.11.4 Avoidance, Minimization, and Mitigation**

Based on the constraints of establishing viable alternative alignments in the Study Area, historic structures were considered for avoidance. One initial alternative considered would have required demolition of Groneweg & Schoentgen Co. Wholesale Grocers Warehouse (78-01755). Therefore, that alignment option to the south of the existing alignment was eliminated. A preliminary vibration study was conducted to determine potential impacts of driving piles near existing structures and to identify a buffer area for monitoring if pile driving operations were conducted (CH2M HILL, October 18, 2005). Given the close proximity of several historic structures to the viaduct, especially the Indian Creek channel structure and the former warehouse, drilled shafts could be used instead of piles in that area to reduce the effects of vibration on the building.

As noted previously, replacement of the Broadway Viaduct could not avoid demolition of the existing viaduct. A finding of adverse effect (dated December 15, 2005) for impacts to the existing viaduct was filed with the Advisory Council noting that the SHPO, Iowa DOT, and FHWA would enter into consultation to resolve the adverse effect in accordance with 36 CFR 800.6. A draft Memorandum of Agreement (MOA) to mitigate the impacts to the historic property has been developed through the consultation process. The draft MOA notes a conditional no adverse effect for other historic properties within 260 feet of the project area, and requires design and construction of the Project to minimize the risk of construction vibration damage to historic properties other than the existing viaduct. Any changes in the draft MOA will be addressed in the FONSI. Because significant architectural structures are also Section 4(f) resources, mitigation measures for impacts on the viaduct are also addressed in Section 5.13.4, below.

### **5.12 Recreation**

Recreational resources and public-use land were identified through a reconnaissance survey of the Study Area. These resources were evaluated with respect to their distance from the existing viaduct and ROW for the future viaduct to determine potential effects.

#### **5.12.1 Existing Conditions**

Due to the industrial and commercial land uses in the Study Area, there are minimal recreational facilities and activities. Recreational facilities are at schools near the Study Area, but as noted in Section 5.2, Churches and Schools, no schools are within the Study Area. Recreational resources and public-use land within the Study Area include the City-owned Broadway Skate Park on 13<sup>th</sup> Street north of the viaduct, the Jeffrey W. Waters Memorial Park on 8<sup>th</sup> Street north of the viaduct, and volleyball courts at the Railway Inn, a private bar on 12<sup>th</sup> Street south of the viaduct. Figure 5-8 illustrates the location of these resources that could be potentially affected by the Project. Other parks and recreational

resources are shown in the figure but are not discussed because the Project would not affect them.

Pedestrians and bicyclists sometimes pass through the Study Area on the sidewalk on the Broadway Viaduct or to access the Broadway Skate Park. The Broadway Skate Park is located just north of Broadway, between 13<sup>th</sup> and 14<sup>th</sup> Streets, at 1300 West Broadway. The 1.2-acre skate park, which is part of the City's park system, has skate ramps and other features for skating, playground equipment including a climbing wall, and a parking area with 16 spaces along its south side.

The Jeffrey W. Waters Memorial Park is also within the Study Area, located on Iowa DOT ROW. The 0.5-acre property is on the northwest corner of 8<sup>th</sup> Street and the Broadway Viaduct and consists of a grassy open area with benches. This property is not included in the City's or State of Iowa's inventory of parks. There are no recreational facilities at this location.

The Railway Inn is a bar and grill located within the Study Area at 115 South 12<sup>th</sup> Street and has three sand volleyball courts that are used for private leagues.

### **5.12.2 No-Build Alternative**

The No-Build Alternative would not result in impacts on recreational facilities within or near the Study Area. Access and parking facilities would remain unchanged. The City's Mid City Corridor Urban Renewal Plan shows preservation of the Broadway Skate Park. Although the Railway Inn and its associated volleyball courts are not shown, the plan illustrates recreational land and public-use land in the area surrounding Broadway Viaduct.

### **5.12.3 Build Alternative**

The Project would not require acquisition of any recreational land under either construction scenario. However, it is anticipated that minor impacts may occur regarding access to the parking area located on the south side of the Broadway Skate Park; a detailed discussion concerning the potential impacts and proposed mitigation measures for impacts is included in Section 5.13, Section 4(f) Properties. No impacts would occur on the Jeffrey W. Waters Memorial Park or the Railway Inn volleyball courts under either construction scenario. The width of the sidewalk extending across the new Broadway Viaduct would be tapered down before entering the Jeffrey W. Waters Memorial Park to avoid any impacts in that area.

## **5.13 Section 4(f) Properties**

Section 4(f) of the U.S. Department of Transportation Act of 1966 states in part that "It is the policy of the United States Government that special effort be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites" (49 USC 303).

In accordance with this national policy, Section 4(f) properties must be closely evaluated before they can be used in a transportation project. In order for FHWA to approve the use of Section 4(f) properties, there must be no feasible and prudent<sup>5</sup> alternative to the use, and all possible planning must have been included to minimize harm resulting from such use. The following are Section 4(f) properties:

- Public recreation areas
- Parks
- Wildlife and/or waterfowl refuges
- Significant historic properties, excluding those properties only eligible for listing in the NRHP under criterion D (eligible only for the potential to yield information); these resources are also considered under Section 106 of the NHPA

The methodology used to identify and review Section 4(f) properties involved the review of an archaeological report (Tallgrass Historians, L.C., January 2005b) and a historic/architectural property report (Tallgrass Historians, L.C., January 2005a) prepared in support of the Project. In addition, the Council Bluffs Department of Parks, Recreation, and Public Property was consulted to identify parks and recreation resources in or near the Study Area. There are no wildlife or waterfowl refuges within the Study Area.

Once eligible properties were identified, they were reviewed to determine if a use of the property would occur. There are two types of uses of properties protected by Section 4(f), a direct use or a constructive use. A direct use occurs when a property protected by Section 4(f) is permanently incorporated into a transportation facility or is temporarily occupied, causing effects that are considered adverse. Removal of a historic property is considered a direct use. A constructive use occurs when a project does not incorporate (or remove) a property protected by Section 4(f) but is so close to the property that the activities, features, or attributes of the property are substantially impaired. The following five criteria are used to evaluate potential constructive uses:

- Noise
- Aesthetic characteristics of the property
- Property access
- Vibration
- Ecological intrusion, such as substantially diminished wildlife habitat

The FHWA Iowa Division Office has a five-step Section 4(f) Evaluation and Decision Process that is being used for this study. The five steps in order are: 1) identification of Section 4(f) properties; 2) determination of whether a use of a Section 4(f) property occurs;

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<sup>5</sup> In order for an alternative to be considered “feasible and prudent,” it must not create any “truly unique” problems (defined as costs or community disruption of extraordinary magnitude or an accumulation of truly unique or unusual factors).

3) evaluation of whether a Section 4(f) property can be avoided; 4) determination of whether a use can be minimized; and 5) identification of the type of document required.

### 5.13.1 Existing Conditions

No archaeological sites were identified within the Study Area that were eligible for protection under Section 4(f) (see Section 5.10, Archaeological Sites, for additional information). However, 12 historic/architectural properties were identified as eligible for listing on the NRHP that would qualify as Section 4(f) properties (see Section 5.11, Historic Sites or Districts, for additional information). Table 5-2 lists those historic/architectural properties within the Study Area that were determined eligible for protection under Section 4(f).

The Broadway Skate Park, a 1.2-acre park located at 1300 West Broadway that includes a playground and a bowl-shaped, poured concrete element for use by Rollerblades and skateboards, is the only recreational property in the Study Area eligible for protection under Section 4(f) (HDR, July 15, 2005a).

All of the historic/architectural sites eligible for protection under Section 4(f) are shown in Figure 5-9, and the Broadway Skate Park is shown in Figure 5-10.

### 5.13.2 No-Build Alternative

Under the No-Build Alternative, no action would take place on the Project, and there would be no use of Section 4(f) properties, including the existing Broadway Viaduct. Continued deterioration of the viaduct would not affect its status as an NRHP-eligible property because its eligibility criteria are not based on its design and condition.

### 5.13.3 Build Alternative

None of the historic/architectural properties eligible for protection under Section 4(f) would be subject to a constructive use, and the Broadway Viaduct is the only property that would incur a Section 4(f) direct use (HDR, August 17, 2005). To bring the roadway up to current design standards in Iowa, the Broadway Viaduct must be removed for the construction of a new viaduct along the current alignment. A Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges has been prepared to address the use of the structure (see Appendix C). As noted in Sections 5.11.3 and 5.11.4, demolition of the Broadway Viaduct would be an adverse affect under Section 106 and would require mitigation as noted in Section 5.13.4, below. Consultation with SHPO would address mitigation to compensate for Section 106 impacts. FHWA will determine if these measures are sufficient for purposes of minimization under Section 4(f).

Potential uses of the Broadway Skate Park were also evaluated. No direct uses would occur because no park land would be acquired for Project ROW or traversed by construction equipment. Access to existing parking (16 diagonal spaces on the south end of the park) would be affected during construction, but parking is currently allowed along other streets adjacent to the park and is sufficient for current and projected vehicle use (City of Council Bluffs, July 14, 2005).

**Table 5-2  
Historic/Architectural Properties Protected by Section 4(f)**

Site No.	Description	NRHP Criteria <sup>1</sup>
78-00472	829 Avenue A; 1877 Late Gothic Revival Church	A and possibly C
78-01758	1311 Avenue A; 1920 Prairie School	A and C
78-01755	825 West Broadway; 1901 Romanesque Commercial	A, C, and possibly B
78-01754	16 South 8 <sup>th</sup> Street; 1910s Craftsman double house	C and possibly A
78-00240	816 1 <sup>st</sup> Avenue; c.1880 Italianate Dwelling	C and possibly A and B
78-01746	1104 2 <sup>nd</sup> Avenue; c.1920 Brick-front railroad building	A and possibly C
<i>78-01739 (78-01740, 78-01741, 78-01742, &amp; 78-01771)<sup>2</sup></i>	<i>Indian Creek Channel District: Council Lane to 16<sup>th</sup> Avenue including the railroad bridges at the 1<sup>st</sup> Avenue and Creek Top Street crossings</i>	<i>A, C, and possibly B</i>
78-01737	West Broadway between 8 <sup>th</sup> and 15 <sup>th</sup> Streets; Broadway Viaduct	A and possibly B

Notes:

<sup>1</sup> NRHP Eligibility Criteria are as follows:

A = Site has an association with significant events.

B = Site has an association with significant people.

C = Site has distinctive design or construction (distinctive construction characteristics, work of a master, a distinguishable entity).

D = Site has potential to provide significant information.

<sup>2</sup> Sites comprising a potentially eligible historic district are italicized.

Decrease in width of the north frontage road adjacent to the viaduct could require modification of the parking configuration, but the same number of parking spaces would be available post-construction. No constructive use would occur because the park could continue to be used during construction activities and access to parking would be restored at the completion of construction activities (HDR, August 17, 2005).

***Staged Construction – Maintain Two Lanes of Traffic***

Under the staged construction scenario, half of the viaduct would remain intact for a portion of the construction period in order to maintain two lanes of traffic during construction. All mitigation and minimization actions required for the current viaduct would be completed prior to the demolition of the first two lanes of the viaduct.

***Unstaged Construction – Close All Lanes of Traffic***

Under the unstaged construction scenario, the bridge would be removed in its entirety at the beginning of the construction phase, and no traffic lanes would be left open during construction. All mitigation and minimization actions required for the current viaduct would be completed prior to the demolition of the current viaduct. Unstaged construction would be completed sooner than staged construction (considering comparable designs, construction techniques, and materials) and reduce noise and dust near the Broadway Skate Park. In addition, parking would be less affected under this scenario compared to staged construction because more work could be done within existing ROW after demolition of the existing viaduct.

#### **5.13.4 Avoidance, Minimization, and Mitigation**

As noted in Section 4.3, Alternatives Screening, the screening process for alternatives eliminated a north alignment option (which would have resulted in a direct use of the Broadway Skate Park) and a south alignment option (which would have resulted in a direct use of the Groneweg & Schoentgen Co. Wholesale Grocers Warehouse) that would have affected Section 4(f) properties. The Section 4(f) evaluation process also considered off-alignment options that would avoid use of the Broadway Skate Park and the former Groneweg & Schoentgen Co. Wholesale Grocers Warehouse. No prudent alignment was identified that would avoid all Section 4(f) properties. Although the aforementioned resources were avoided for the Build Alternative, demolition of the existing viaduct was unavoidable because it would no longer serve a transportation function. Given the close proximity of several historic structures to the viaduct, especially the former warehouse, drilled shafts could be used instead of piles in that area to reduce the effects of vibration on the building. Section 5.11.4 indicated an MOA requirement for the design and construction of the new viaduct to minimize the risk of vibration damage to historic structures other than the existing viaduct.

Based on the unavoidable direct use of the existing Broadway Viaduct, the use must be minimized. The Section 106 consultation process involved interaction with Iowa SHPO to identify specified activities to mitigate the impact of the destruction of the bridge. The Section 106 draft MOA (see Appendix D) is the result of the consultation process and describes what measures would be taken to document the viaduct and minimize the impact of the use of the structure. Any changes in the draft MOA will be addressed in the FONSI. FHWA will determine if the mitigation measures in the Section 106 MOA are sufficient to minimize use under Section 4(f). FHWA would specify any additional measures required to minimize the Section 4(f) use.

#### **5.14 Water Resources**

Water resources include rivers, lakes, ponds, and other surface water bodies as well as groundwater. Adequate quantity and quality of surface water and groundwater are both important criteria. Surface water features in the Study Area were determined through the use of aerial photography and topographic mapping. Groundwater in the Study Area was evaluated through background research. Potential impacts on surface water, groundwater, and water quality (for both surface water and groundwater) were evaluated by considering the Project and its proximity to water resources. The Iowa Department of Natural Resources (Iowa DNR) has responsibility for water quality programs and standards in Iowa. Under Section 303(d) of the Clean Water Act, states are required to develop lists of impaired waters that do not meet water quality standards in the state. Data from Iowa DNR and the City were sought to determine the quality of surface water and groundwater in the Study Area. Demolition of the existing viaduct, construction of the new viaduct, and operation of the new viaduct were considered in determining potential impacts.

### 5.14.1 Existing Conditions

Indian Creek, which is the only surface water body in the Study Area, begins 4 miles north of the City, flows intermittently through the City, and empties into the Missouri River. The watershed area is approximately 10,000 acres, of which roughly half are within the City limits. Indian Creek is a culvert and canal system used for stormwater drainage and is not a source of potable water for the City. The Indian Creek channel through the City includes 3 miles of concrete-lined channel and concrete conduit. The concrete channel system was constructed in 1936 as a flood mitigation project. From the south edge of the Study Area to the viaduct, Indian Creek is located in an open concrete-lined channel. North of the viaduct, Indian Creek is located in a culvert under Creek Top Street. Figure 5-11 shows the location of Indian Creek relative to the Study Area.

Indian Creek is not used as a source of potable water, and consequently has not been classified for use or listed on Iowa DNR's 303(d) list of impaired waters. During a Phase II Environmental Site Assessment (ESA) investigation conducted at a property within the Study Area, it was noted that surface water collected from Indian Creek contained a lead concentration that exceeded the National Water Quality Criteria standards (Tetra Tech EM Inc., April 3, 2003). No other water quality information is available for Indian Creek.

Groundwater used for a portion of Council Bluffs' potable water comes from an alluvial aquifer, which extends along the Missouri River; the primary source of potable water is the Missouri River. According to the Iowa DNR, Council Bluffs is located in the Pennsylvanian groundwater province (Iowa DNR, 2005). The Pennsylvanian system observed in Iowa is approximately 298-320 million years old. The water table in the Study Area is located in an unconfined alluvial aquifer above the Pennsylvanian province and is approximately 18 to 20 feet deep. Groundwater is not used in the Study Area and no groundwater quality information was identified.

### 5.14.2 No-Build Alternative

No impacts on Indian Creek and local groundwater would occur under the No-Build Alternative. The No-Build Alternative would involve regular periodic maintenance and is not expected to have an adverse impact on Indian Creek or groundwater. The No-Build Alternative would not affect quality of surface water or groundwater in the Study Area. Periodic maintenance on the viaduct is not expected to have an adverse impact on water quality in the Study Area.

### 5.14.3 Build Alternative

The Build Alternative for the Project would not affect Indian Creek under either construction scenario. No channel relocation would be required as the result of the proposed improvements, nor would the placement of any fill material or bridge piers into the channel be required. With either the staged or unstaged construction scenario, Iowa DOT would take measures to prevent rubble, sediment, and other pollutants from the demolition of the viaduct from entering the creek channel (see Section 5.14.4, below).

Installation of piles for support of pier footings could penetrate the water table and cause some groundwater to be encountered during construction. If groundwater was encountered where the piers would be constructed, it would need to be dewatered while construction occurred until the concrete cured. Dewatered groundwater is typically discharged into nearby surface water or storm sewers. There is known lead contamination in the Study Area from previous operations (see Section 5.18, Regulated Materials) and other industrial activities have occurred or are occurring within or near the Study Area. Consequently there is the possibility that some contamination has leached into the surficial aquifer. Testing would occur prior to discharge if groundwater was encountered and dewatering occurred (see Section 5.14.4, below).

#### **5.14.4 Avoidance, Minimization, and Mitigation**

The method selected to demolish the existing Broadway Viaduct would reduce the potential for debris to fall into Indian Creek. Any debris that may fall into the creek channel during construction would be removed. Additional measures that may be taken to protect Indian Creek include silt fences, temporary detention basins, or other features used in various combinations.

A National Pollutant Discharge Elimination System (NPDES) General Stormwater Discharge Permit for Construction would be required as part of the Project. 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. The potential need for Section 401 Water Quality Certification for the Project would be tied to the need for a Section 404 permit, which is unlikely because there are no wetlands in the area and no fill would be placed in Indian Creek (a water of the U.S.). The U.S. Army Corps of Engineers (USACE) made a preliminary determination during early coordination that a Section 404 Permit would not be necessary. USACE and Iowa DNR would make a final determination to confirm that a Section 404 permit and Section 401 Water Quality Certification would not be required for the Project.

Prior to discharge of any groundwater into Indian Creek or stormwater drains, the groundwater would be analyzed to determine the presence and concentration of any contaminants above allowable discharge levels. If the concentrations are below action levels, the groundwater can be discharged into Indian Creek. If above action levels, the groundwater may be able to be disposed through the Council Bluffs Wastewater Treatment Plant (in coordination with the City) or disposed of in another manner meeting Federal and State requirements.

#### **5.15 Floodplain**

EO 11988, Floodplain Management (42 FR 26951), requires that Federal agencies identify potential floodplain encroachment of projects they fund and that they assess the impact of this encroachment on human health, safety, and welfare and on the natural and beneficial values

of the floodplain. For purposes of the EO, floodplain is synonymous with the 100-year floodplain (the area with a 1 percent annual chance of being flooded).

Floodplains are associated with surface water conveyance channels and influenced by the surrounding topography and drainage basins. Federal Emergency Management Agency (FEMA) mapping was used to determine the extent of the 100-year floodplain and 500-year floodplain (the area with a 0.2 percent annual chance of being flooded) within the Study Area. The ROW needed for the Project was reviewed and compared to the floodplain boundaries to assess potential impacts.

### **5.15.1 Existing Conditions**

According to FEMA floodplain mapping, the entire Study Area is in a floodplain; the majority (53.5 acres) is in the 500-year floodplain of Indian Creek, and only 4.2 acres are within the 100-year floodplain (FEMA, February 4, 2005) (see Figure 5-11). The floodway of Indian Creek extends south from the open channel immediately south of the viaduct; approximately 0.5 acre of the floodway is in the Study Area. As noted in Section 5.1, Land Use, there is no natural habitat within the Study Area floodplain.

### **5.15.2 No-Build Alternative**

The No-Build Alternative would not result in any impacts on floodplain resources within the Study Area or surrounding areas.

### **5.15.3 Build Alternative**

Under the Build Alternative, the design of the new viaduct would have the footprint of the MSE walls outside the mapped floodway of Indian Creek. Consequently, construction would not occur within a floodway, and a no-rise certification from FEMA would not be required.

Piers would be placed in the Indian Creek 500-year floodplain, as they are for the existing structure. Given the extent of the floodplain adjacent to the Broadway Viaduct, there is no practicable option other than locating piers in the floodplain. Although the new viaduct would be wider than the existing viaduct, the actual footprint impact relative to floodplain is dependent on the cross-sectional area of the MSE walls and piers. The MSE walls are projected to be wider than the existing walls because of an increase in width of the viaduct. It is possible that fewer piers would be needed due to advancement in design and materials since the original viaduct was constructed. The exact location and size of the piers and the dimensions of the MSE walls would be determined during final design.

It is reasonable to expect that the MSE walls and piers of the new viaduct would have a negligible reduction in the storage capacity of the 500-year floodplain compared to the existing structure.

Because there is no natural habitat within the Study Area floodplain, the Build Alternative would have no impact on beneficial floodplain values. The Build Alternative would not support incompatible development within the Indian Creek floodplain.

There would be no difference in impacts on the floodplain with the staged or unstaged construction scenarios.

#### **5.15.4 Avoidance, Minimization, and Mitigation**

Although construction within the 500-year floodplain would not require a floodplain development permit from the city, a standard FEMA elevation certificate documenting adherence to floodplain management guidelines was requested by the City because of the proximity to the 100-year floodway and floodplain (City of Council Bluffs, August 17, 2005).

### **5.16 Vegetation**

Vegetation, as considered for this analysis, would include natural areas as well as lawns and maintained areas. A review of aerial photographs and a reconnaissance field survey of the Study Area were conducted to identify areas with vegetation, and the potential construction footprint of the Project was reviewed to identify vegetated areas that may be affected.

#### **5.16.1 Existing Conditions**

No natural areas and very little vegetation exist within the Study Area. The closest residences to the existing viaduct are north of Creek Top Street and have maintained grass yards with some landscaping. Grassy areas are also present in vacant lots adjacent to the viaduct. Landscaped areas adjacent to the viaduct are in two locations, the Broadway Skate Park and Jeffrey W. Waters Memorial Park.

#### **5.16.2 No-Build Alternative**

None of the maintained grass areas within the Study Area would be affected.

#### **5.16.3 Build Alternative**

The Build Alternative could result in the conversion of a small portion of maintained grass at the Broadway Skate Park (approximately several hundred square feet) if access to parking requires modification of curb extensions and parking places. No other conversion or permanent loss of vegetation would be required. Disturbance of vegetation by construction equipment could result in temporary impacts (such as flattening of grass). Areas that supported vegetation that did not recover from disturbance would be restored.

#### ***Staged Construction—Maintain Two Lanes of Traffic***

With the staged construction scenario, some of the grass areas in vacant lots adjacent to the viaduct would be undisturbed at the start of construction but would be disturbed for a longer time period than with unstaged construction. The impacted area for this scenario would be slightly larger than for the unstaged construction scenario because the construction footprint would extend further north and south of Broadway when two lanes are maintained.

### **Unstaged Construction – Close All Lanes of Traffic**

The unstaged construction scenario would result in the disturbance of less vegetated area in vacant lots adjacent to the viaduct over a shorter timeframe than the staged construction scenario. Less vegetation would be disturbed because construction equipment would work primarily within the existing viaduct footprint during and subsequent to demolition.

#### **5.16.4 Avoidance, Minimization, and Mitigation**

Vegetation disturbed by construction activities would be restored.

#### **5.17 Noise**

Sound levels are measured in units called decibels (dB). Because the human ear does not respond equally to all frequencies (or pitches) measured, sound levels are often adjusted or weighted to correspond to the frequency response of human hearing and the human perception of loudness. The weighted sound level is expressed in units called A-weighted decibels (dBA) and is measured with a calibrated sound level meter. Sound levels that correlate with the human perception are also expressed with the descriptor  $L_{eq}$ , which is defined as energy-equivalent sound level. Table 5-3 shows the relative A-weighted noise levels of common sounds measured in the environment.

The dominant noise source in the Study Area is vehicular traffic on the viaduct. Traffic noise consists of vehicular engine noise, exhaust noise, and tire noise from contact with the roadway surface. Other noise sources include aircraft overflights and traffic on other local roadways. Land uses in the Study Area that would likely be sensitive to noise include residential development and recreation areas. Industrial and commercial land uses would generally be less sensitive to noise. FHWA has developed Noise Abatement Criteria (NAC) based on land use activity. For residential areas, the NAC is 67 dBA, and for businesses, the NAC is 72 dBA. The Iowa DOT noise policy defines a noise impact as occurring when levels approach or exceed the NAC. Iowa DOT defines approach as coming within 1 dBA of the NAC, which is 66 dBA for residential areas and 71 dBA for businesses.

Noise monitoring and modeling was conducted to define the existing and predicted future noise environment due to traffic along the viaduct. The results of the modeling were compared to NAC values for prediction of noise impacts.

##### **5.17.1 Existing Conditions**

Noise sensitive sites in the Study Area have been identified, and field measurements have been taken to determine existing sound levels. Noise-sensitive areas included the residential areas north of Broadway between 12<sup>th</sup> and 8<sup>th</sup> Streets and south of the viaduct between 9<sup>th</sup> and 8<sup>th</sup> Streets. The Broadway Skate Park was also included in the analysis. Figure 5-1 identifies locations where sound measurements were taken. Existing noise levels ranged from 60 to 65 dBA. Those levels are below the NAC for residential areas and businesses.

**Table 5-3  
Typical Sound Levels Measured in the Environment**

Noise Source At a Given Distance	A-Weighted Sound Level (dBA)	Noise Environments	Subjective Impression
Shotgun	140	Carrier flight deck	
Civil defense siren (100 feet)	130		
Jet Takeoff (200 feet)	120		Threshold of pain
Loud rock music	110	Rock music concert	
Pile driver (50 feet); ambulance siren (100 feet)	100		Very loud
Freight cars (50 feet)	90	Boiler room; printing press plant	
Pneumatic drill (50 feet); freeway (100 ft)	80	Noisy restaurant	
Busy traffic; hair dryer	70		Moderately loud
Normal conversation (5 feet); air- conditioning unit (100 feet)	60	Data processing center; department store	
Light traffic (100 feet); rainfall; large transformer (200 feet)	50	Private business office	
Bird calls (distant)	40	Average living room; library	Quiet
Soft whisper (5 feet)	30	Quiet bedroom	
	20	Recording studio	
Normal breathing	10		
	0		Threshold of hearing

Source: Peterson and Gross, 1974.

### 5.17.2 No-Build Alternative

Under the No-Build Alternative, noise levels essentially remain unchanged from existing levels. Future noise levels ranged from 60 to 65 dBA. Future noise levels would be essentially the same as existing noise levels because there is minimal traffic growth projected in the Study Area between now and the design year 2030.

### 5.17.3 Build Alternative

Under the Build Alternative, noise levels would remain unchanged from existing levels and the No-Build Alternative. Future noise levels ranged from 60 to 65 dBA, below the NAC for residential areas. The range is the same as it is under the No-Build Alternative due to the flat growth in projected traffic through 2030 and the fact that the new viaduct would be built on essentially the same alignment, both vertically and horizontally. Because future noise levels were projected to remain below 66 dBA (the NAC for residential areas), no noise abatement measures for traffic using the new viaduct would be necessary. Consequently, no noise barrier analysis was conducted as part of this study. Noise during construction was addressed in Section 5.8, Construction.

## 5.18 Regulated Materials

Properties in or adjacent to the Study Area where hazardous materials have been stored may present a future risk if spills or leaks have occurred. Contaminated or potentially contaminated properties are of concern for transportation projects because of the associated liability of acquiring the property through ROW, the potential cleanup costs, and the safety concerns related to exposure to contaminated soil, surface water, or groundwater.

During the feasibility study, a survey of the Study Area (which is inclusive and was larger than the Study Area for this Project) was performed using Phase I ESA methods to identify sites with recognized environmental conditions (RECs). Environmental Data Resources, Inc. (EDR) conducted a file search for the Study Area. The results of this search were compiled in Volume 2 of the feasibility study (Iowa DOT, July 2002b). The list of sites with potential RECs reported in the feasibility study was reviewed for the proximity of these sites to the alignment of the Broadway Viaduct. Reconnaissance of the Study Area was performed to review several sites. A determination was made as to whether a site with contamination would affect the Project or whether the Project would affect contamination at the site or plans for remediation of the site.

### 5.18.1 Existing Conditions

The Study Area has had a history of industrial, commercial, and residential land uses for more than 100 years. The Phase I ESA, in addition to reviewing site databases for underground storage tanks (USTs), hazardous waste generators, known contamination, and use of regulated materials, also involved research of Sanborn maps noting past operations that could cause contamination. Table 5-4 provides the final list of sites with potential RECs in or near the Study Area that were evaluated in the Phase I ESA as well as four other sites (the former American Roofing facility, Bob's Towing and Garage, Jerry's Prop and Marine, and Broadway Auto Body) that were added based on a reconnaissance review (HDR, August 12, 2005). Figure 5-12 shows the locations of the sites.

**Table 5-4**  
**Sites with RECs or Potential RECs**

Facility	Findings	Status <sup>1</sup>
<b>STUDY AREA</b>		
Equipment maintenance garage (102 South 12 <sup>th</sup> Street)	Environmental concern due to active UST and equipment maintenance activities (petroleum products). One bay is currently used by Keenan's Glass Service.	Glass service and inactive maintenance garage
Former American Recycling (near 12 <sup>th</sup> Street and Broadway)	Environmental concern due to recycling of lead batteries and historical use as factory, used auto parts, and auto storage.	Facility was demolished and sampling found lead contamination; remedial plan for capping the site

Facility	Findings	Status <sup>1</sup>
Former Chicago and North Western Railway (C&NW) railroad facilities (near 11 <sup>th</sup> Street and 1 <sup>st</sup> Avenue)	Possible environmental concern associated with historical usage as a railroad facility (petroleum and other products).	Storage facility
Former Illinois Central Railroad facilities (near 105 North 13 <sup>th</sup> Street)	Possible environmental concern associated with historical usage as a railroad facility (petroleum and other products).	Everest Metals
Former automotive repair shop (near 12 <sup>th</sup> Street and Avenue A)	Possible environmental concern associated with historical usage as an automotive repair facility (petroleum products and solvents).	Residential garage
Former tin shop (near 11 <sup>th</sup> Street and Avenue A)	Possible environmental concern due to historical use of heavy metals and current use of inks and thinners.	T-shirt screen-printing shop
Former American Roofing facility (4 North 12 <sup>th</sup> Street)	Possible environmental concern recently as American Roofing facility (plastic cement and asphalt shingles). Past use by Industrial Kiln is unknown at this time but could have been administrative.	Storage building with used vehicles present
Bob's Towing and Garage (1317 West Broadway)	Possible environmental concern due to long-term storage of vehicles and car repair activities (petroleum products and solvents).	Vehicle repair and storage
Jerry's Prop and Marine (1007 West Broadway)	Possible environmental concern due to former storage and maintenance of boat motors (petroleum products).	Boat storage and maintenance facility
Broadway Auto Body (1028 Creek Top)	Possible environmental concern due to storage of vehicles.	Vehicle storage area
<b>NEAR STUDY AREA</b>		
CR Plastics (near 11 <sup>th</sup> Street and 2 <sup>nd</sup> Avenue)	Possible environmental concern due to current and historical usage as a manufacturing facility (possible solvent usage). Located immediately south of former C&NW railroad facilities.	Plastic bag manufacturer (1104 2 <sup>nd</sup> Avenue)
Ryan Auto Parts (108 North 13 <sup>th</sup> Street)	Possible environmental concern due to current use of petroleum products and solvents at auto repair facility.	Vehicle repair and an auto parts outlet for used and rebuilt auto parts
Former telephone equipment warehouse (near 12 <sup>th</sup> Street and 1 <sup>st</sup> Avenue)	Possible environmental concern due to historical usage for storage (possible polychlorinated biphenyl [PCB] contamination from transformers) and current usage as a maintenance garage (possible petroleum contamination).	City of Council Bluffs maintenance garage
Nelson Automotive (1001 Avenue B)	Environmental concern due to active USTs and past leaking UST (petroleum products and solvents).	Active Phillips 66 station with USTs and auto repair shop
Former O.W. Graham Planing Mill (near 13 <sup>th</sup> Street and 2 <sup>nd</sup> Avenue)	Possible environmental concern due to historical use as a planing mill and current use as a print shop (inks and solvents).	South Side Press of the Midlands Limited (1220 2 <sup>nd</sup> Avenue)

Facility	Findings	Status <sup>1</sup>
Former Crawford Lumber and Coal Company (near 12 <sup>th</sup> Street and Avenue B)	Possible environmental concern due to historical use as a lumber mill (wood preservatives).	DEW Storage (personal storage facility)

Note:

<sup>1</sup> Status was updated from an earlier investigation based on 2005 reconnaissance of the Study Area for the Project.

Another potential contamination issue is the presence of paint on the existing viaduct. The bridge was last painted in 1977 with a zinc silicate paint system subsequent to blast cleaning the structure to bare steel. Paint scrape samples were obtained from the pedestrian stairway prior to its removal in November 2001. Although the total lead was below action levels (a concentration of less than 50 parts per million [ppm], which is lower than the Iowa Land Recycling Program [ILRP] soil cleanup standard of 400 ppm), total chromium was 1,025 ppm, which is below the soil cleanup standard of 120,000 ppm for trivalent chromium but above the soil cleanup standard of 230 ppm for hexavalent chromium.

Two sites adjacent to the existing Broadway Viaduct were reviewed for their potential contamination beyond what was performed during the Phase I ESA: a former C&NW railroad facilities site and the former American Recycling site.

The former C&NW railroad facilities site was reviewed through a reconnaissance field study. The area includes a freight depot several hundred feet south of the viaduct and remnants of a former depot, railroad ties, and ballast near the viaduct but south of the frontage road adjacent to the viaduct. No obvious areas of contamination were noted, but the possibility exists that there may have been accidental releases or spills from a tank car, freight car, locomotive, or oil tank for heating and lighting the demolished depot building (HDR, June 2, 2005). A Phase II ESA was judged not necessary for further evaluation of the site.

The former American Recycling site has been purchased by the City. A Phase II Brownfields Targeted Assessment was conducted to identify the extent of contamination (Tetra Tech EM Inc., April 3, 2003). Elevated concentrations of lead exceeding the 400-ppm soil cleanup standard were identified in on-site soils from the ground surface to a depth of 4 feet. There were also elevated levels of PCBs in one sample and arsenic in five samples above the cleanup standards during another limited sampling event (Thiele Geotech, Inc., November 29, 2001). Remediation of the site involved the installation of an engineered capping system with wildflowers planted in the soil above the cap (City of Council Bluffs, November 17, 2005). Although not confirmed through any sampling, it is possible that groundwater in the area of the site might contain lead leached from the surface contamination.

### 5.18.2 No-Build Alternative

The No-Build Alternative would maintain the existing roadway network along Broadway and would not affect any potentially contaminated sites within the Study Area. Extended

maintenance of the viaduct would likely involve future paint removal and repainting. The paint should be sampled to confirm heavy metal concentrations, particularly hexavalent chromium.

### **5.18.3 Build Alternative**

The area that would be disturbed for construction of the Project is much smaller than the Study Area and includes the area beneath and adjacent to the existing viaduct. Consequently, most of the sites listed in Table 5-4, above, would not be affected, nor would potential contamination from the sites affect construction. With the exception of the former American Recycling facility (a high-risk site<sup>6</sup> prior to remediation) and Bob's Towing and Garage (a moderate-risk site), the other sites with RECs that are adjacent to the existing viaduct or frontage roads north or south of the viaduct would represent a low or minimal risk to the Project. Although excavation would not occur on these sites, some construction traffic might disturb the vegetation and soils. Consequently, if construction vehicles traversed the former American Recycling facility site, the cap protecting the contaminated land could be disturbed.

Paint removal during demolition would have to be handled properly to minimize the potential for contamination of soils. Recycling painted steel is possible, but some paint would need to be removed prior to any cutting with a torch due to paint vaporization concerns for the health of workers.

#### ***Staged Construction – Maintain Two Lanes of Traffic***

With the staged construction scenario, the impacted area would be slightly larger than it would for the unstaged scenario because the construction footprint would extend further north and south of Broadway when two lanes are maintained. Consequently, there is more potential for disturbance of any existing contamination.

#### ***Unstaged Construction – Close All Lanes of Traffic***

The unstaged construction scenario would result in the disturbance of less area in vacant lots adjacent to the viaduct over a shorter timeframe than would the staged construction scenario. Less disturbance would occur because construction equipment would work primarily within the existing viaduct footprint during and subsequent to demolition.

### **5.18.4 Avoidance, Minimization, and Mitigation**

Coordination with the City would be performed regarding construction operations near the former American Recycling facility site. When the new viaduct is constructed, the construction plans would need to specify that construction equipment must avoid breaching the protective cap.

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<sup>6</sup> Site risk has been evaluated in accordance with Iowa DOT criteria for high, moderate, low, and minimal risk.

The paint on the viaduct should be sampled to confirm heavy metal concentrations, particularly hexavalent chromium. If the concentrations are below action levels, there is no contamination concern. However, if the concentrations are above action levels, removal and collection of paint would be necessary.

## **5.19 Visual Resources and Aesthetics**

Transportation projects are prominent features in the landscape that can affect the visual quality of the natural and built environment. As such, 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. Replacement of the current viaduct with a new viaduct was considered when evaluating the future viewshed.

### **5.19.1 Existing Conditions**

The Study Area is located in an urban environment dominated by industrial and commercial land uses. Numerous vacant and deteriorated buildings have been demolished, resulting in several empty lots both north and south of the viaduct. Indian Creek south of the viaduct consists of an open concrete-lined channel extending through vacant lots and adjacent to commercial properties. CN and UPRR have tracks that cross underneath the Broadway Viaduct (see Figure 5-1).

As discussed in Section 5.1, Land Use, a portion of the Study Area is included in the City's Mid City Corridor Urban Renewal Plan. The Mid City Corridor Urban Renewal Plan calls for the rehabilitation of the area, with an emphasis on open space and recreational-type land uses.

### **5.19.2 No-Build Alternative**

No visual impacts are expected to occur under the No-Build Alternative. Future rehabilitation of the area is planned and would likely occur even if the Broadway Viaduct were not reconstructed. However, the plans include the proposed reconstruction of the viaduct, so this alternative would not be consistent with the planned viewshed.

### **5.19.3 Build Alternative**

The Build Alternative would result in a structure that is approximately 16 feet wider than the existing viaduct. The new viaduct would be approximately 5 feet higher at its highest elevation than the existing viaduct and would provide more clearance over the railroad lines and at 13<sup>th</sup>, 12<sup>th</sup>, and 10<sup>th</sup> Streets, but the centerline of the horizontal alignment would remain unchanged. Due to increased span length between piers, fewer bridge piers would likely be used on the new structure. The new viaduct would be the same structure type as the existing viaduct, a continuous steel-beam bridge with composite concrete deck.

Because the visual scale of the reconstructed viaduct would remain essentially the same as the existing structure, views from the viaduct and the views of the viaduct would remain essentially the same as they currently are.

### ***Staged Construction – Maintain Two Lanes of Traffic***

Although the manner in which the viaduct would be constructed has no effect on the view of the facility or from the facility, the staged construction scenario would result in a longer timeframe (approximately 7 months longer, assuming comparable design, materials, and techniques) than the unstaged construction scenario before the existing viewshed is reestablished.

### ***Unstaged Construction – Close All Lanes of Traffic***

Under the unstaged construction scenario, the viewshed would be reestablished within approximately 8 to 14 months, compared to 15 to 21 months with staged construction.

## **5.20 Cumulative Impacts**

A cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). Cumulative impacts include the direct and indirect impacts of a project together with impacts from reasonably foreseeable future actions of others. For a project to be reasonably foreseeable, it must have advanced far enough in the planning process that its implementation is likely. The impacts of reasonably foreseeable future actions not associated with a new viaduct include the impacts of other Federal, state, and private actions. Reasonably foreseeable actions are not speculative, are likely to occur based on reliable sources, and are typically characterized in planning documents.

This assessment of the cumulative impacts for Federal, state, and private actions is required by Council on Environmental Quality (CEQ) regulations developed for implementing NEPA. Cumulative impacts were evaluated in accordance with CEQ guidance (CEQ, January 1997; CEQ, June 24, 2005) and other sources, including FHWA interim guidance entitled Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process (FHWA, January 31, 2003) and the FHWA position paper on Secondary and Cumulative Impact Assessment in the Highway Project Development Process (FHWA, August 20, 1992).

The methodology for identifying cumulative issues used for this study involved identifying resources affected by the proposed Project, consideration of the types of impacts likely for other reasonably foreseeable projects, and a determination of the approximate timeframes and locations of impacts.

### 5.20.1 Existing Conditions

Construction of Hill Valley Plaza near Broadway and 15<sup>th</sup> Street is the only development project currently occurring in the Study Area.

The following major reasonably foreseeable projects would occur within or near the Study Area. Some may not occur during the same timeframe as the proposed Project, but past and future actions should also be considered when addressing cumulative impacts (CEQ, June 24, 2005). The proposed Project, in conjunction with the following projects, has the potential for cumulative effects on railroads and utilities, public services, transportation (including business impacts associated with limited access), traffic maintenance, pedestrians and bicyclists, and recreation:

- Mid City Corridor Urban Renewal Plan – The Study Area includes a portion of the Mid City Corridor addressed in the City’s Mid City Corridor Urban Renewal Plan (City of Council Bluffs, May 2004). Planned acquisition in accordance with the Mid City Corridor Urban Renewal Plan is occurring when funds are available (City of Council Bluffs, August 12, 2005). The timeframe of the Mid City Corridor Urban Renewal Plan extends through 2034 (30 years after its adoption and approval by the City Council) and would involve redevelopment of acquired land primarily to parks, trails, City facilities, and open space.
- Avenue G Viaduct – Final design and acquisition of properties is occurring for this MAPA 2025 LRTP project, which includes the construction (starting in fall 2005) of a four-lane viaduct along Avenue G from North 8<sup>th</sup> Street to North 16<sup>th</sup> Street. The project also includes an improved roadway connection from the viaduct’s eastern terminus (North 8<sup>th</sup> Street and Avenue G) to Kaneshville Boulevard.
- North Broadway – Improvement of North Broadway from two to three lanes from Kaneshville Boulevard north to Mud Hollow Road. Construction for this MAPA 2025 LRTP project could potentially start by 2010.
- Council Bluffs Interstate System Improvements – Long-term, broad-based transportation improvements along I-80, I-29, and I-480, including 18 mainline miles of interstate and 14 interchanges (3 system, 11 service), that would add capacity and correct functional issues along the mainline and interchanges and upgrade the I-80 Missouri River crossing. Construction for this MAPA 2025 LRTP project would occur in segments starting in the next 10 years and would be completed in the next 30 years subject to funding availability. The portion nearest Broadway would not likely start construction until the middle of the projected timeframe.
- Madison Avenue – Improvement of Madison Avenue from two to four lanes from Broadway south to Bennett Avenue. Construction for the portion of this MAPA 2025 LRTP project near Broadway could potentially start by 2015.

- Railroad Consolidation – The City of Council Bluffs is traversed by many rail lines that affect commerce and transportation. In an effort to streamline services, an evaluation is ongoing to consider adding some rail lines in some areas and decreasing the number of lines in other areas. These changes in rail lines could be occurring during the next several years.

### 5.20.2 No-Build Alternative

If the Broadway Viaduct would not be replaced and would undergo periodic, extensive maintenance, the other reasonably foreseeable projects would occur independently. The Avenue G Viaduct and improvements to the Council Bluffs Interstate System are both projected to reduce future traffic on the Broadway Viaduct. The Avenue G Viaduct would provide an alternative grade-separated crossing of the railroad corridor, which would be beneficial for emergency service traffic. The two other MAPA 2025 LRTP projects would minimally affect traffic along the Broadway Viaduct.

The Mid City Corridor Urban Renewal Plan, as well as other redevelopment plans for the Broadway corridor, assumes that the Broadway Viaduct would be replaced. Consequently, the redevelopment of the Mid City Corridor could be adversely affected with a deteriorating viaduct. Consolidation of railroad lines and utilities, construction of trails for pedestrians and bicyclists, and recreation sites may be delayed or become less attractive opportunities if the viaduct was not replaced.

### 5.20.3 Build Alternative

Replacement of the existing viaduct would result in physical impacts occurring within close proximity to the existing viaduct, as noted previously in Section 5. Consequently, based on a comparison of construction impact areas of the Broadway Viaduct Improvement Study and the other reasonably foreseeable projects listed in Section 5.20.1, above, disturbance of the same area would not occur except potentially with the Mid City Corridor redevelopment. Improvements to the Council Bluffs Interstate System, North Broadway, and Madison Avenue may temporarily affect access to businesses, traffic, trails, railroad crossings, and recreation sites while construction is occurring, but these cumulative impacts would be removed in time and distance from those impacts associated with the proposed Project.

The Mid City Corridor Urban Renewal Plan notes that the covered portion of Indian Creek near Broadway may ultimately be opened. Modification of the Indian Creek channel could occur subsequent to construction of the new Broadway Viaduct; this work could occur beneath the viaduct and would need to be planned to not disturb the piers and MSE walls.

Mid City Corridor redevelopment was planned assuming the Broadway Viaduct would be replaced. Plans for recreational sites, parks, and trails are dependent on long-term acquisition and conversion of properties to their proposed reuse. Consolidation of rail lines could occur independently and potentially result in a shorter and lower viaduct than currently planned. During construction of the Broadway Viaduct, it is possible that some building demolition could be occurring as part of the acquisition and improvement process. Adverse cumulative impacts are not anticipated in the Study Area even if some of the redevelopment projects

occur during construction of the viaduct. The long timeframe of the redevelopment project minimizes the potential that major activities from multiple projects would be simultaneously affecting the Study Area.

Vehicles currently using Avenue G would divert to other roadways during construction of the Avenue G Viaduct; some of the traffic would divert to the Broadway Viaduct. Because the Avenue G Viaduct would be completed before construction of the new Broadway Viaduct would commence, no cumulative traffic maintenance or transportation system impacts would occur. Public services, such as MAT buses and emergency vehicles, would not be adversely affected by the routes they can take when construction occurs for the aforementioned projects because of the different timeframes and locations of the projects. Emergency vehicles would be able to travel on a grade-separated crossing of the north-south railroad corridor and avoid any train traffic delays.

In summary, no reasonably foreseeable project listed in Section 5.20.1 has the same timeframe for completion or has the same construction impact area as the proposed Project except for the Mid-City Corridor Urban Renewal Plan. However, adverse cumulative impacts are not anticipated because the extended timeframe (approximately 30 years) of the urban renewal project minimizes the possibility of extensive activities conflicting with construction of the Broadway Viaduct. Consequently, no cumulative adverse impacts are anticipated to occur.

#### ***Staged Construction – Maintain Two Lanes of Traffic***

Under the staged construction scenario, the Project would take approximately 7 months longer than unstaged construction, assuming comparable design, construction techniques, and materials. Consequently, there is more potential for conflict and effect on other scheduled projects.

#### ***Unstaged Construction – Close All Lanes of Traffic***

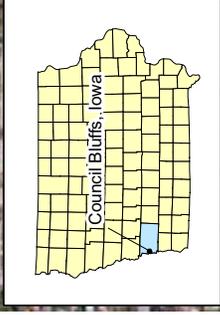
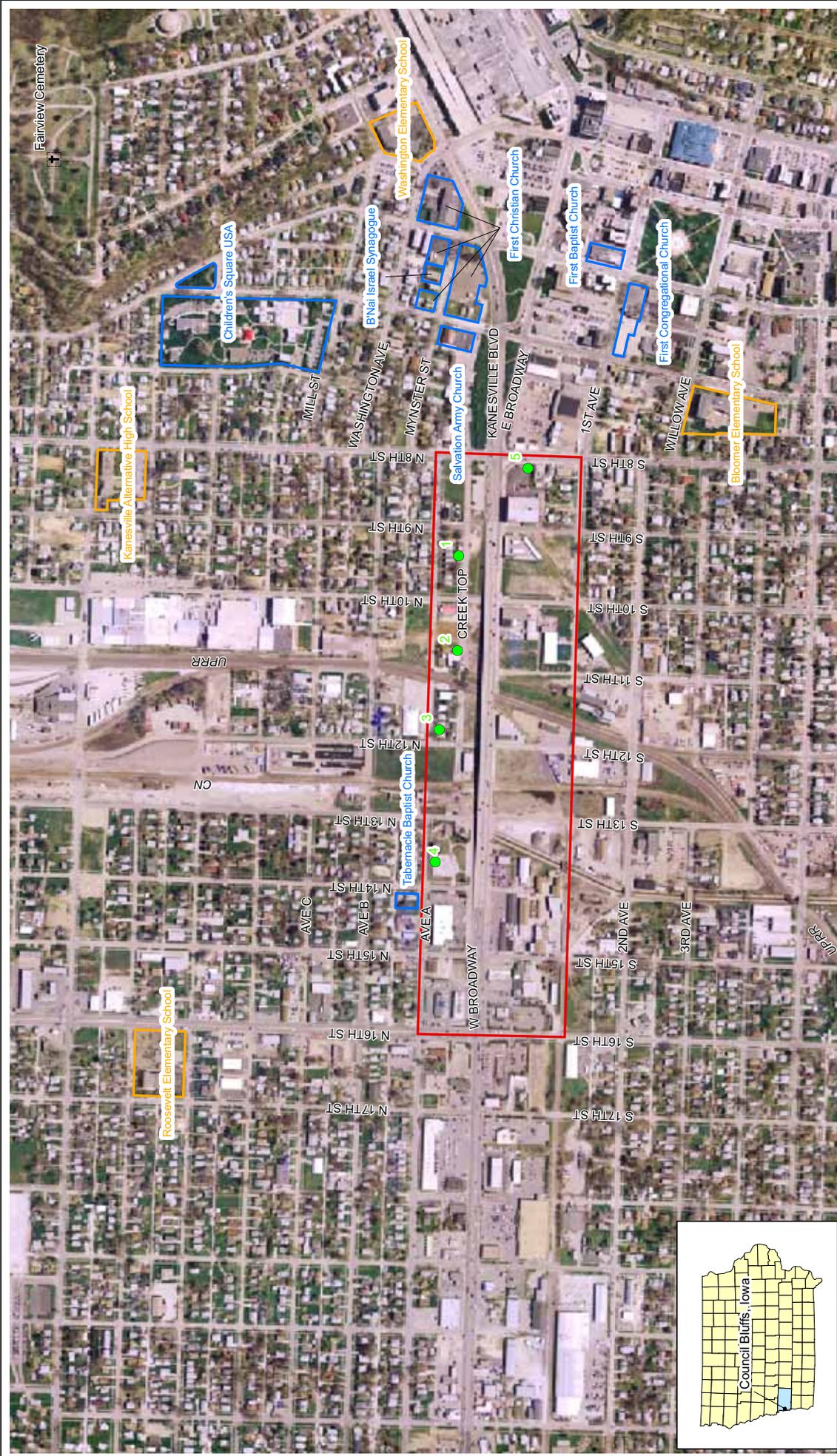
The unstaged construction scenario would decrease the construction timeframe by approximately 7 months compared to staged construction and would reduce the potential for conflicts with other projects.

#### **5.20.4 Avoidance, Minimization, and Mitigation**

Coordination between Iowa DOT and the City is ongoing and would continue for determining the best method of constructing the Project, developing detour routes, and minimizing impacts of the Project as well as other projects that would occur near the Broadway Viaduct. Avoidance of key City properties was a consideration early in Project planning. Constructing the Project on the existing alignment would avoid requiring large-scale acquisitions of City and private property. Due to construction of a wider structure, some frontage road segments would be narrowed, but no parcels outside of frontage road locations would need to be acquired. Future trail locations were also not impacted by constructing a new viaduct on the same alignment as the existing viaduct.

### **5.21 Streamlined Resource Summary**

As noted in the preface to Section 5, a streamlined process developed by Iowa DOT and FHWA was used to focus the analysis on those resources potentially impacted by the Project and to eliminate or decrease description and impact analysis of resources not affected by the Project. Appendix A contains the checklist showing the process used to identify resources not within the Study Area or not affected by the Project as well as a brief summary providing the rationale for performing only limited analysis on resources not described or analyzed in Section 5.



**Legend**

- Study Area
- School Property
- Church Property
- Noise Monitoring Location
- Cemetery



**Human Environment**  
**Broadway Viaduct Improvement Study**  
**Council Bluffs, Iowa**  
 Environmental Assessment

DATE Dec 2005  
 FIGURE 5-1



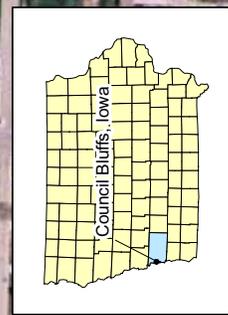
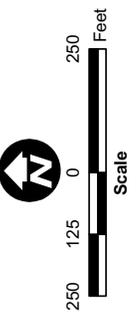
DATE Dec 2005  
FIGURE 5-2

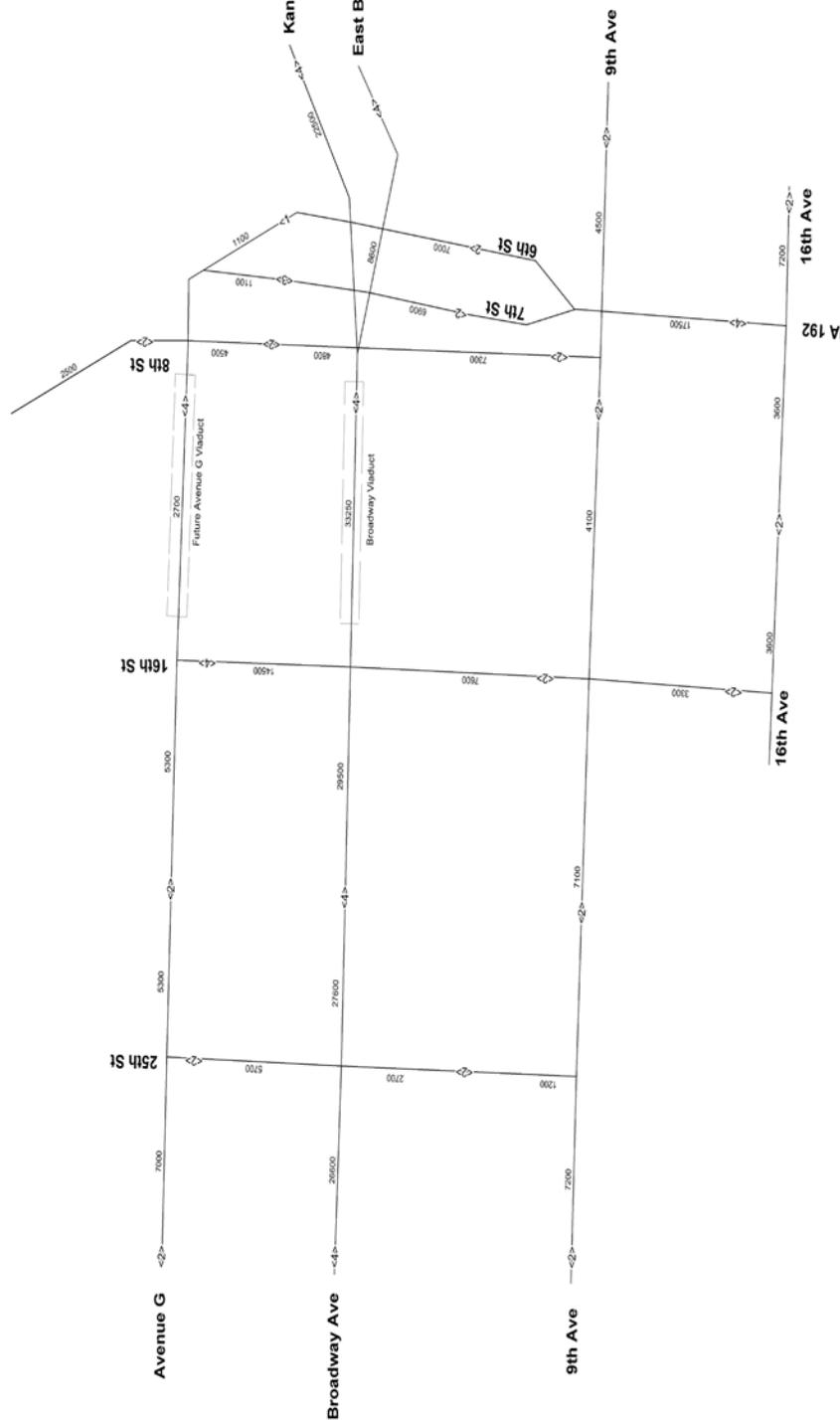
### Local Businesses in or Near the Study Area

Bradyway Viaduct Improvement Study  
Council Bluffs, Iowa  
Environmental Assessment



**Legend**  
 Study Area  
• Businesses  
X Structure Demolished



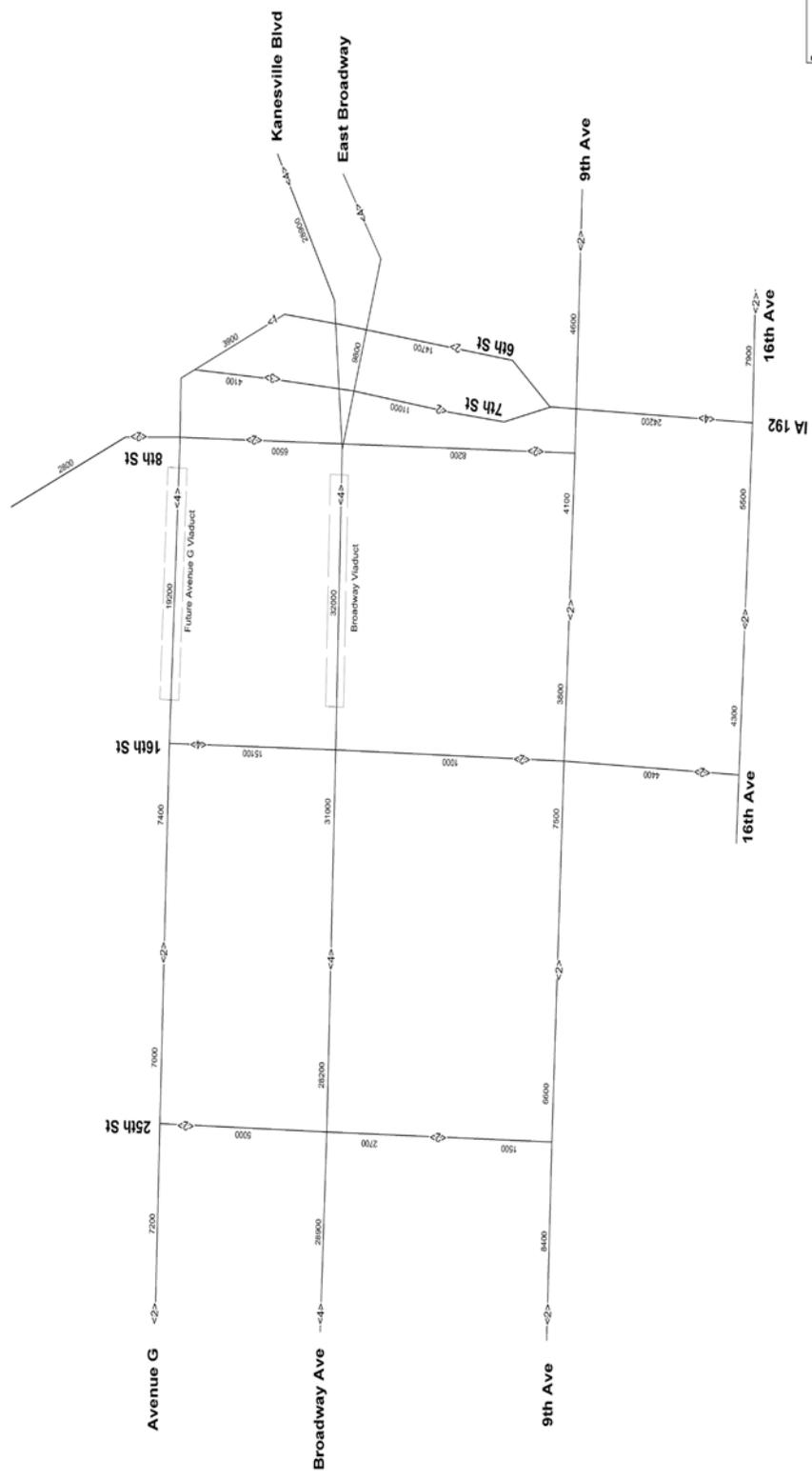


**Legend**  
 XXXX Existing ADT\*  
 -X- Number of Total Lanes  
 \*ADT= Average Daily Traffic  
 [ ] Viaduct

DATE	Dec 2005
FIGURE	5-3

**Existing Average Daily Traffic for Broadway Viaduct Area**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment





**Legend**  
 XXXX 2030 ADT\*  
 <X> Number of Total Lanes  
 \*ADT = Average Daily Traffic  
 [ ] Viaduct

DATE	Dec 2005
FIGURE	5-4

**2030 Forecasted Average Daily Traffic for Broadway Viaduct Area**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment





Urban Street Operational Average Daily Traffic (ADT) Estimates

Operations	Description	Principal Arterial		Minor Arterial	
		2-Lane Roadway	4-Lane Roadway	2-Lane Roadway	4-Lane Roadway
Acceptable (LOS A-C)	Travel speeds may decrease by up to one-half of average operating conditions. The ability to maneuver in the traffic stream will become more difficult as traffic volume increases. Longer queues and travel speeds will decrease by one-half to two-thirds of average operating conditions. Sight line maneuvering within the traffic stream becomes difficult.	14,700-17,600	30,000-35,000	10,300-16,000	21,400-33,900
Congested (LOS D-E)	Average travel speeds will decrease by two-thirds of average operating conditions. Interaction congestion and large queues are probable.	0-14,700	0-30,000	0-10,300	0-21,400
Failure (LOS F)		> 17,600	> 35,000	> 16,000	> 33,900

\*LOS= Level of Service

**2010 Forecasted Average Daily Traffic for Broadway Viaduct Area with Staged Construction**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment





Urban Street Operational Average Daily Traffic (ADT) Estimates

Operations	Description	Principal Arterial 4-Lane Freeway	Minor Arterial 2-3 Lane Road	Minor Arterial 4-Lane Freeway
Acceptable (LOS* A-C)	Travel speeds may decrease by up to one-half of maneuver in the traffic stream will become more difficult as traffic volume increases. Longer queues and additional delays are possible at intersections and travel times may increase by 10-20%.	0-30,000	0-10,000	0-21,400
Congested (LOS* D-E)	Travel speeds will decrease by two-thirds or more. Intersections congested and large delays are probable.	30,000-35,000	10,000-16,000	21,400-33,000
Failure (LOS* F)	Travel speeds will decrease by two-thirds or more. Intersections congested and large delays are probable.	> 35,000	> 16,000	> 33,000

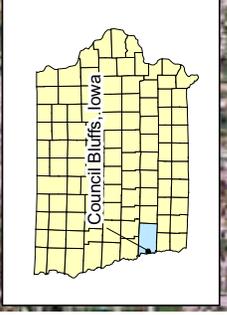
\*LOS= Level of Service

Example:  
 4th Street  
 Highway roadway (H)  
 Estimated 2010 daily traffic volume during Broadway construction is 9,700 vehicles a day which includes 6,000 vehicles that divert from the Broadway Viaduct.  
 Operation Acceptable (LOS D) (Note: 1000 is listed in the map for additional information)

**Notes:**  
 -Traffic estimates developed using information from a MAPA model (Council Bluffs Interstate Study), field visits, and engineering judgement.  
 -Assumes earliest possible Broadway Viaduct construction year is 2010.  
 -Assumes the Avenue G Viaduct is constructed and open to traffic when construction of the Broadway Viaduct begins.

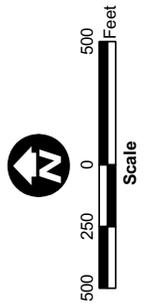
**Legend**  
 1000+ Estimated 2010 ADT during Broadway construction  
 500-999 Estimated 2010 ADT during Broadway construction  
 100-499 Estimated 2010 ADT during Broadway construction  
 1-99 Estimated 2010 ADT during Broadway construction  
 - - - - - Number of total lanes  
 - - - - - Acceptable\*\*  
 - - - - - Congested\*\*\*  
 - - - - - Road Closed  
 - - - - - ADT = Average daily traffic  
 - - - - - \*ADT = Average daily traffic  
 - - - - - \*\*The number of lanes, the greater the estimated diversion (within 1.0), the greater the estimated diversion





**Legend**

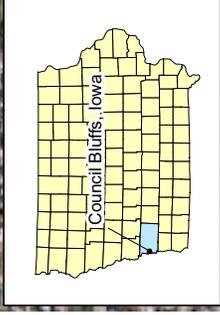
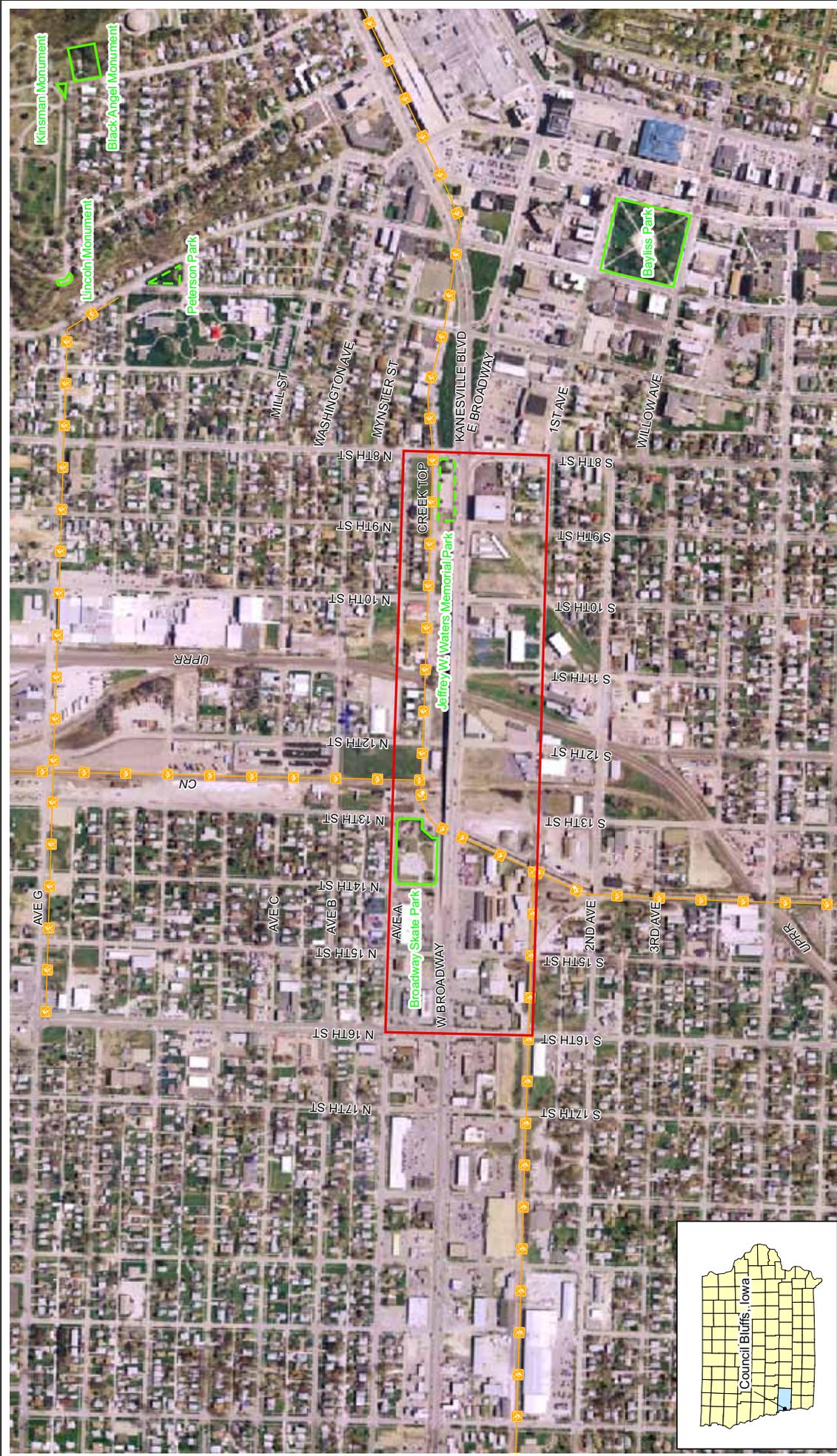
- School Property
- Church Property
- Cemetery
- Detour 1 - Avenue G: Two-way traffic on Avenue G and 16th Street, and one-way traffic on 6th Street and 7th Street
- Detour 2 - Avenue B and 2nd Avenue: One-way traffic on Avenue B (westbound) and 2nd Avenue (eastbound). Both avenues would be temporarily converted from two-way traffic to one-way traffic.



DATE	Dec 2005
FIGURE	5-7

**Potential Detour Routes**  
**Broadway Viaduct Improvement Study**  
**Council Bluffs, Iowa**  
 Environmental Assessment





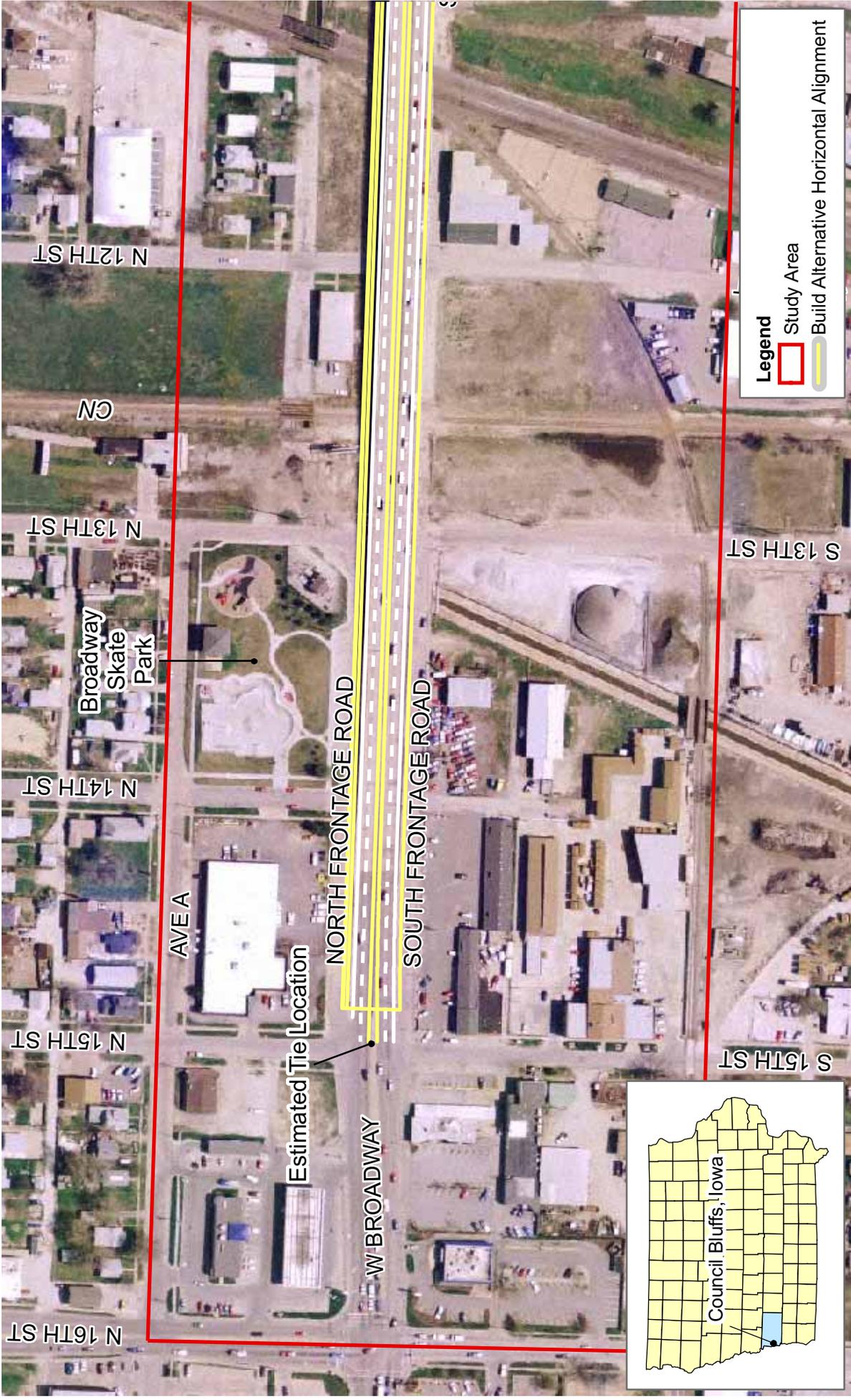
- Legend**
- Study Area
  - City Park
  - Non-City Park
  - Proposed Bike/Pedestrian Trails



**Recreation Areas**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment

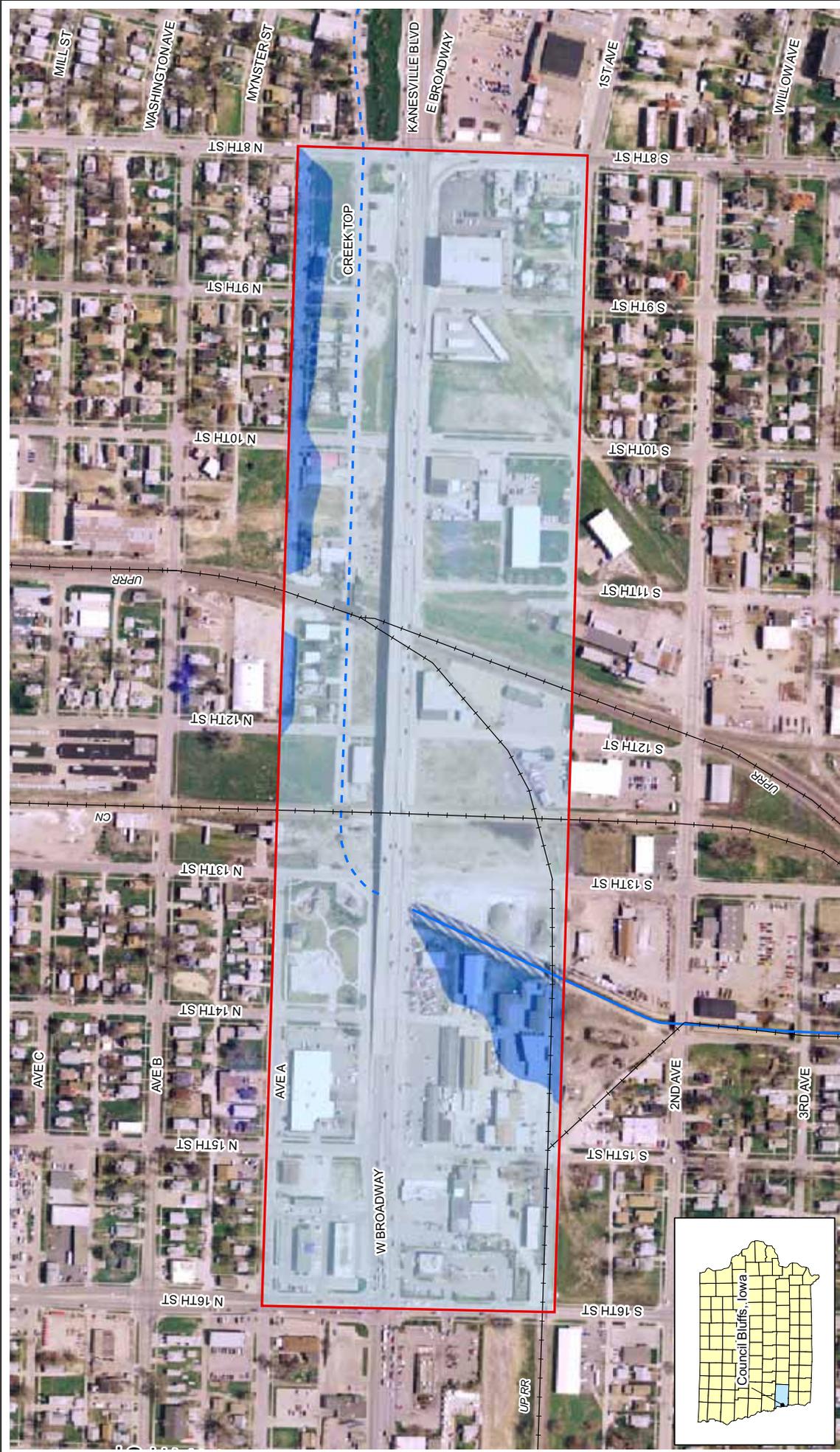
DATE	Dec 2005
FIGURE	5-8





**Broadway Skate Park and Preliminary Horizontal Alignment for the Build Alternative**  
 Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment

DATE	Dec 2005
FIGURE	5-10



DATE	Dec 2005
FIGURE	5-11

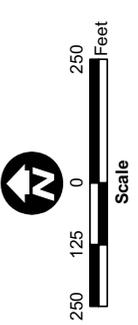
**Surface Water and Floodplains**  
**Broadway Viaduct Improvement Study**  
**Council Bluffs, Iowa**  
 Environmental Assessment



**Legend**

- Study Area
- 100 Year Floodplain
- 500 Year Floodplain
- Concrete-Lined Channel
- Underground Conduit
- Floodway
- Railroad
- Indian Creek

*Note: Floodplain boundaries are only shown in Study Area. Source: Digitized from FIRIM Map, February, 2005*





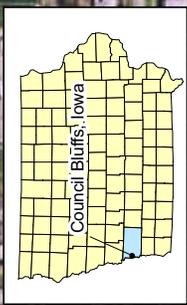
DATE Dec 2005  
 FIGURE 5-12

### Sites with Potential Contamination

Broadway Viaduct Improvement Study  
 Council Bluffs, Iowa  
 Environmental Assessment



**Legend**  
 Study Area  
 Regulated Material Sites



**SECTION 6**

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**DISPOSITION**

## **SECTION 6 DISPOSITION**

The Broadway Viaduct Improvement Study EA is being distributed to the following agencies and organizations. Individuals receiving an EA are not listed for privacy reasons.

### **6.1 Federal Agencies**

Federal Aviation Administration  
Federal Emergency Management Agency  
Federal Highway Administration – Iowa Division  
Federal Railroad Administration  
Federal Transit Administration  
Small Business Administration  
U.S. Army Corps of Engineers – Omaha District  
U.S. Army Corps of Engineers – Rock Island District  
U.S. Coast Guard  
U.S. Department of Agriculture Natural Resources Conservation Service  
U.S. Department of Housing and Urban Development  
U.S. Department of the Interior – National Park Service  
U.S. Department of the Interior – Office of Environmental Policy and Compliance  
U.S. Environmental Protection Agency – Region 7  
U.S. Fish & Wildlife Service – Rock Island Field Office

### **6.2 State Agencies**

Iowa Department of Natural Resources, Conservation and Recreation, and Environmental Services Divisions  
State Historical Society of Iowa, Department of Cultural Affairs

### **6.3 Local/Regional Units of Government**

Council Bluffs Chamber of Commerce  
City of Council Bluffs Community Development Department  
City of Council Bluffs Parks, Recreation, and Public Property Department  
City of Council Bluffs Public Works Department  
Metropolitan Area Transit  
Omaha-Council Bluffs Metropolitan Area Planning Agency  
Pottawattamie County

#### **6.4 Other**

Aquila Natural Gas  
AT&T  
Canadian National Railway Company  
Cox Communications  
MidAmerican Energy  
Qwest  
Union Pacific Railroad  
Historical Society of Pottawattamie County

#### **6.5 Locations Where This Document is Available for Public Review**

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

Federal Highway Administration  
105 6th Street  
Ames, IA 50010

Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

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

**SECTION 7**

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**COMMENTS AND COORDINATION**

## SECTION 7

# COMMENTS AND COORDINATION

This section includes a summary of agency coordination, public involvement, and tribal coordination that has occurred during the development of this EA. Future public involvement efforts that are planned for the Project are also discussed. Appendix B contains agency coordination letters and public comment letters received during the NEPA process for the Project.

### 7.1 Agency Coordination

Early agency coordination commenced on October 14, 2004, through letters to the Federal, state, and local government agencies to announce the initiation of the Broadway Viaduct Improvement Study and to solicit feedback from agencies on their relevant areas of expertise. The following entities were contacted as part of the early coordination efforts, and written responses to the early coordination request are provided in Appendix B:

#### Federal Agencies

- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Highway Administration – Iowa Division (*Can-Do participant*)
- Federal Railroad Administration
- Federal Transit Administration
- U.S. Army Corps of Engineers – Omaha District (*Can-Do participant*)
- U.S. Army Corps of Engineers – Rock Island District (*Can-Do participant*)
- U.S. Coast Guard (*Can-Do participant*)
- U.S. Department of Agriculture Natural Resources Conservation Service (*Can-Do participant*)
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior – National Park Service
- U.S. Department of the Interior – Office of Environmental Policy and Compliance
- U.S. Environmental Protection Agency – Region 7 (*Can-Do participant*)
- U.S. Fish & Wildlife Service – Nebraska Field Office (*Can-Do participant*)
- U.S. Fish & Wildlife Service – Rock Island Field Office (*Can-Do participant*)

**State Agencies**

- Iowa Department of Economic Development
- Iowa Department of Natural Resources (*Can-Do participant*)
- State Historical Society of Iowa

**Local/Regional Units of Government**

- Council Bluffs Chamber of Commerce
- City of Council Bluffs Community Development Department
- City of Council Bluffs Parks, Recreation, and Public Property Department
- City of Council Bluffs Public Works Department
- Metropolitan Area Transit
- Omaha-Council Bluffs Metropolitan Area Planning Agency

Letters from agencies are provided in Appendix B. Comments received are summarized as follows:

- There are no sites near the Project (and hence no boundary conflicts) that have been improved with the following funding sources: Land and Water Conservation Fund, Resource Enhancement and Protection Fund, or Recreation Infrastructure Fund.
- No records of rare species or significant natural communities were found during a search by Iowa DNR. Surveys for any species or habitat are not necessary for this study. However, if listed species or rare communities are found during the design or construction phases, additional studies and/or mitigation may be required.
- The U.S. Coast Guard (USCG) stated that the Project does not involve navigable waters for which they have jurisdiction, so a USCG bridge permit is not required.
- It is necessary to coordinate with the U.S. Fish & Wildlife Service (USFWS) Rock Island Field Office concerning potential impacts on Federally listed species and to coordinate with the State Historical Society of Iowa to determine potential impacts on historic properties.
- A Section 404 permit will not be required for this Project because discharge of dredged or fill material into waters of the U.S. (including wetlands) would not occur for the proposed Project.
- Because the proposed Project does not involve USACE-administered land, no further USACE real estate coordination is necessary unless ROW impacts would occur.
- The Iowa Emergency Management Division should be contacted if the proposed Project may impact a designated floodway. If a designated floodway has not been defined, the 100-year floodwater surface elevation is not to be increased by more than 1 foot relative to pre-Project conditions.

- The Mid City Corridor Urban Renewal Plan calls for development of the area adjacent and below a new Broadway Viaduct as open space and recreation.
- A Phase II Brownfields Targeted Assessment has found elevated concentrations of lead in the soil of the property at 1207 West Broadway (formerly the American Recycling Center) and in water samples in nearby Indian Creek.
- Concern was expressed about Federally and state-listed threatened, endangered, candidate, and proposed species and habitat (such as wetlands) that could potentially occur in the Study Area.
- The State Historical Society of Iowa noted that the APE needs to be adequately defined, cultural properties within the APE need to be identified, the significance of the properties regarding NRHP eligibility must be reported, and a determination of effects on the properties must be made.

## 7.2 NEPA/404 Merge Coordination

This Project was initiated using Iowa DOT's Can-Do development process. The purpose of the Can-Do process is to strengthen the partnership among Iowa DOT, FHWA, and other agencies by streamlining and shortening project development without losing program integrity and quality. Agencies involved in the Can-Do process are identified in Section 7.1, above. The Can-Do process incorporates planning, design, agency coordination, and public involvement elements, and it integrates compliance with NEPA and Section 404 of the Clean Water Act.

The agency coordination that occurred in conjunction with the NEPA/404 merge process, as a component of the Can-Do process, consisted of meetings on Concurrence Points 1 and 2 (addressed at one meeting) and Concurrence Point 3. Concurrence points are milestones within the Can-Do process where the transportation agency requests agency concurrence regarding four points: (1) Purpose and Need, (2) Alternatives to be Analyzed, (3) Alternatives to be Carried Forward, and (4) the Preferred Alternative. The intent of the concurrence point process is to encourage early participation by the regulatory agencies in an effort to validate decisions made by the transportation agency during the NEPA process and to avoid revisiting those decisions after significant effort has been expended performing detailed analyses and design. The following concurrence meetings have been held for this EA.

### **Concurrence Points 1 and 2**

Concurrence Points 1 and 2 were addressed at one meeting held on January 26, 2005. At this meeting, all participants concurred on Concurrence Point 1, Purpose and Need, and Concurrence Point 2, Alternatives to be Analyzed. Comments from this meeting are summarized as follows:

- The agencies expressed minimal concern with the Project because it would occur in an urban area with few natural resources, including a lack of wetlands.

- Concern with a potential issue of Indian Creek was expressed and resolved as it was noted that although the Project would cross Indian Creek and its associated floodplain, the creek is enclosed in a conduit beneath the viaduct and the future viaduct would also be extended over the same area.
- Approximate timeframes of the Project for the two different construction scenarios was clarified. The unstaged construction scenario could be completed in approximately 8 months, and the staged construction scenario could be completed in approximately 16 months.

### **Concurrence Point 3**

Concurrence Point 3, Alternatives to be Carried Forward, was discussed at a meeting held on October 26, 2005. All agencies reached concurrence on Concurrence Point 3 and agreed that the concurrence process was complete at this project stage. Comments from this meeting and subsequent letters are summarized as follows:

- USACE Rock Island District asked whether the Project would involve an impact to Indian Creek. When told that the project would be outside the floodway and 100-year floodplain of the creek, that no fill would be placed in the creek, and that the concrete conveyance structure would not be affected, USACE Rock Island indicated that no 404 permitting would be needed. As far as the District is concerned, Concurrence Point 4 would not be necessary for the Project to proceed.
- Iowa DNR noted no comments because no natural resources would be affected in the Project area and also noted that Concurrence Point 4 would not be required for this Project.
- USFWS Rock Island Field Office and EPA Region 7 NEPA and 404 Offices did not attend the meeting but subsequently concurred on Point 3 and indicated that Concurrence Point 4 would not be required for this Project.

### **Concurrence Point 4**

As noted previously, USACE Rock Island District, Iowa DNR, USFWS Rock Island Field Office, and EPA indicated Concurrence Point 4 is not required for this Project.

## **7.3 Public Involvement**

An extensive public involvement program was used during the development of the Project to effectively engage the general public and interested parties in the Project. The key components of this program are outlined in the following sections.

### **7.3.1 Public Meetings**

One open-house-style public information meeting (PIM) was held from 4:00 to 7:00 p.m. on December 7, 2004, at the Council Bluffs Public Library to provide information to the public and to gather public feedback. Representatives from FHWA, Iowa DOT, and the consultant design team of CH2M HILL and HDR were present to discuss the Project with City and

county leaders and the general public. On display were a number of informational boards that provided information on the Project. Boards included information on the structural aspects of the existing viaduct, crash history, the environmental constraints in the Study Area, the alternatives being considered, the proposed cross sections being considered, forecasted traffic projections, Project timeline, and Project contact information. Attendees were able to provide comments verbally and in writing at the meeting as well as by sending their comments to Iowa DOT after the meeting.

A total of 26 people attended the PIM, including representatives from the Council Bluffs Police Department, the Council Bluffs Fire Department, the Council Bluffs City Engineers Office, the Council Bluffs City Council, the Council Bluffs Chamber of Commerce, and MAPA. The following is a summary of some of the key comments that were received from those attending the PIM:

- The consensus was in favor of constructing a new viaduct because of the age and condition of the existing structure.
- The majority of those who commented on the two construction scenarios being considered (staged or unstaged) preferred the unstaged scenario. The unstaged construction scenario would close the viaduct but would get the construction completed as quickly as possible. Some attendees, including a MAPA representative, were opposed to closing the viaduct during construction and cited safety concerns and length of the detour around the Broadway Viaduct as negatives of this scenario.
- A representative of the Council Bluffs Fire Department commented that with a staged construction scenario, the fire department may still choose to use other routes when responding to an emergency because of the congestion that would be expected on the viaduct if only two lanes are open for traffic.
- Several commentators indicated a desire to have a sidewalk included on the new viaduct, and some preferred a wider path that could be used as a trail. Pedestrian safety, particularly for those who would have to walk beneath the viaduct when dark, was the primary factor.
- Preference of a median type was evenly split between the mountable raised median and the barrier-divided median. Those in favor of the barrier-divided median option indicated that this option would be safer by eliminating head-on crashes and would prohibit pedestrians from walking down the median.
- Police and fire department representatives indicated that they preferred wider shoulders (10-foot) and the mountable median from an incident-management and emergency response perspective.
- Representatives from the City Engineers Office indicated that both the staged and unstaged construction scenarios would impact traffic unfavorably throughout the area. Regardless of the construction scenario considered, they believed that plans to maintain and detour traffic have to be reasonable and considered in advance. While the ADT and estimated operational performance presented may be accurate for the roadway links, it is unlikely that the intersections could handle such volumes without

improvement. It was suggested that the Project team meet with City officials to work out a traffic maintenance plan and determine areas where off-system improvements may be needed to the existing road system prior to construction of a new viaduct.

- City officials indicated that the possibility exists for a reduction in the number of railroad tracks, relocation of side roads currently beneath the viaduct, and/or closure of some or all of the roads currently beneath the viaduct. These options would reduce the overall length of the new viaduct.
- The aesthetics of a new viaduct should match City plans for redevelopment of land in the area of the viaduct.

### **7.3.2 Correspondence**

Throughout the course of the Project, correspondence was received from the public through a variety of means, including the PIM, telephone calls, letters, and email. All public correspondence was logged.

### **7.3.3 Project Newsletter**

Project newsletters were published and distributed to all interested parties on the Project mailing list prior to the public meeting in December 2004. The Project mailing list includes slightly more than 100 businesses, City and county officials, public entities, and residents.

### **7.3.4 Future Public Involvement**

A public hearing on the Signature EA is anticipated for February 2006.

## **7.4 Tribal Coordination**

The following tribes were contacted to seek comment concerning the Project:

- Iowa Tribe of Oklahoma
- Omaha Tribe
- Otoe-Missouri Tribal Office
- Sac & Fox Nation of Mississippi in Iowa
- Winnebago Tribe of Nebraska

No tribes commented on the Project.

**SECTION 8**

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**CONCLUSION AND RECOMMENDATION**

## SECTION 8 CONCLUSION AND RECOMMENDATION

This Environmental Assessment documents the absence of significant impacts associated with the implementation of either of the construction scenarios of the Build Alternative, introduced in Section 4.0 and evaluated for impacts in Section 5.0. Table 8-1 lists the potential environmental impacts of the No-Build Alternative and both construction scenarios of the Build Alternative. Unless impacts of a significant nature are introduced at the public hearing on this Environmental Assessment, then a Finding of No Significant Impact (FONSI) would be the appropriate decision document for this Project. This determination is based on the appropriate implementation of applicable Federal, state, and local requirements for soil erosion, water quality, regulated materials, historic sites, and Section 4(f) properties, as well as the determination of one or more suitable detour routes during construction. The FONSI would specify the selected alternative, note specific activities to avoid, mitigate, or minimize impacts, and address any comments on the Signature EA.

**Table 8-1  
Summary of Potential Impacts**

Resource	No-Build Alternative	Build Alternative	
		Staged Construction	Unstaged Construction
Land Use	No impacts are expected as the existing roadway network would be maintained.	No direct or indirect impacts are expected as a new viaduct would provide the same traffic capacity and access to the surrounding roadway network and local businesses as the existing viaduct.	Same as staged construction.
Churches and Schools	No impacts would occur as no churches or schools are located in the Study Area.	No direct impacts post-construction would occur as no churches or schools are located in the Study Area. Temporary access changes would occur. During construction, more traffic would pass some churches and schools along detour routes.	Same as staged construction, but access impacts would occur over a shorter timeframe.
Railroads and Utilities	No impacts would occur.	Some utilities may need to be relocated. Short-term disruptions in rail service would occur during construction.	Same as staged construction but disruptions would occur over a shorter timeframe.

Resource	No-Build Alternative	Build Alternative	
		Staged Construction	Unstaged Construction
Public Services	Access to and from the City maintenance facilities or the routes public service providers use in passing through the Study Area would not be affected except at times when periodic maintenance would be required.	Emergency providers may be required to use Avenue G, and MAT bus routes would be altered slightly and shifted to local roads to account for the closure of two lanes of the viaduct during construction.	Emergency response vehicles would use Avenue G to avoid delays at train crossings, and MAT bus routes would be altered slightly and shifted to local roads to account for the closure of the viaduct during construction.
Environmental Justice	There would not be a disproportionate adverse effect.	Same as the No-Build Alternative.	Same as the No-Build Alternative.
Transportation	The Broadway Viaduct would continue to deteriorate, and the transportation pattern and traffic along Broadway would be affected during rehabilitation and maintenance.	Approximately 45 percent of Broadway Viaduct traffic (13,200 ADT) would be diverted during construction. Traffic-dependent businesses would have reduced business during construction and more vehicle miles would be traveled due to detours. Trains would delay detoured traffic at at-grade intersections.	All of Broadway Viaduct traffic (29,300 ADT) would be detoured during construction and traffic-dependent businesses would be affected for a shorter timeframe than staged construction. More vehicle miles would be traveled due to detours. Trains would delay detoured traffic at at-grade intersections.
Right-of-way	No impacts would occur as acquisition of ROW along the Broadway Viaduct would not be required.	Less than 0.1 acre of ROW and temporary access easements would need to be acquired.	Same as staged construction but a smaller area of easements would be required due to the reduced maneuvering room needed for construction.
Construction	Extensive maintenance activities would temporarily generate traffic to and from the work site as well as generate increased air emissions and noise.	The primary temporary impacts would be related to construction noise, emissions, and detours. Traffic along detours would increase noise levels.	Same as staged construction but temporary impacts would occur for a shorter timeframe.
Pedestrians and Bicyclists	No impacts would occur as the No-Build Alternative would not affect the sidewalk on the Broadway Viaduct or proposals to extend pedestrian and bicycle facilities through the Study Area.	Pedestrian and bicycle access along Broadway between 8 <sup>th</sup> and 15 <sup>th</sup> Streets and along 10 <sup>th</sup> Street (and its associated sidewalks), 12 <sup>th</sup> Street, and 13 <sup>th</sup> Street adjacent and beneath the viaduct would be discontinued during construction activities.	Same as staged construction but discontinued access would occur for a shorter timeframe.

Resource	No-Build Alternative	Build Alternative	
		Staged Construction	Unstaged Construction
Archaeological Sites	No impacts would occur to archaeological sites within the Study Area.	No impacts would occur as no archaeological sites eligible for listing on the NRHP were identified in the Study Area.	Same as staged construction.
Historic Sites or Districts	No impacts would occur to historic sites or districts within the Study Area.	Of the 12 NRHP-eligible properties, the Project would have no effect on 11 properties and an adverse effect on the Broadway Viaduct.	Same as staged construction.
Recreation	The No-Build Alternative would not result in impacts on current or planned recreational facilities within or near the Study Area.	Although no acquisition of recreational land would occur, temporary access impacts are likely to parking located on the south side of the Broadway Skate Park.	Same as staged construction, but access impacts would occur over a shorter timeframe.
Section 4(f) Properties	No impacts on Section 4(f) resources, including the existing Broadway Viaduct, would occur because no action would take place on the Project.	One resource eligible for protection under Section 4(f), the Broadway Viaduct, would be used by the Build Alternative.	Same as staged construction.
Water Resources	Periodic maintenance activities are not projected to impact Indian Creek or groundwater.	Indian Creek would not be affected by channel relocation, or placement of fill material or bridge piers. Groundwater potentially encountered from pile installation could be contaminated.	Same as staged construction.
Floodplain	Impacts from regular periodic maintenance of the existing bridge would occur in 500-year floodplain.	No impacts to floodway or 100-year floodplain would occur because Project ROW is within 500-year floodplain. Pier placement would be similar to current placement with the potential for fewer piers.	Same as staged construction.
Vegetation	No impacts would occur as no natural areas and very little vegetation exist within the Study Area; none of the maintained grass areas within the Study Area would be affected.	Some of the grass areas in vacant lots adjacent to the viaduct would be temporarily disturbed and conversion of a small portion of maintained grass at the Broadway Skate Park to pavement may occur.	Similar to staged construction except during a shorter timeframe and less vegetation in vacant lots would be disturbed because of less maneuvering room.

Resource	No-Build Alternative	Build Alternative	
		Staged Construction	Unstaged Construction
Noise	Noise levels essentially remain unchanged from existing levels because there is minimal traffic growth projected in the Study Area between now and the design year 2030.	Noise levels along Broadway would remain unchanged from existing levels and the No-Build Alternative due to the new viaduct being built slightly higher on essentially the same alignment.	Same as staged construction.
Regulated Materials	Regulated material sites, including those with potential contamination, would not be impacted. However, extended maintenance of the viaduct would likely involve future paint removal and repainting, which could cause heavy metal contamination.	With the exception of the former American Recycling Facility (a high risk site) and Bob's Towing and Garage (a moderate risk site), other RECs present a low or minimal risk to the Project. Paint removal on the viaduct prior to demolition could cause heavy metal contamination.	Same as staged construction except the area of disturbance would be slightly smaller.
Visual Resources and Aesthetics	No visual impacts are expected to occur under the No-Build Alternative.	Future views from the viaduct and the views of the viaduct would remain essentially the same. During construction, the viewshed would be impacted.	Same as the staged alternative but the viewshed impact would occur during a shorter construction timeframe.
Cumulative Impacts	If the Broadway Viaduct would not be replaced and would undergo periodic, extensive maintenance, the other reasonably foreseeable projects would occur independently, and changes in land use, consolidation of railroad lines and utilities, construction of trails for pedestrians and bicyclists, and recreation sites may be delayed or become less attractive opportunities.	No adverse cumulative impacts are projected to occur based on the proposed timeframe and activities of the Project and other reasonably foreseeable proposals.	Same as the staged alternative, with a reduced potential for conflicts because of the shorter timeframe of the Project.

**SECTION 9**

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**REFERENCES**

## SECTION 9 REFERENCES

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- HDR. July 15, 2005a. Section 4(f) Decision Process Step 1.
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**APPENDIX A**

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**STREAMLINED RESOURCE CHECKLIST  
AND JUSTIFICATION**

The first column with a check means the resource is in the project area. The second column with a check means the impact to the resource warrants more discussion in this document. Resources without a check in the first and/or second column have been reviewed and are included in the summary (see the following page.)

SOCIOECONOMIC		NATURAL ENVIRONMENT	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Land Use	<input type="checkbox"/>	<input type="checkbox"/> Wetlands
<input type="checkbox"/>	<input type="checkbox"/> Community Cohesion	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Water Resources
<input type="checkbox"/>	<input type="checkbox"/> Relocation Potential	<input type="checkbox"/>	<input type="checkbox"/> Wild and Scenic Rivers
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Churches and Schools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Floodplain
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Railroads and Utilities	<input type="checkbox"/>	<input type="checkbox"/> Wildlife and Habitat
<input type="checkbox"/>	<input type="checkbox"/> Energy	<input type="checkbox"/>	<input type="checkbox"/> Farmlands
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Public Services	<input type="checkbox"/>	<input type="checkbox"/> Threatened and Endangered Species
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Environmental Justice	<input checked="" type="checkbox"/>	<input type="checkbox"/> Vegetation
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Transportation	<input type="checkbox"/>	<input type="checkbox"/> Ecosystem
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Right-of-Way	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Construction	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Pedestrians and Bicyclists		
<input type="checkbox"/>	<input type="checkbox"/>		
CULTURAL		PHYSICAL	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Archaeological Sites	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Noise
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Historic Sites or Districts	<input type="checkbox"/>	<input type="checkbox"/> Air Quality
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Recreation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Regulated Materials
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Section 4(f) Properties	<input checked="" type="checkbox"/>	<input type="checkbox"/> Visual Resources and Aesthetics
<input checked="" type="checkbox"/>	<b>CONTROVERSY POTENTIAL Closure of viaduct versus maintaining two lanes during construction.</b>		
<input checked="" type="checkbox"/>	<b>Section 4(f): Specify details : The viaduct is considered eligible for the NRHP and would be affected by any construction alternative. Other NRHP eligible resources potentially affected include Indian Creek Channel and building currently hosting Kelley's Carpet. Another 4(f) property potentially affected is the Skateboard Park.</b>		

**SOCIOECONOMIC Justification Section:**

<b>Community Cohesion</b>	
Evaluation and Date:	The viaduct will be replaced with a slightly wider structure essentially in the same location allowing north-south access beneath the viaduct. The viaduct is not a dividing line for junior or senior high schools. Consequently, no new separation would occur from replacement of the viaduct and community cohesion would not be affected. 5/18/05
Database Used:	None
Completed by:	Brian Goss
<b>Relocation Potential</b>	
Evaluation and Date:	The viaduct will be replaced with a slightly wider structure essentially in the same location. No relocations of businesses or residences are required. 5/18/05
Database Used:	City of Council Bluffs parcel database.
Completed by:	Brian Goss
<b>Energy</b>	
Evaluation and Date:	Energy would be consumed during construction of the new viaduct, including processing of materials for use in construction. The new viaduct would be wider than the existing viaduct and accommodate disabled vehicles in the shoulder, thus decreasing congestion and vehicle idling. Consequently, a slight reduction in vehicle fuel consumption would result in an energy savings. 5/18/05
Database Used:	None
Completed by:	Brian Goss

**PHYSICAL JUSTIFICATION Section: (Project manager will delete fields that are covered in document.)**

<b>Air Quality</b>	
Evaluation and Date:	The Council Bluffs area is in attainment with all criteria air pollutants. The project is not adding capacity to the viaduct. Traffic levels are anticipated to gradually increase with or without the project. No adverse impacts to air quality would occur. 5/18/05
Database Used:	USEPA Air Quality Non-Attainment Maps
Completed by:	Brian Goss

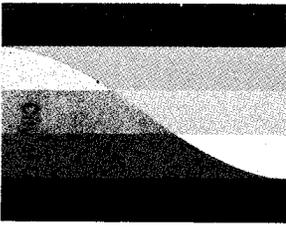
**NATURAL ENVIRONMENT Justification Section:**

<b>Wetlands</b>	
Evaluation and Date:	No wetlands exist in the project area, which is essentially along the existing alignment. 5/18/05
Database Used:	NWI database, and visual inspection.
Completed by:	Brian Goss
<b>Wild and Scenic Rivers</b>	
Evaluation and Date:	The only surface water in the project area is Indian Creek within a constructed channel that is not a wild, scenic, or recreational river. 5/18/05
Database Used:	National Park System database
Completed by:	Brian Goss
<b>Wildlife and Habitat</b>	
Evaluation and Date:	The project area is urban, with some grassy areas, minimal trees, and overall negligible wildlife habitat. In this area of Council Bluffs, Indian Creek is a concrete-lined channel with intermittent water flow, primarily fed by stormwater. Construction will occur along the same alignment as the existing viaduct. Consequently, wildlife and habitat would not be affected by the project. 5/18/05
Database Used:	None
Completed by:	Brian Goss
<b>Farmlands</b>	
Evaluation and Date:	The project area is urban with no farmlands. The project is within the planning area of Council Bluffs and is therefore exempt from the provisions of the Farmland Protection Policy Act. 5/18/05
Database Used:	None
Completed by:	Brian Goss
<b>Threatened and Endangered Species</b>	
Evaluation and Date:	The USFWS provided an early coordination letter identifying the typical species of concern for federal projects in Pottawattamie County: bald eagle, Indiana bat, least tern, piping plover, pallid sturgeon, prairie bush clover, western prairie fringed orchid, and eastern massasauga rattlesnake. The Iowa DNR noted in their early coordination letter that their databases found no records of rare species or significant natural communities in the project area, and concluded that further field surveys of the site were not required. Because this is an urban environment and impacts would occur on previously disturbed ground, the project would not cause impacts on threatened or endangered species. 5/18/05
Database Used:	None, but used information provided from Iowa DNR's database.
Completed by:	Brian Goss
<b>Ecosystem</b>	
Evaluation and Date:	As noted for the wildlife habitat discussion, this is an urban environment (primarily pavement) that includes minimal grass and trees. Indian Creek is an intermittent, concrete-lined ditch in the project area. Consequently, no ecosystem impacts are projected to occur.
Database Used:	None, but Iowa DNR noted their records showed the project area did not include any significant natural communities.
Completed by:	Brian Goss

**APPENDIX B**

---

**AGENCY CORRESPONDENCE AND COMMENT LETTERS**



**RECEIVED**

**OCT 21 2004**

**OFFICE OF LOCATION & ENVIRONMENT**

OFFICE OF:  
COMMUNITY DEVELOPMENT  
(712) 328-4629

October 20, 2004

DeeAnn Newell  
NEPA Section Document Manager  
IA Dept. of Transportation  
800 Lincoln Way  
Ames, IA 50313

RE: Broadway Street Viaduct Improvement Project,  
Council Bluffs, Iowa (Pottawattamie County)  
NHSX-6-1(109)-3H-78

Dear Ms. Newell:

Thank you for the information regarding the Broadway Street Viaduct Improvement Project. The project is located in an Urban Renewal Area within the City of Council Bluffs. The Mid-City Corridor Urban Renewal Plan was adopted by City Council on May 24, 2004 by Resolution No. 04-112. The objectives of the Mid-City Corridor Urban Renewal Plan call for the development of the area as open space and recreational activities. A copy of the Mid-City Corridor Urban Renewal Plan is attached for your information.

Additionally, enclosed is a copy of a Phase II Brownfields Targeted Assessment prepared on April 3, 2003 by the U.S. Environmental Protection Agency for the property located at 1207 West Broadway, formerly the American Recycling Center. The report found elevated concentrations of lead in the soil and in water samples in the nearby Indian Creek. The property is currently owned by the City of Council Bluffs.

Please utilize these documents in preparing your Environmental Assessment. If you should have any questions or need additional information, please do not hesitate to contact me or Tina Hochwender at (712) 328-4629.

Sincerely,

Donald D. Gross, Director  
Community Development Department

Enclosures

CITY OF COUNCIL BLUFFS, IOWA - 209 PEARL STREET - 51503-4270

FAX: (712) 328-4915

"An Equal Opportunity Employer"





RECEIVED

OCT 25 2004

OFFICE OF LOCATION & ENVIRONMENT

STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES  
JEFFREY R. VONK, DIRECTOR

October 21, 2004

DeeAnn Newell  
IDOT - NEPA Section  
800 Lincoln Way  
Ames, IA 50010

Dear Ms. Newell:

*This letter is in response to your request for information on potential impacts to US 6/Broadway Street viaduct project in Council Bluffs, Iowa, as they relate to the Federal Land & Water Conservation Fund (LWCF).*

*After review of the LWCF projects awarded to the City of Council Bluffs, it does not appear that there are any conflicts with viaduct project boundaries. I have also checked for projects in the area that may have been awarded a Resource Enhancement & Protection Fund (REAP) or Recreation Infrastructure Fund grant. Again, I do not find any potential conflicts.*

*Your early coordination process is very helpful to our office and the National Park Service as we both are responsible for ensuring LWCF projects remain in outdoor recreation, and conversions are kept to a minimum.*

*If our department or the Park Service find a potential conflict with the viaduct project, we will be in contact with your office right away. If you have any questions, I can be reached at 515-281-3013.*

Sincerely,

A handwritten signature in cursive script that reads "Kathleen Moench".

Kathleen Moench  
Budget & Finance Bureau

Enclosures



RECEIVED

NOV 1 2004

OFFICE OF LOCATION & ENVIRONMENT

STATE OF IOWA

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

DEPARTMENT OF NATURAL RESOURCES  
JEFFREY R. VONK, DIRECTOR

**October 27, 2004**

**Iowa Department of Transportation  
Attn: DeAnn Newell  
800 Lincoln Way  
Ames, Iowa 50010**

**RE: Broadway Street Viaduct Improvement Project in Council Bluffs,  
Pottawattamie County, Iowa. Project # NHSX-6-1(109)-3H-78.**

**Dear Ms. Newell,**

**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. While 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. Thus, we do not  
recommend further field surveys of the site. However, if listed species or rare  
communities are found during the planning or construction phases, additional  
studies and/or mitigation may be required.**

**If you have any questions about this letter or if you require further information,  
please contact Diane Ford-Shivvers at (515) 281-6341.**

**Sincerely,**

A handwritten signature in black ink, appearing to read "Mike Brandrup".

**MIKE BRANDRUP  
Division Administrator  
Conservation & Recreation Division**

**MB:mw**



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Rock Island Field Office  
4469 48<sup>th</sup> Avenue Court  
Rock Island, Illinois 61201  
Phone: (309) 793-5800 Fax: (309) 793-5804



IN REPLY REFER  
TO:

FWS/RIFO

NOV 2004

OFFICE OF LOCATION & ENVIRONMENT

October 27, 2004

Ms. DeeAnn Newell  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

Dear Ms. Newell:

This responds to your letter of October 14, 2004, requesting technical assistance regarding the presence of federally listed endangered species within the project area of the proposed Broadway Street Viaduct Improvements, Council Bluffs, Pottawattamie County, Iowa. 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 of species which may be present in the concerned area:

<u>Classification</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Habitat</u>
Threatened	Bald eagle	<i>Haliaeetus leucocephalus</i>	Wintering
Endangered	Indiana bat	<i>Myotis sodalis</i>	Caves, mines (hiberacula); small stream corridors with well developed riparian woods; upland forests (foraging)
Endangered	Least Tern	<i>Sterna antillarum</i>	Bare alluvial and dredged spoil islands; sand/gravel areas around fly ash ponds

Threatened	Piping Plover	<i>Charadrius melodus</i>	Bare alluvial and dredged spoil islands; sand/gravel areas around fly ash ponds
Endangered	Pallid Sturgeon	<i>Scaphirynchus albus</i>	Large rivers
Threatened	Prairie bush clover	<i>Lespedeza leptostachya</i>	Dry to mesic prairies with gravelly soil
Threatened	Western prairie fringed orchid	<i>Platanthera praeclara</i>	Mesic to wet prairies
Candidate	Eastern massasauga rattlesnake	<i>Sistrurus c. catenatus</i>	Shrub wetlands

The threatened bald eagle (*Haliaeetus leucocephalus*) is listed as wintering along large rivers, lakes, and reservoirs in Pottawattamie County, 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 (*Myotis sodalis*) may potentially occur in Pottawattamie County. Indiana bats migrate seasonally between winter hibernacula and summer roosting habitats. Winter hibernacula include caves and abandoned mines. Females form nursery colonies under the loose bark of trees (dead or alive) and/or cavities, where each female gives birth to a single young in June or early July. A single colony may utilize a number of roost trees during the summer, typically a primary roost tree and several alternates. The species or size of tree does not appear to influence whether Indiana bats utilize a tree for roosting provided the appropriate bark structure is present.

During the summer, the Indiana bat frequents the corridors of small streams with riparian woods as well as mature upland forests. It forages for insects along stream corridors, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fencerows, over farm ponds, and in pastures.

**Suitable summer habitat in Iowa is considered to have the following characteristics within a ½ mile radius of a project site:**

- 1) forest cover of 15% or greater;
- 2) permanent water;
- 3) one or more of the following tree species: 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) potential roost trees with 10% or more peeling or loose bark

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. In addition a search for this species should be made prior to any cave-impacting activities. If habitat is present or Indiana bats are known to be present, they must not be harmed, harassed, or disturbed when present, and this field office should be contacted for further assistance.

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 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.

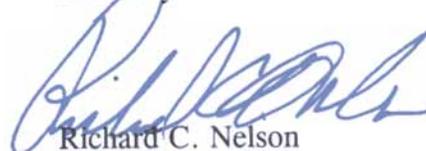
The project lies within the range of the eastern massasauga, a docile rattlesnake that is declining throughout its national range and is currently a Federal Candidate species. **[The snake is currently listed as endangered by the State of Iowa and is believed to occur in Pottawattamie County.]** Your 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  
Field Supervisor

November 1, 2004

**In reply refer to:  
R&C#: 041078095**

DeeAnn Newell, NEPA Section Document Manager  
Office of Location & Environment  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, IA 50010

Brett Weiland  
CH2M Hill  
6200 Aurora Avenue  
Suite 400 W  
Des Moines, Iowa 50322-2683

RE: FHWA – POTTAWATTAMIE COUNTY – CITY OF COUNCIL BLUFFS – NHSX-6-1(109)—3H-78 – BROADWAY STREET VIADUCT IMPROVEMENT PROJECT—CORRESPONDENCE

Dear Ms. Newell and Mr. Weiland,

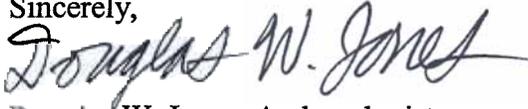
Thank you for notifying our office about the above referenced proposed project. We understand that this project will be a federal undertaking and will need to comply with Section 106 of the National Historic Preservation Act. We look forward to consulting with you and/or the Iowa Department of Transportation on the Area of Potential Effect for this proposed project and whether this project will affect any significant historic properties under 36 CFR Part 800.4. We will need the following types of information for our review:

- The Area of Potential Effect (APE) for this project needs to be adequately defined (36 CFR Part 800.16 (d)).
- Information on what types of cultural resources are or may be located in the APE (36 CFR Part 800.4).
- The significance of the historic properties in the APE in consideration of the National Register of Historic Places Criteria.

A determination from the responsible federal agency of the undertaking's effects on historical properties within the APE (36 CFR Part 800.5).

Please reference the Review and Compliance Number provided above in all future submitted correspondence to our office for this project. We look forward to further consulting with you, the Iowa Department of Transportation, and the Federal Highway Administration on this project. Should you have any questions please contact me at the number below.

Sincerely,

A handwritten signature in black ink that reads "Douglas W. Jones". The signature is written in a cursive style with a large initial 'D'.

Douglas W. Jones, Archaeologist  
State Historic Preservation Office  
State Historical Society of Iowa  
(515) 281-4358

cc: Mike La Pietra, FHWA  
Randall Faber, Office of Environmental Services, IDOT  
✓ Kris Reisenberg, NEPA, IDOT



# Iowa Department of Transportation

800 Lincoln Way, Ames, IA 50010

515-239-1364

FAX: 515-239-1726

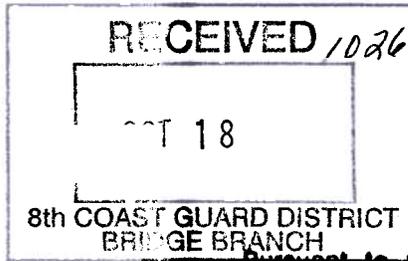
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NOV 15 2004

GENERAL COUNSEL

October 14, 2004

Mr. Roger Wiebusch  
Commander (OBR)  
U.S. Coast Guard  
1222 Spruce Street  
St. Louis, MO 63103



Pursuant to the Coast Guard Authorization Act of 1982, it has been determined this is not a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes. A Coast Guard bridge permit is not required.

Subject: **Broadway Street Viaduct Improvement Project**  
**Council Bluffs, Iowa (Pottawattamie County)**  
**NHSX-6-1(109)-3H-78**

*[Signature]*  
**ROGER K WIEBUSCH** (Date)  
Bridge Administrator  
Eighth Coast Guard District (obr)

Dear Mr. Wiebusch:

The Iowa Department of Transportation (DOT), is initiating environmental studies for the improvement of the US 30 / C Street Interchange, located in Cedar Rapids in Linn County (see attached map).

The proposed project consists of the replacement of the US 6/Broadway Street viaduct from 16<sup>th</sup> Street to 8<sup>th</sup> Street on the existing or an immediately adjacent alignment. It is anticipated that the proposed improvements may involve minor right-of-way impacts.

For the project as described above, as part of our required early coordination processing, the DOT is soliciting comments from your agency in regard to the project and its potential impacts as it related to your area of expertise and jurisdiction by law. This project is being developed for federal funding participation through the Federal Highway Administration, U.S. Department of Transportation. Your response by November 16, 2004 would be greatly appreciated.

Very truly yours,

*[Signature]*  
DeeAnn Newell  
NEPA Section Document Manager  
515-239-1364

*[Signature]*  
Brett Weiland  
CH2M HILL, Inc.  
515-270-2700 ext. 15

OB ROUTING				
	INFO	ACTION	FILE	INITIALS
OB				<i>[Initials]</i>
SEC				
CLERK				
BR SPEC		<i>WPK</i>		
BR SPEC				
BR SPEC				
BR SPEC				
COMMENTS:				



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, NORTHWESTERN DIVISION  
12565 WEST CENTER ROAD  
OMAHA NE 68144-3871

November 18, 2004

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NOV 19 2004

OFFICE OF LOCATION & ENVIRONMENT

Planning, Programs, and Project Management Division

Ms. Dee Ann Newell  
NEPA Section Document Manager  
Iowa Department of Transportation  
800 Lincoln Way  
Ames, Iowa 50010

Dear Ms. Newell

The U.S. Army Corps of Engineers, Omaha District (Corps) reviewed your letter dated October 19, 2004 regarding the proposed improvements of the Broadway Street Viaduct Project from 16<sup>th</sup> Street to 8<sup>th</sup> Street in the City of Council Bluffs, Iowa, Ref. # NHS-6-1(109)—3H78. The Corps offers the following comments.

It should be ensured that the proposed project is in compliance with flood plain management criteria of the City of Council Bluffs, Pottawattamie County and the State of Iowa. As a minimum, the design should ensure that the 100-year flood water surface elevation of any stream affected that has a designated floodway, is not increased relative to pre-project conditions. If a designated floodway has not been identified then the design should ensure that the 100-year floodwater surface elevation is not increased by more than one foot relative to pre-project conditions. It is desirable, however, that water surface elevations either remain the same or decrease as a result of this project.

If you have not already done so, it is recommend you consult with the U.S. Fish and Wildlife Service and the Iowa Department of Natural Resources regarding fish and wildlife resources. In addition, the Iowa State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

If construction activities involve any work in waters of the United States, a Section 404 permit may be required. For a detailed review of permit requirements, final project plans should be sent to:

U.S. Army Corps of Engineers, Rock Island District  
Regulatory Branch  
Clock Tower Building  
P.O. Box 2004  
Rock Island, Illinois 61204-2004

If you have any questions, please contact Ms. Erin Wilson at (402) 221-4882.

Sincerely,

  
Candace Gorton, Chief  
Environmental, Economics and  
Cultural Resources Section  
Planning Branch

**Copy Furnished:**

Mr. Brett Weiland  
CH2M Hill, Inc.  
6200 Aurora Avenue, Suite 400W  
Des Moines, Iowa 50322-2683



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS  
CLOCK TOWER BUILDING - P. O. BOX 2004  
ROCK ISLAND, ILLINOIS 61204-2004

December 17, 2004

Planning, Programs, and  
Project Management Division

Mr. Brett Weiland  
Environmental Scientist  
CH2M Hill  
6200 Aurora Avenue  
Suite 400W  
Des Moines, Iowa 50322-2683

Dear Mr. Weiland:

I received your letter dated October 14, 2004, and subsequent letter dated October 19, 2004, concerning the Broadway Street Viaduct Improvement Project in Council Bluffs, Iowa. Rock Island District staff reviewed the information you provided and have the following comments:

- a. Your proposal does not involve Rock Island District Corps of Engineers (Corps) administered land; therefore, no further Rock Island District Corps real estate coordination is necessary unless it is determined that right-of-way impacts will occur. If so, these impacts must be provided in the planning phase.
- b. Your project, as proposed, does not require a Department of the Army (DA) Section 404 permit. We made this determination because the proposed project does not indicate discharge of dredged or fill material into waters of the United States (including wetlands).
- c. The Responsible Federal Agency should coordinate with Ms. Maria Pandullo, Iowa Historic Preservation Agency, ATTN: Review and Compliance Program, State Historical Society of Iowa, Capitol Complex, Des Moines, Iowa 50319 to determine impacts to historic properties.
- d. The Rock Island Field Office of the U.S. Fish and Wildlife Service should be contacted to determine if any federally listed endangered species are being impacted and, if so, how to avoid or minimize impacts. The Rock Island Field Office address is: 4469 - 48th Avenue Court, Rock Island, Illinois 61201. Mr. Rick Nelson is the Field Supervisor. You can reach him by calling 309/793-5800.

e. The Iowa Emergency Management Division should be contacted to determine if the proposed project may impact areas designated as floodway. Mr. Dennis Harper is the Iowa State Hazard Mitigation Team Leader. His address is: Hoover State Office Bldg., Level A, Des Moines, Iowa 50319. You can reach him by calling 515/281-3231.

No other concerns surfaced during our review. Thank you for the opportunity to comment on your proposal. If you need more information, please call Dr. Sandra Brewer of our Economic and Environmental Analysis Branch, telephone 309/794-5171.

You may find additional information about the Corps' Rock Island District on our web site at <http://www.mvr.usace.army.mil>. To find out about other Districts within the Corps, you may visit web site: <http://www.usace.army.mil/divdistmap.html>.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth A. Barr". The signature is written in a cursive style with a large initial "K".

Kenneth A. Barr  
Chief, Economic and Environmental  
Analysis Branch



# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097

515-239-1726 FAX

March 4, 2005

Ref. No: NHSX-6-1(109)- -3H-78

Pottawattamie

Primary

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

R&C: 041078095

Dear Ralph:

**RE: Historical / Architectural Intensive Survey of the Broadway Street Viaduct Improvement Project in Council Bluffs, Iowa. Section 25,26,35,36 T75N-R44W**

Enclosed for your review is the Historical / Architectural Intensive Survey for the above-mentioned federal funded project. This project proposes a series of improvements to the Broadway Street and Viaduct in the City of Council Bluffs, Iowa. This architectural / historical study was conducted as part of an overall engineering study to evaluate alternatives for either the rehabilitation or the replacement of the Broadway Viaduct.

This historical / architectural survey was conducted using an extensive archival / records search, along with field inspections and photographic cataloging, both digital and 35mm. The area surveyed encompasses the Broadway Viaduct and the blocks immediately bordering the viaduct on the north and south sides.

During this investigation, a total of 59 architectural properties were examined. Of these properties, 21 were determined to be of modern age (less than 40 years old) and 38 properties were determined to be of historic age (40 years of age or older). Of these historic age properties, 26 were determined to be not eligible for the National Register for lack of sufficient integrity or significance. However, 12 historic properties were determined to be eligible for the National Register. These properties are described as follows:

**Property 78-00472:** *Our Savior's Scandinavian Evangelical Lutheran Church*, located at 829 Avenue A. This Danish Lutheran Church was constructed in 1877. The church is considered eligible for the National Register under Criterion A, for its historical significance to the community of Council Bluffs.

**Property 78-01758:** *Omaha & Council Bluffs Street Railway Substation*, located at 1311 Avenue A. This substation was constructed in 1920, as an electrical substation for the O&CB Street Railway electrified streetcar system. This building is considered eligible under Criterion A for its historical significance as one of the few surviving representatives of Council Bluffs' once-extensive street railway system and under Criterion C for its architectural significance as a stylish example of an early twentieth century utility substation associated with an electrified street railway system.

**Property 78-01755:** *Groneweg & Schentgen Co. Wholesale Grocers Warehouse*, located at 825 W. Broadway Street. This three-story brick building was constructed in 1901 as a wholesale grocery warehouse. This building is considered eligible for the National Register under Criterion C, due to its architectural significance as a well-preserved example of a stylish warehouse designed by a local architectural firm. This building is also considered eligible for the National Register under Criterion A for its historical significance as a representation of the importance of the Groneweg & Schoentgen Company to the commercial history of Council Bluffs, Iowa.

**Property 78-01754:** *Double-House*, located at 16 S. 8<sup>th</sup> Street. This two-story double-house dates from the early 20<sup>th</sup> Century and reflects the Craftsman stylistic influence in its architectural details. The house is considered eligible under Criterion C and potentially under Criterion A for its representation of the architectural design and historical development of multi-family housing in the early 20<sup>th</sup> Century Council Bluffs.

**Property 78-00240:** *Cottage House*, located at 816 1<sup>st</sup> Avenue. This Italian-influenced hipped cottage retains generally good architectural integrity and is considered eligible under National Register Criterion C as a comparatively well-preserved example of a stylish cottage built in the older residential neighborhood south of West Broadway and west of S. 8<sup>th</sup> Street.

**Property 78-01746:** *Chicago & North Western Railroad Freight Depot*, located at 1104 2<sup>nd</sup> Avenue.

This freight depot is considered eligible for the National Register under Criterion A for its historical association the Chicago Northwestern Railroad and is potentially eligible under Criterion C as the last physical remnant of the main passenger and freight depot yard of the Chicago and North Western in Council Bluffs.

**Properties 78-01739, 78-01740 to 78-01742 and 78-01771:** *The Indian Creek Channel District*, located from Council Lane to 16<sup>th</sup> Avenue. This concrete channel area was part of the 1936 to 1938 Public Works Administrations (PWA) project to control flooding along Indian Creek. This area is considered eligible for the National Register under Criterion A for its historical significance of this project to the development of Council Bluffs, Iowa. This proposed historic district includes the Indian Creek channel, itself, for the full length of the PWA channelization project, from Council Lane and 16<sup>th</sup> Avenue and the seven contributing railroad bridges within the current Broadway Viaduct study area between 11<sup>th</sup> Street and 13<sup>th</sup> Streets and along 1<sup>st</sup> Avenue.

**Property 78-01737:** *The Broadway Viaduct*, located at West Broadway between 8<sup>th</sup> and 15 Streets. This viaduct bridge structure was completed in 1955 and was built to overpass the numerous railroad tracks that intersect West Broadway between 8<sup>th</sup> and 15<sup>th</sup> Streets. This viaduct is considered eligible for the National Register under Criterion A, due to its represents an important construction in the mid to late 20<sup>th</sup> Century expansion and growth of the City of Council Bluffs.

The primarily design plans for the Broadway Street and Viaduct Improvement project are currently being developed, so it is unknown what, if any, of these historic properties will be impacted by this improvement project. Once design plans have been developed and any possible impacts determined, a separate letter of determination will be forwarded to you for review and comment.

If you do concur with the findings of this architectural / historical survey, please sign the concurrence line below. If you have any questions regarding this report or this project, please do not hesitate to contact me.

Sincerely,



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

MJFD

Enclosure

cc: John Selmer- Engineer- District 4  
Leah Rogers- Principal Investigator / Tallgrass  
Dee Ann Newell- Location and Environment

Concur:

---

SHPO Historian  
Comments:

Date:

APR 07 2005



# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097

515-239-1726 FAX

March 14, 2005

Ref. No: NHSX-6-1(109)-3H-78

Pottawattamie /

Primary

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

R&C: 041078095

Dear Doug:

**RE: Phase I Archaeological Investigation of the Broadway Street Viaduct  
Improvement Project in Council Bluffs, Iowa. Section 25,26,35,36 T75N-R44W**

Enclosed for your review and comment is the Phase I Archaeological Investigation for the above-mentioned federal funded project. This project proposes a series of improvements to the Broadway Street and Viaduct in the City of Council Bluffs, Iowa. This archaeological investigation was conducted as part of an overall engineering study to evaluate alternatives for either the rehabilitation or the replacement of the Broadway Viaduct.

The area of potential impact, investigated, measures 3100 ft. in length with a project width of 750 ft. A total area of 53.4 acres was investigated for this project.

This archaeological investigation was conducted using an extensive archival / records search, along with a pedestrian survey, auger tests and backhoe trenches. The project area is located within an urban setting and has been heavily impacted by historic and modern construction along with demolition activities.

During this archaeological investigation, four historic archaeological sites were identified: Sites 13PW169, 13PW170, 13PW171, and 13PW172. Sites 13PW169 to 13PW171 represent the remains of historic dwellings, while Site 13PW172 represents a remnant section of one of the abandoned railroad lines of the Chicago and Northwestern Railroad. None of these four historical sites was determined eligible for the National Register and no further work was recommended for them.

Based on the findings of this investigation, the determination is No Historic Properties Affected. If you do concur with this determination, please sign the concurrence line below. If you have any questions regarding this report or this project, please do not hesitate to contact me.

Sincerely,

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

MJFD

Enclosure

cc: John Selmer- Engineer- District 4  
Leah Rogers- Principal Investigator / Tallgrass  
Dee Ann Newell- Location and Environment

Concur:

SHPO Archaeologist

Comments:

Date:

4/22/2005



OFFICE OF:  
PUBLIC WORKS DEPARTMENT  
(712) 328-4634

September 14, 2005

Mr. Scott Suhr  
Iowa Department of Transportation  
P.O. Box 406  
Atlantic, IA 50022

RE: Broadway Viaduct

Dear Mr. Suhr,

It is my understanding that in the analysis of right-of-way impacts from the proposed US 6 Broadway Viaduct that the diagonal parking south of the city Skate Park may be impacted. Specifically, the proposed reconstruction of the viaduct may require shifting the parking a few feet to the north.

In consultation with Ron Hopp, Director of Parks and Recreation, we conclude this shifting of the parking spaces would have no effect on the use of the Skate Park.

The city looks forward to the reconstruction of the Broadway Viaduct at the earliest opportunity.

Sincerely,



Greg Reeder, P. E.  
Public Works Director

Cc: Ron Hopp, Parks & Recreation Director

SEP 16 2005  
DOT - SWITC  
ATLANTIC, IOWA





# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1097

515-239-1726 FAX

September 12, 2005

Ref. No: NHSX-6-1(109)-3H-78

Pottawattamie

Primary

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

R&C: 041078095

Dear Ralph:

**RE: Historical / Architectural Intensive Survey of the Broadway Street Viaduct Improvement Project in Council Bluffs, Iowa. Section 25,26,35,36 T75N-R44W Finding of Determination- No Historical Properties Affected**

Enclosed for your review and information is the Historical / Architectural Intensive Survey for the above-mentioned federal funded project. This project proposes a series of improvements to the Broadway Street and Viaduct in the City of Council Bluffs, Iowa. This architectural / historical study was conducted as part of an overall engineering study to evaluate alternatives for either the rehabilitation or the replacement of the Broadway Viaduct

This historical / architectural survey was conducted using an extensive archival / records search, along with field inspections and photographic cataloging, both digital and 35mm. The area surveyed encompasses the Broadway Viaduct and the blocks immediately bordering the viaduct on the north and south sides.

During this investigation, a total of 59 architectural properties were examined. Of these properties, 21 were determined to be of modern age (less than 40 years old) and 38 properties were determined to be of historic age (40 years of age or older). Of these historic age properties, 26 were determined to be not eligible for the National Register for lack of sufficient integrity or significance. However, 12 historic properties were determined to be eligible for the National Register. These properties are described as follows:

**Property 78-00472:** *Our Savior's Scandinavian Evangelical Lutheran Church*, located at 829 Avenue A. This Danish Lutheran Church was constructed in 1877. The church is considered eligible for the National Register under Criterion A, for its historical significance to the community of Council Bluffs.

**Property 78-01758:** *Omaha & Council Bluffs Street Railway Substation*, located at 1311 Avenue A.

This substation was constructed in 1920, as an electrical substation for the O&CB Street Railway electrified streetcar system. This building is considered eligible under Criterion A for its historical significance as one of the few surviving representatives of Council Bluffs' once-extensive street railway system and under Criterion C for its

architectural significance as a stylish example of an early twentieth century utility substation associated with an electrified street railway system.

**Property 78-01755:** *Groneweg & Schentgen Co. Wholesale Grocers Warehouse*, located at 825 W. Broadway Street. This three-story brick building was constructed in 1901 as a wholesale grocery warehouse. This building is considered eligible for the National Register under Criterion C, due to its architectural significance as a well-preserved example of a stylish warehouse designed by a local architectural firm. This building is also considered eligible for the National Register under Criterion A for its historical significance as a representation of the importance of the Groneweg & Schoentgen Company to the commercial history of Council Bluffs, Iowa.

**Property 78-01754:** *Double-House*, located at 16 S. 8<sup>th</sup> Street. This two-story double-house dates from the early 20<sup>th</sup> Century and reflects the Craftsman stylistic influence in its architectural details. The house is considered eligible under Criterion C and potentially under Criterion A for its representation of the architectural design and historical development of multi-family housing in the early 20<sup>th</sup> Century Council Bluffs.

**Property 78-00240:** *Cottage House*, located at 816 1<sup>st</sup> Avenue. This Italian-influenced hipped cottage retains generally good architectural integrity and is considered eligible under National Register Criterion C as a comparatively well-preserved example of a stylish cottage built in the older residential neighborhood south of West Broadway and west of S. 8<sup>th</sup> Street.

**Property 78-01746:** *Chicago & North Western Railroad Freight Depot*, located at 1104 2<sup>nd</sup> Avenue.

This freight depot is considered eligible for the National Register under Criterion A for its historical association the Chicago Northwestern Railroad and is potentially eligible under Criterion C as the last physical remnant of the main passenger and freight depot yard of the Chicago and North Western in Council Bluffs.

**Properties 78-01739, 78-01740 to 78-01742 and 78-01771:** *The Indian Creek Channel District*, located from Council Lane to 16<sup>th</sup> Avenue. This concrete channel area was part of the 1936 to 1938 Public Works Administrations (PWA) project to control flooding along Indian Creek. This area is considered eligible for the National Register under Criterion A for its historical significance of this project to the development of Council Bluffs, Iowa. This proposed historic district includes the Indian Creek channel, itself, for the full length of the PWA channelization project, from Council Lane and 16<sup>th</sup> Avenue and the seven contributing railroad bridges within the current Broadway Viaduct study area between 11<sup>th</sup> Street and 13<sup>th</sup> Streets and along 1<sup>st</sup> Avenue.

**Property 78-01737:** *The Broadway Viaduct*, located at West Broadway between 8<sup>th</sup> and 15 Streets. This viaduct bridge structure was completed in 1955 and was built to overpass the numerous railroad tracks that intersect West Broadway between 8<sup>th</sup> and 15<sup>th</sup> Streets. This viaduct is considered eligible for the National Register under Criterion A, due to its represents an important construction in the mid to late 20<sup>th</sup> Century expansion and growth of the City of Council Bluffs.

This concurrence letter was previous sent to you in March of 2005. At that time, it was not known if any of the historic properties would be impacted by this project. After reviewing the most recent design plans and discussing the matter with the design engineers, it has been determined that none of the historic properties mentioned in Architectural / Historical Phase I will be impacted by this project.

Based on the findings of this investigation and the review of current design plans and information, the determinations in regards to historic architectural properties are **No Historical Properties Affected**. If you do concur with this determination, please sign the concurrence line below. If you have any questions regarding this report or this project, please do not hesitate to contact me.

Sincerely,



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

MJFD  
Enclosure

cc: John Selmer- Engineer- District 4  
Leah Rogers- Principal Investigator / Tallgrass  
Kris Riesenber- OLE

Concur:

SHPO Historian

Date:

Comments:

*We would concur a finding of No Adverse  
Effect on these properties*



10/14/05



# Iowa Department of Transportation

800 Lincoln Way, Ames, Iowa 50010

515-239-1795

515-239-1726 FAX

November 22, 2005

Ref. No: NHSX-6-1(109)--3H-78

Pottawattamie

Primary

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

**R&C: 041078095**

Dear Ralph:

**RE: The Broadway Street Viaduct, Council Bluffs, Iowa  
Supplemental Letter: Determination of Adverse Effect**

Enclosed for your review is this supplemental letter regarding the impacts to the Broadway Viaduct Bridge and other historic properties within the project corridor study. Attached is a copy the September 12, 2005 letter of determination. Since that letter, further information is available that negates the findings of the September letter. Please refer to the September letter for a description of the historic properties. Following is a discussion of the project affects.

*Preferred alternative:*

The preferred alternative, which is expected to be developed, is to replace the existing 64 ft wide viaduct on the present alignment. The new structure would consist of a 1,400 ft x 80 ft concrete girder bridge and walled approach grade. The viaduct would be widened on both sides of the present centerline, 7 ft to the south and 9 ft to the north. The additional width will accommodate a 4-lanes divided roadway with 8 ft outer shoulders and a pedestrian/bike path. The approach grade will be raised approximately a foot to accommodate the needed vertical clearance under the viaduct for traffic on 10<sup>th</sup> and 12<sup>th</sup> St and the railroad.

*Construction Vibration*

The historic properties within a study area of 260 ft from the Broadway Viaduct abutment and piers are within a range that the construction vibrations may be of concern. A simple vibration study was conducted with a recommendation that project contractor not use pile driving techniques that will cause a vibration risk to historic properties. If the construction methods do not minimize vibrations, it is recommended that the historic properties within 260 ft of the abutments and

piers be monitored pre, during and post construction. The DOT recommends that a note be included on the plans to caution the contractor to use demolition methods that will not cause an undue risk to the historic properties within 260 ft of the work zone.

#### *Historic Warehouse*

The historic warehouse (78-01755) is presently 20 ft from the Broadway curb near 8<sup>th</sup> St. Broadway will begin widening along the warehouse requiring additional right of way. The grade will not noticeably be raised along the warehouse. The project proposes to move the existing safety barrier between the roadway and the building 1- 4 ft closer to the building. The space along the north edge of the building is presently used as a private 1 lane drive. The safety barrier could restrict the use of the drive. The minimal encroachment of Broadway will not appreciably diminish the view shed any more than already exists or impact any historic feature of the building.

#### *Church, Substation, Double-house, Cottage and Freight Depot*

The Scandinavian Lutheran Church (78-00472), street railway substation (78-01758), the two homes (78-01754 & 78-00240) and the C&NW freight depot (78-01746) will not be directly affected by the project. The view shed will not be appreciably different than what exists today. The substation and depot are included in the vibration discussion. Note that the city plans to demolish the substation and is mitigating that activity through a separate agreement with SHPO.

#### *Indian Creek District*

The channel and the railroad bridges that are contributing element to the district will remain unchanged. The view shed will not appreciably change. Beyond the above discussion of vibration concerns which apply to the Indian Creek District, the design engineers should be cautioned about designing the pier placement in a manner to minimize the risk of damage to the covered creek.

#### *Broadway Viaduct replacement*

The replacement of the Broadway Viaduct will be an **Adverse Effect** on the historic viaduct. The resolution of the adverse effect determination will require mitigation steps in accordance with CFR 800.6 of the Federal Code. The FHWA, DOT, SHPO and the City of Council Bluffs will consult about mitigation measures. The mitigation measures will be documented in a Memorandum of Agreement according to CFR 800.6(b).

If you do concur with the findings of this determination of effect review, please sign the concurrence line below. If you have any questions regarding this report or this project, please do not hesitate to contact me.

Sincerely,



Judy McDonald

Office of Location and Environment  
Judy.mcdonald@dot.iowa.gov

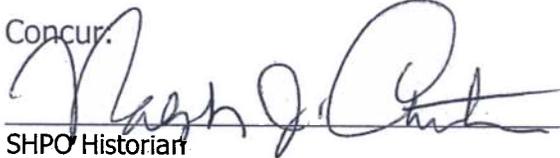
Enclosure

cc: John Selmer- Engineer- District 4

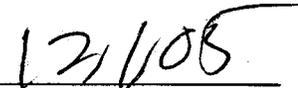
DeeAnn Newell - OLE

CH2MHill

Concur.



SHPO Historian  
Comments:



Date:

## IOWA DEPARTMENT OF TRANSPORTATION

To Office Federal Highway Administration

Date: December 15, 2005

Attention Philip Barnes

Ref. No. NHSX-6-1(109)—3H-78

From James Rost, Director 

City of Council Bluffs  
Pottawattamie County

Office Environmental Services

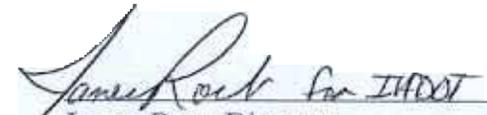
Subject Adverse Effect – Broadway Viaduct

The Iowa DOT are proposing to use Federal funds to replace the Broadway Viaduct. The viaduct is a 2,114 x 64 ft continuous steel beam bridge plus cellular approach abutments which has been determined to be eligible for the National Register under Criterion A and potentially Criterion B. The historic property cannot be avoided.

The Iowa State Historic Preservation Officer (SHPO), the City of Council Bluffs, the Iowa DOT and Federal Highway Administration (FHWA) will enter into consultation to resolve the adverse affect in accordance with 36CFR800.6. A Memorandum of Agreement to mitigate the impacts to the historic property will be developed through consultation.

This memo is to request that FHWA notify and invite the Advisory Council to participate in the MOA in accordance with 36 CFR 800.6(a)(1). The Advisory Council may access the project documentation specified in 36 CFR 800. 11(f) by internet through this URL <ftp://fhwa@165.206.203.34/> and enter the password, *hbddim*. The file name is Broadway Viaduct - AE.

If you have any questions, please contact Judy McDonald at 239-1795.

  
James Rost, Director  
Office of Location & Environment

JR:JM

Attachment

cc: John Selmar, District 4  
DeeAnn Newell, OLE

**APPENDIX C**

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**PROGRAMMATIC SECTION 4(f) EVALUATION**

## Iowa Department of Transportation

To Office	Federal Highway Administration	Date: November 4, 2005
Attention	Philip Barnes, Division Administrator	Ref No. NHSX-6-1(109)—3H-78
From	James Rost, Director	County: Pottawattamie
Office	Location and Environment	
Subject	Programmatic 4(f) approval for Historic Bridge – Broadway Viaduct	

The referenced project (removal of the National Register of Historic Places eligible Broadway Viaduct) has completed the 4(f) process. This project fits the standard for a programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges.

The following determinations have been met:

1. The No-Build Alternative was evaluated but was determined to be not feasible or prudent because it would not meet the purpose of the project to address structural problems leading to the viaduct reaching the end of its useful life and functional issues such as a lack of shoulders, inadequate pedestrian protection, and vertical clearance less than design criteria.
2. Options for repair of portions of the viaduct were considered. Although these are feasible and prudent options, the modifications to meet current functional and structural standards would impact the historic structure. Additionally, a lower life expectancy and more maintenance activities would result from repairing the structure rather than constructing a new viaduct.
3. Options for constructing the viaduct on a new alignment were evaluated and determined not to be prudent because they would result in the use of additional properties eligible for protection under Section 4(f), and the existing viaduct would need to be demolished because it serves no other transportation function.
4. There is no feasible and prudent option that would not result in a direct use of at least one property eligible for protection under Section 4(f), specifically the Broadway Viaduct. Consequently, demolition of the viaduct and construction of a new viaduct along the existing alignment is the most prudent option.
5. The proposed action includes all possible planning to minimize harm to the historic structure. A Memorandum of Agreement (MOA) among the Federal Highway Administration, the Iowa DOT, and the Iowa State Historic Preservation Officer (attached MOA) was agreed to which includes specific mitigation for this project.

\_\_\_\_\_  
James Rost, Director  
Office of Location and Environment

Concur: \_\_\_\_\_  
For the Federal Highway Administration

Date: \_\_\_\_\_

**APPENDIX D**

---

**SECTION 106 MEMORANDUM OF AGREEMENT**

**DRAFT**

# MEMORANDUM OF AGREEMENT

Between  
The Federal Highway Administration  
and  
The Iowa State Historic Preservation Office

Regarding

The Replacement of the Broadway Viaduct

NHSX-6-1(109)—3H-78  
R&C# 041078095

**WHEREAS**, the Federal Highway Administration (FHWA) has determined that the replacement of the 1,394 ft I-Beam Steel and continuous-span bridge with cellular-walled approach abutments that carries Iowa Highway 6 traffic over several railroad tracks in the City of Council Bluffs would have an adverse effect upon this property which is eligible for listing on the National Register of Historic Places (NRHP), and has consulted with the Iowa State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800 regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. Section 470f).

**WHEREAS**, the consulting parties agreed that it is in the public interest to expend funds to implement this project through documentation of the historic property thereby mitigating the adverse effects of the project;

**WHEREAS**, no other resources, historical, architectural or archaeologically eligible for the National Register will be adversely effected by the proposed project;

**WHEREAS**, the Iowa Department of Transportation (IaDOT) will let and construct the proposed undertaking, has participated in the consultation with FHWA and IaSHPO and has been invited to participate in this Memorandum of Agreement;

**WHEREAS**, the City of Council Bluffs has been consulted and has been invited to concur in this Memorandum of Agreement; and

**WHEREAS**, Native American tribes have been notified and no objection has been raised to work proposed; and

**NOW, THEREFORE**, FHWA shall ensure that the following terms and conditions, including the

**DRAFT**

appended *Iowa Historic Properties Study – Bridges*, will be implemented in a timely manner and with adequate resources in compliance with the National Historic Preservation Act of 1966 (U.S.C.470).

**STIPULATIONS**

FHWA will ensure that the following measures are carried out:

**A. Conditional No Adverse Effect**

1. The project designer shall be advised of the historic properties within 260 ft of the project area. The project shall be designed to minimize the risk of construction vibration damage to historic properties.
2. A note to the Contractor shall be placed on plan sheets that advised the contractor to use construction methods to reduce the risk to construction vibration damage to historic properties within 260 ft of the abutments and piers.

**B. Bridge Documentation**

1. The Iowa DOT shall document the structure in accordance with the recordation plan *Iowa Historic Property Study: Bridges* attached to the MOA as Appendix A.
2. The Iowa DOT shall carry out this documentation plan, as approved by the SHPO, in a manner consistent with applicable criteria for meeting the Secretary of Interior's four standards for architectural and engineering documentation (48FR4431) and by a person or firm whose education and professional experience meets the Secretary of the Interior's Professional Qualification Standards (48FR44738-9) for historians.
3. The Iowa DOT may proceed with construction of the bridge after the SHPO has approved the photos of the bridge and other field information gathered at the bridge site.
4. The Iowa DOT shall notify the SHPO within 30 days of the demolition of the bridge.
5. The Iowa DOT shall submit the draft version of the documentation, attached as Appendix A, to the Iowa SHPO for review within 12 months of SHPO's approval of the photos and gathered information. If SHPO does not provide comments within 45 days of receipt, the author may proceed to finalize the document.
6. The Iowa DOT shall provide copies of the final documentation to signatories of this MOA and the local historical society and Council Bluffs Public Library, and local high schools libraries.

**DRAFT**

**C. Unexpected Discovery**

***Archaeology***

If construction work should uncover previously undetected archaeological materials, the Iowa DOT will cease construction activities involving subsurface disturbances in the area of the resource and notify the Iowa SHPO of the discovery and proceed with the following procedure.

1. The Iowa SHPO, or an archaeologist retained by the Iowa DOT that meets the Secretary of the Interior's Standards for archeology, will immediately inspect the work site and determine the extent of the affected archaeological resource. Construction work may continue in the area outside the archaeological resource as defined by the Iowa SHPO or by Iowa SHPO in consultation with the Iowa DOT's retained archaeologist.
2. Within 14 days of the original notification of discovery, the Iowa DOT, in consultation with the Iowa SHPO, will determine the National Register eligibility of the resource. The Iowa DOT may extend this 14-day calendar period one time by an additional 7 days by providing written notice to the Iowa SHPO prior to the expiration date of said 14-day calendar period.
3. If the resource is determined eligible for the National Register, the Iowa DOT shall submit a plan for its avoidance, protection, recovery of information, or destruction without data recovery to Iowa SHPO for review and comment. The Iowa DOT will notify all consulting parties including interested tribes of the unanticipated discovery and provide the proposed treatment plan for their consideration. The Iowa SHPO and consulting parties will have 7 days to provide comments on the proposed treatment plan to the Iowa DOT and FHWA upon receipt of the information.
4. Work in the affected area shall resume upon either:
  - a. the development and implementation of an appropriate data recovery plan or other recommended mitigation procedures, or
  - b. the determination by Iowa SHPO that the newly located archaeological materials are not eligible for inclusion on the National Register.

***Human Graves***

In the event that human remains or burials are encountered during additional archaeological investigations or construction activities, the Iowa DOT shall proceed with the following process:

1. Cease work in the area and take appropriate steps to secure the site.
2. Notify the Office of Locations and Environment, the Office of the State Archaeologist and the SHPO.
3. If the remains appear to be ancient (i.e., older than 150 years), the state agency responsible for ancient burials shall have jurisdiction to ensure NAGPRA and the implementing regulations (43CFR10) are observed. The deposition of the remains will be determined in consultation with the culturally affiliated tribe(s) if known.

**DRAFT**

4. If the remains appear to be less than 150 years old, the remains may be legally protected under Iowa Code, Chapter 566 and the Iowa Department of Health would be notified.

**C. Administrative Conditions**

1. Modifications, amendments or termination of this agreement as necessary shall be accomplished through consultation and written agreement of all the signatories.
2. Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree regarding a dispute, any one of the signatories may request the participation of the Council to assist in resolving the dispute according to 36CFR 800.7.
3. The terms of the agreement shall be reviewed to determine if revisions are needed if its terms are not carried out within five (5) years from the date of its execution.

Execution of this Memorandum of Agreement by FHWA, Iowa DOT and the Iowa SHPO is evidence that FHWA has taken into account the effects of the undertaking on historic properties.

**Signatories:**

By: \_\_\_\_\_  
*FHWA Iowa Division* *Date*

By: \_\_\_\_\_  
*Iowa State Historic Preservation Officer* *Date*

By: \_\_\_\_\_  
*Iowa Department of Transportation* *Date*  
*Office of Location and Environment*

**Concur:**

By: \_\_\_\_\_  
*City of Council Bluffs* *Date*

## **DRAFT**

### **Appendix A**

#### Iowa Historic Property Study: Bridge **Broadway Viaduct Council Bluffs, Iowa**

The documentation identified below is for Iowa bridge properties of state and local significance. It is to be written for a broad public audience--kept simple, direct, and free of technical and academic jargon. The information is to be presented (i.e., edited, cataloged and packaged) in accordance with Historic Preservation Bureau guidelines. In its content, quality, materials, and presentation, the study will meet the Secretary of Interior's four standards for architectural and engineering documentation (48 FR 44731).

The purpose of the report will be to place the bridge in engineering and historical perspective. Emphasis is to be on its local or state historical context because the specific engineering qualities of the bridge have already largely been covered in the statewide 1993 Historic Bridge Inventory, prepared by consultant Fraserdesign for the Iowa Department of Transportation. Of course, new research information that modifies or corrects previous survey findings will be cited.

The research emphasis will be placed on recovering information about local or state context surrounding the building of the bridge based on primary sources to the greatest extent possible. Thus, the weight of total effort is to be given not to elaborate engineering description or structure photography, but to amplifying what is known about the story of the bridge as grasped through research in local newspapers, courthouse records, etc.. The test of responsiveness to documentation projects under this historic property study series will be more on the depth of local historical sources consulted than on the numbers of site photographs produced.

The documentation prepared for the purpose of inclusion in the State Historical Society of Iowa's collections must meet the requirements below. The Society's historic preservation office retains the right to refuse to accept documentation for inclusion in its collections when that documentation (edited, cataloged, and packaged) does not meet requirements as specified below.

#### **Kinds of Documentation to be Gathered:**

1. *Iowa Site Inventory Number, Historical Architectural Data Base Number, and Photograph (black and white film roll number and color slide sheet) Numbers:* Three kinds of project reference numbers are to be obtained from the statewide inventory coordinator at the State Historical Society's historic preservation office. The first is the Iowa Site Inventory Number, which can be assigned upon providing a specific street address in a town or city or, for rural areas, its quarter section, township and range. This number would be cited in the report, appear on reference maps and site plans, and be identified on photographic prints, slides, etc. The second number refers to the number assigned

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for entering this report into the state's Historic Architectural Data Base (HADB) through completing the HADB form for inclusion in the appendix. The third class of numbers are film roll numbers and color slide 20-slot sheet number to be obtained from the State Historical Society's Inventory Coordinator so that images can be cataloged into the agency's file system and cross-referenced to Iowa Site Inventory Forms.

2. *Photographs:* Unless stipulated elsewhere, the coverage will be field photography, with each view made with both 35mm black and white film and Kodachrome-64 color slides. The black and white photographs shall be on fiber-based papers or on resin-coated papers of double or medium-weight paper that have been processed in trays in order to meet guidelines outlined in National Register Bulletin 16A. The documentation is to meet requirements for ready inclusion in the records of the State Historical Society of Iowa. The minimum number and kind of views taken will be in accord with those assigned in diagrams for recording bridge details illustrated by bridge historian, James C. Hippen. Other views will include at least two contextual views showing the bridge's placement on the landscape plus, as needed, special shots of the particular bridge in order to adequately illustrate what is significant or valuable about the structure(s).
3. *Existing drawings* of the bridge either as built or altered, if available, will be selected and appropriately reproduced.
4. *Available historic photographs or illustrations* that reveal the bridge under construction or in later use will be selected and appropriately reproduced.
5. *Basic bridge facts* about its origins, design and construction features will be handled by attaching as the lead element of the appendix of the report a copy of the completed survey and HAER inventory forms contained in the 1993 Historic Bridge Inventory, prepared by consultant Fraserdesign for the Iowa Department of Transportation.
6. *Narrative Report*, printed on archival bond paper, of approximately ten pages. Statements within the narrative are to be footnoted as to their sources, where appropriate. The format for presentation is stated below.

### **Format for the Narrative Report:**

#### *Cover Page:*

Includes report title, governmental entity or source of support for sponsoring the survey, author/authors, name of affiliated firm or research organization, date of report.

#### *Acknowledgments* (if applicable)

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This might include acknowledgment of valuable oral informants, or recognition of those who provided useful research leads, tendered special library assistance or helped locate and access useful courthouse archives.

### *Table of Content*

#### *Introduction:*

Describes purpose of project, time frame when research and field work occurred, and limitations of the project.

*Part I: The Bridge Today* takes the reader to the property, describing where it is situated, its general appearance, and important physical characteristics of its setting and landscape features that have influenced the way things developed.

*Part II: Historical Background* steps back to explain the bridge's time of original construction.

Based on newspaper and other available sources, the narrative will seek to explain such developments as:

1. The impetus for construction of the bridge (e.g., local landowners, new transportation route, destruction of previous bridge);
2. The reason for designing or placing this particular kind of bridge at this location (e.g., a particular design preferred by the county engineer, a particular bridge company favored by contracts)
3. Selection of this particular bridge and its fabricator.

*Part III: Construction history* documents the physical evolution of the bridge and subsequent alterations.

Aspects to bear in mind include:

1. Story of building the bridge and by whom it was done. Special emphasis will be on significant events in the building process, such as technical or financial problems faced, construction delays, and the need to redesign details or re-fabricate elements.
2. Later changes to the bridge, identifying what was done and why it was made necessary.

*Part IV: Significance* of the bridge. State in what way the bridge helps interpret local and state development in transportation or contribute to understanding how a type, period or method of construction developed, or exemplify the achievement of person(s) who designed or built it.

This might address such matters as:

1. The role that this bridge played in local transportation and political, industrial or social history. Indicate, if known, how its completion was received and recognized as important by the public as gleaned through notices of celebrations, picnics, orators present at the opening of the structure for use.

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2. The relative place of the bridge designer/bridge company in local and state history.
3. The bridge as a demonstration of new, innovative, or typical bridge design practices and uses of material.

Available photographs, illustrations, or site plan will be integrated into the narrative as needed to help convey the property's interpretive value.

*Part IV: Reference Sources*

A paragraph or two about the quality and quantity of information consulted, its location, noting any conflicts in source materials, their accuracy, biases or noteworthy historical perspectives. This would be followed by a bibliography of the reference source materials.

*Part V: Appendices*

The information here--if not placed elsewhere in the report--would include, but not be limited to, the following:

1. A copy of the completed survey and HAER inventory forms contained in the 1993 Historic Bridge Inventory, prepared by consultant Fraserdesign for the Iowa Department of Transportation.
2. A site plan drawing showing the bridge's relation to immediate landscape and river/road configuration.
3. Map(s) showing location in county/town, changes in property size, etc.
4. A 5" X 7" enlargement of each black and white view taken to satisfy specifications above, arranged sequentially, from the most general view to the most detailed view. Each is to be labeled on the back as to bridge name, Iowa Site Inventory Number, and roll/frame number with a No. 1 (soft) pencil or archival pen, and placed in Print-File (57-4P), or equivalent, sleeve. Photographs on paper that will not accept pencil marks (including certain resin-coated papers) may be labeled with an archivally stable, permanent audio-visual marking pen, as per instructions on page 65 of *National Register Bulletin 16A*.
5. A "Photograph Catalog Field Sheet" for each sleeve of black and white negatives and for each 20-slot sleeve of color slides.
6. Negatives of 35mm (ASA 125 or less) black and white film in Print-File (35-7B), or equivalent, sleeves.
7. A contact print for each roll of black and white film placed in a Print-File (810-1B), or equivalent, sleeve.
8. Kodachrome-64 slides properly labeled (property name, Iowa Site Inventory Number, and Slide sleeve number/slot number) and placed in Print-File (2x2-20B), or equivalent, 20-slot sleeves.
9. Completed Iowa Historical Architectural Data Base (HADB) form.
10. Other relevant information (e.g., photocopy of biographical information about the bridge builder).